Food and Agriculture Organization of the United Nations

Territorial tools for agro-industry development

A Sourcebook

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Territorial tools for agro-industry development

A Sourcebook

Edited by
Eva Gálvez Nogales
and Martin Webber

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Executive summary

PURPOSE AND CONTEXT

This Sourcebook discusses agroterritorial development policies and programmes aimed at: (i) promoting spatially defined agribusiness/agro-industrial investments and (ii) strengthening agribusiness and agro-industrial competitiveness. Its purpose is to gather together and analyse a set of agroterritorial planning and policy instruments and present practical information about them. It considers the nature and objectives of each of five instruments (*economic corridors*, *clusters*, *special economic zones [SEZs]*, *industrial parks* and *incubators*), approaches that have been used to implement them, and practices that have led to both successful and unsuccessful outcomes. The Sourcebook highlights what each instrument is designed to achieve and the conditions that will enable it to deliver the expected outcomes. Supportive investment promotion policies and instruments are reviewed and governance issues examined.

Geography has always been a major dimension of human activity, through a combination of discoveries, migrations, urbanization and trade. However, it is only recently that it has been recognized as an essential dimension of economic development. Economic development is generally uneven across territories at all levels, locally, regionally and globally. As economies and incomes grow and societies transform from rural to urban, production tends to become increasingly concentrated in spatial terms. Some geographies – cities, coastal areas and connected countries – are favoured by producers and traders. This unevenness creates disparities in economic density, incomes and living standards. It has resulted in the wealth divide between industrialized and developing countries, and often amplified gaps between regions of the same country.

Agriculture and agribusiness are the mainstay of many economies. However, in the developing world, this sector offers only low productivity, compared with wealthier economies and with the manufacturing and service sectors. Yet in an industrialized, globalized and increasingly urbanized world, agribusiness – and agri-food systems in general – has been transforming rapidly. Once concerned primarily with growing, packaging and delivering products to markets, agro-industry has now become a highly industrialized sector, with considerable medium- and large-scale investment, and worldwide networks and global supply chains that deliver substantially transformed agricultural products to businesses and consumers in both near and distant economies and markets.

The various actors and stakeholders in the agro-industrial sector share a range of complementary objectives. Producers and their organizations seek larger markets and better market access, and often forward integration into value addition and supporting services. Agro-industrial businesses look for new and reliable sources of supply, and the comparative and competitive advantages that result from these sources. Individual entrepreneurs look for new business opportunities, in value addition, intermediation, service provision and scale. Governments seek new

investments, increased exports, value addition, food security and job creation. Each of these actors and stakeholders is thus engaged in a highly competitive effort to generate or attract the investment that responds and builds upon productivity and locational advantage.

Geography matters in realizing these objectives. To be efficient, local supply links need to be strong, interconnected and supported by an enabling environment and a synergistic approach facilitated by governments and the business community. Geography and territorial development are more and more important and relevant for development policies because of the worldwide trend towards economic integration and globalization of supply chains, including for agriculture and agribusiness products. The speed of technological change, economic dynamics and human migrations, progress in transportation and logistics all contribute to this phenomenon.

Regional development and spatial inclusion are at the centre of the challenges that will face Africa in the decades to come. Poverty in Africa has a strong spatial dimension, and regional disparities are a major obstacle to structural transformation. These regional disparities and insufficient spatial inclusion hinder inclusive growth. Spatial factors account for a great deal of the pervasive poverty and spatial inequalities that fuel inefficient migration and urban poverty on the continent. In Asia and in Latin America, many countries have designed and launched ambitious master plans that put the development of economic corridors at the centre of their strategies. This is the case in Indonesia, which in 2013 launched a Master Plan for Economic Integration and Poverty Reduction.

From a historical and global perspective, the main drivers of territorial development can be grouped in four categories:

- natural resource endowment;
- population and demography;
- transportation and logistics;
- policies.

As far as policies are concerned, the main question is how to influence the above processes – whether to accelerate them, mitigate their consequences, or both. China, for instance, has been trying to achieve the latter over the last few decades. This is where territorial planning comes into play. Territorial planning coordinates or integrates the spatial dimension of sectoral policies through a territorially based strategy. In terms of economic dynamics, the determinants of territorial development can be considered as the result of the interplay of three market forces: agglomeration economies, trade and specialization, and migration. One of the central questions in the territorial development debate is whether these three driving forces should be influenced to stimulate the concentration and foster the competitiveness of economic activities in certain locations, and how this can be achieved in an effective manner. Specifically, should governments, through proactive public strategies, influence the location decision of firms and workers and, if so, how? What are the pros and cons of various territorial development approaches and what are the trade-offs involved for policy-makers? What are the policy instruments available for governments? These are some of the questions that this Sourcebook seeks to address.

The five policy instruments are used to attract and concentrate agro-industrial investments as a way to enhance value addition, create jobs, increase exports

and provide markets for new and existing producers. These investment promotion instruments have a strong territorial or spatial aspect and impact, and entail important policy dimensions. Much has been learned about the use of these policy instruments in industries such as non-agricultural assembly, and the manufacturing and service sectors. Even though the use of territorial instruments in the field of agriculture and agro-industry may be more recent, it has been expanding considerably over the last few years.

Locationally focused private investment decisions are predominantly driven by three pull factors: access to markets, access to raw materials, and access to transportation (by water, rail and roads) and energy. The theoretical debates that have emerged since the 1990s have brought the importance of location and geography in economic development to the fore in the context of globalization. There have been, however, some fairly contrasting viewpoints in terms of what policies should be implemented to foster territorial and local development and promote economic integration, while closing the gap for lagging regions and communities.

TARGETED AUDIENCE

This strategy Sourcebook tries to be as practical as possible, focusing on providing policy-makers and practitioners with an easily referenced overview of key themes and cases that will facilitate their consideration of the tools to be adopted. Public sector planners, policy analysts and decision-makers will find guidance to help their deliberations, policy, planning and decision-making. Public agencies responsible for implementation will also find a rich source of ideas, experience and reference. Furthermore, subnational leadership may use the Sourcebook to inform initiatives for improving local economies.

Private investors will benefit from the principles and lessons described. Effective and sustainable linkages between investors, producers in the supply chains and government organizations are key elements of the discussions, and the Sourcebook seeks to present clear and balanced perspectives. Actors in the supply chain will recognize important principles regarding their role in the planning and ongoing management of agro-industrial initiatives.

Development practitioners and advisors will find the Sourcebook to be a rich resource of important principles and implementation guidance. It will also be a meaningful reference tool and guide for further research for business and agricultural universities and researchers.

THE FIVE INSTRUMENTS

Agrocorridors

Agrocorridors are part of the broad category of economic corridors. Economic corridor initiatives are development programmes that foster promising economic sectors in a territory by facilitating access to markets, inputs and services, and leveraging economies of scale along a physical backbone of transport infrastructure. People and economic activities tend to agglomerate along transport corridors, taking advantage of the reduced transport costs and travel time, specific geographic features and assets, and proximity to areas of agricultural production. Corridors can be characterized as transport corridors, economic corridors, trade corridors or sector-specific corridors (including agrocorridors), but are rarely (if ever) unique in

their impacts. The creation or improvement of connective infrastructure including roads, rail networks, canals, gateways such as ports and airports, power transmission and communications, is at the basis of any corridor initiative.

An agrocorridor programme or initiative fosters agriculture and value-added agribusiness and agro-industry – and possibly other promising economic sectors – in territories connected by transportation links such as roads, railways, waterways, ports or canals. Agrocorridors seek to enhance simultaneously the so-called "three Cs": connectivity, [agricultural] competitiveness and sense of community. Agrocorridors associate sector development strategies concerned with food, agriculture and agro-industry with broader infrastructure, logistics and trade facilitation plans. The recent upsurge in focus on agrocorridors results from several factors, including their potential for leveraging public-private partnerships (PPPs), and for promoting inclusive agribusiness and economic growth in low- and middle-income countries or regions of countries, and recent success stories.

The effectiveness of economic corridors depends also on "soft" (or non-infrastructure) components that complement and take forward infrastructural interventions, for instance by developing support institutions and building the capacities of key corridor stakeholders. Soft interventions include, among others, promotion and development of policies, regulations and legislative frameworks conducive to a competitive business environment; improvement and dissemination of business development services; trade facilitation; initiatives promoting regional integration; workforce and other human capital development initiatives; and organizational strengthening.

Many corridor initiatives are reporting positive results, while others are still in progress or even at the drawing board stage. However, some early results are notable, such as from the Maputo Development Corridor between Mozambique and South Africa and the Greater Mekong Subregion Programme in the Mekong region of Southeast Asia, a regional economic cooperation initiative that spans six countries and targets development along nine corridors. Other recent examples of economic corridor development have not yet shown significant results, such as the Southern Agricultural Growth Corridor of Tanzania (SAGCOT) initiative launched in 2010 in eastern Africa. This initiative seeks to attract investment in agribusiness and agro-industry in the southern part of the United Republic of Tanzania as a means of increasing productivity of the region's natural resources and reducing levels of poverty by incorporating smallholders in commercial value chains. However, the advent of private sector investment is taking longer than expected.

The lessons learned about agrocorridor development are quite clear but, as yet, there are few examples of agro-industry and agribusiness results. Innovation in transportation and logistics can be important for the success of economic corridors – not just the physical investment in infrastructure, but also innovation in transport equipment, service delivery and management. An effective agricultural corridor requires more than investment in basic transport infrastructure such as roads, railways or waterways. It requires investment in feeder roads, dams, irrigation, power facilities and logistics support, as well as in input infrastructure, distribution networks, service provision (transport, finance, technical advice) and attention to the post-production food chain (in some cases, the cold chain). It also requires attracting investment in downstream agro-industrial processing if it is

to be a mechanism for promoting value addition and industrialization. One such example of innovation is the development of multimodal transport for exports of fresh fruit from West Africa, combining trucking, rail and sea shipment to Europe of refrigerated containers from landlocked countries such as Mali and Burkina Faso, which resulted in a truly transformative impact in terms of trade routes, market access and industry development.

Agrobased clusters

An agrobased cluster is a geographic concentration of interconnected producers, agribusinesses and institutions that are engaged in the same or related agricultural or agro-industrial subsectors. It interconnects and builds value networks by addressing common challenges and pursuing common opportunities. A cluster encompasses, attracts and promotes horizontally and vertically connected companies and institutions of a particular field, along with their related government, academic and private sector stakeholders. The most distinctive aspect of a cluster is the concentration of economic activities around specific activities or products (vertical dimension) or closely related activities or products (horizontal dimension).

Cluster-based development entails a comprehensive approach to building sustainable and resilient agribusiness value chains that are backed by related and supportive industries. This can lead to more complex and robust sources of competitive advantage while capturing additional value far beyond the farmgate. Clusters emerge organically, making it hard to induce them. However, cluster development can be successfully facilitated. Private sector leadership is usually key to dynamic cluster initiatives, which can serve as an effective catalyst for private sector investment.

Agrobased clusters differ from other clusters because of their unique characteristics of perishability, coordination challenges and extreme political sensitivity and government invasiveness in many agricultural subsectors. Efforts to coordinate agrocluster development are complicated by overlapping jurisdictions and authorities. The role of local government authorities in the promotion of agroclusters is widely recognized, but line ministries also need to be on board. Coordination challenges related to systemic risks are frequent characteristics of agroclusters. Cluster initiatives work to close the gap between agriculture and agro-industry by addressing issues of both vertical and horizontal value chains and coordinating with public and private institutions, academic organizations and trade associations to strengthen the cluster coordination. Agroclusters encourage interfirm cooperation, facilitate the spread of organizational and technical innovation, and provide a mechanism for industry initiatives, which benefit the entire value chain.

Agrocluster initiatives utilize collective action to achieve performance objectives and resolve coordination failures. They can be driven and supported by various kinds of players, ranging from the private sector to national governments, local economic development authorities, and international donor agencies. These actors can be instrumental in helping to upgrade and consolidate an already existing cluster. They can also support the cluster's internationalization process. In every case, the success and sustainability of the cluster and cluster-focused initiatives depend upon the commitment of business leadership. Clusters require strong internal motivators or champions who are able to articulate the vision and objectives of the cluster clearly, and motivate other members to be enthusiastic about the vision.

While agrobased cluster initiatives are largely beneficial forms of economic development, there are significant challenges, which can be addressed by sound cluster arrangements and facilitation approaches. For example, scale requirements may put small-scale farmers at a growing disadvantage in some clusters. Organizational structures and linkages of firms and clusters in developing countries are often weak, making it difficult for cluster members to adapt to evolving consumer demands and to maintain pace with foreign competition. And clusters are only as good as their institutions: agroclusters are only successful insofar as the institutions that support them are strong, free from corruption and restrictive cultural norms, and capable of providing the financial and political support needed to foster cluster growth and development. An overly narrow focus on a restricted number of products can keep a cluster from diversifying, making it more vulnerable to changing market demands. Consequently, a focus on innovation and competitiveness is crucial, as is keeping abreast of medium- and long-term product and market trends.

Developing and implementing a successful agrocluster initiative means that stakeholders must first observe and map the existing cluster network. At an early stage, they should also convene the cluster leadership and establish the right psychological contract. Participants may include input suppliers, producers, traders, processors, exporters and those involved in research, extension, logistics and finance. In follow-up meetings, industry leaders apply a series of diagnostic tools, often aided by local or international experts.

These diagnostic tools lead to a strategy resting on a foundation of data and analysis. This strategy in turn leads immediately to the identification of strategic initiatives designed to reposition in the industry in global markets, improve productivity, enhance efficiency or introduce innovations. Strategic initiatives may include, as examples, market linkage initiatives, product and service innovation, infrastructure, upgrading in product quality, workforce development, adoption or enforcement of new quality standards, improvements in packaging and lower supply chain costs. It is important that clusters ground their strategies in commercial market realities and identify economically sustainable ways of generating value in these markets. Once such opportunities have been identified, the policy reforms needed to facilitate competitiveness become much clearer. Good strategy reveals the desirable prioritization and sequencing of policy initiatives of investment in social goods.

Cluster initiatives have been successfully implemented in many countries and sectors. The most successful examples tend to focus on high-value and export-oriented production. Frequently cited clusters that serve as model agricultural or agro-industrial clusters include the horticulture clusters in the Netherlands and in other countries such as Kenya which, although applying to a diverse set of fruit and/or vegetables, involve the use of similar supporting infrastructure, cold chains, input providers and transporters. Another example is that of the salmon cluster in Chile.

Agro-industrial parks

An agro-industrial park is a centrally managed, physical platform that offers high-quality infrastructure, logistics and specialized facilities and services to a community of tenants, formed by agro-industries, related agribusiness firms, service providers and research and knowledge institutions. The industrial park model has been widely

applied across the globe, most notably targeting the textile, apparel, footwear, consumer electronics and motor industries.

Agro-industrial parks align connective and specialized infrastructure with agglomeration economies derived from the co-location of agribusinesses and agro-industries. They are often called "agropoles", in lieu of agroparks, in francophone literature. There are significant differences between an agrobased cluster and an agropark. An agropark requires the existence of a shared infrastructure platform that is centrally managed, whereas a cluster is defined by the business linkages among co-located agro-industries; cluster agents only occasionally share infrastructure and facilities (such as airport cold chain facilities). While clusters tend to be described in terms of focus products (one product, or a close-knit group of commodities such as in horticulture or biotechnology clusters), parks tend to be planned by nature for multiproducts.

An agro-industrial park is much more than its physical assets: it entails a functional community of manufacturing and service agribusinesses located together on a common property, centrally managed by a dedicated entity (public, private or public-private), which usually also owns the land where the park is located. Agro-industrial parks increase the efficiency and value-capturing capacity of the firms located in them, while reducing their transaction costs. They combine the pursuit of value addition and industrial efficiency with principles of industrial ecology and innovation.

Agroparks are physically limited to a well-defined area. The dimensions of agro-industrial parks vary greatly, from a few up to several hundred hectares. The majority of agro-industrial parks are sponsored by, and are physically linked to, towns of various sizes. Agro-industrial parks try to locate in areas that maximize logistical gains. In practice, the decision of where to locate an agro-industrial park can be substantially influenced by firms already located in an area and that play a key role in the creation of the park, or by universities and research centres that lead the establishment of agrotechnoparks (or agrotechnopoles in francophone countries).

The use of industrial parks as a tool to build agricultural value addition and competitiveness is quite recent in both industrialized and emerging economies. Well-known examples are established in China, India, Denmark (Agro Food Park in Århus set up in 2009) and the Netherlands (Greenport Venlo initiated in 2005 and still under development).

Agro-industrial parks may follow various models. They can vary according to their industrial activity, use of space and development objectives. Some parks are managed by the public sector and others by private actors or via PPPs. Agroparks can be operated as a single, managed entity or as a system with components operated using a diversity of management options, purely private, purely public or PPP. In all cases, sound park management requires successfully implementing a business strategy that focuses on overall competitiveness and profitability.

Industrial parks are controversial globally, also in developing countries. As with many good conceptual models, the reality of implementation can fall short of expectations. Some parks have failed to reap the promised benefits of greater competitiveness through increased added value, and innovation and technology upgrades.

Policy-makers should consider using agroparks as a tool for agribusiness development when their main goal is to add value through processing, and across a number of competitive agricultural and food chains present in a territory that is identified by urban areas and their economic hinterlands. The choice of location for the agropark is a key

strategic decision, as is the agropark design and its ability to sustain an integrated, multistakeholder and multilevel approach over the long term.

Agrobased special economic zones

An agrobased special economic zone is simply an SEZ with an agribusiness focus, which in turn implies some special qualities. SEZs vary considerably in terms of institutional approaches and operational models.

SEZs are policy instruments that aim to attract investment (particularly foreign direct investment [FDI]), create jobs, increase exports, generate hard currency, diversify the economy and serve as vehicles for technology upgrading. They involve fairly complex policy instruments that encompass a wide diversity of institutional approaches, incentive structures and operational models. SEZs are not mutually exclusive to industrial parks, since they are simply a legislative tool that affords certain privileges to those that obtain SEZ status. SEZs have traditionally been thought of as geographically designated, duty-free areas that focus on the industrial assembly of imported components for export. Characteristics that make SEZs unique compared with other development models are their export orientation and related regulatory framework that targets streamlined customs procedures and duty-free import of raw materials and export of finished products.

An agrobased SEZ is a demarcated geographic area in which firms that are engaged in agribusiness and agro-industrial activities benefit from a more favourable regulatory, business and fiscal environment than those in the rest of the country. Agrobased SEZs are a tool for agro-industrial development; the main benefits of applying a SEZ framework to achieve agro-industrial growth goals are largely the same as they would be to achieve other industrial growth goals. That is, SEZs embody streamlined regulatory environments that are simpler and quicker than provided elsewhere in the economy, duty-free imports and/or exports, secure land tenure, dedicated infrastructure, access to specialized services and the potential for clustering effects. The significant variability in SEZ frameworks implies that they are not all appropriate for agro-industrial development. Agro-industry requires strong supply chain linkages with proximate location to raw materials that are seasonal, perishable and variable.

Though a widely popular industrial development tool, SEZs have only achieved partial success. Countries sometimes try to rely on them to circumnavigate poor enabling environments. Yet, although SEZs can be used as a catalyst for country-wide policy reform and targeted agro-industrial growth, depending solely on SEZs to generate economic growth without addressing other constraints will inevitably yield disappointing results. On the positive side is the catalytic effect of SEZs in stimulating more dynamic measures of success such as broader business environment reform, diversification, the degree of technology and human capital upgrading, and integration with the domestic economy. China's use of SEZs to pilot the effects of economic liberalization has been central to its remarkable economic success.

SEZs have policy, institutional and physical dimensions. Establishing a regulatory framework is the first step in the SEZ development process. The delineation of a geographic area serves as the basis for applying the policy, institutional and infrastructure components. Unique to agro-industrial activities, agrofocused SEZs require additional considerations with respect to policy and physical factors, as well

as access to strong supply chains. Institutional arrangements for SEZ creation and management are critical success factors. Three elements that have great influence in institutional effectiveness are: (i) establishing clear and balanced institutional structures from the outset, which empower the zone authority with sufficient autonomy and authority; (ii) effective zone management that adopts a customer and results orientation; and (iii) ensuring that financial planning and financing are undertaken in partnership with the private sector.

Two case studies highlight agrospecific considerations for SEZ development. The coffee case study in the Philippines is an example of how the well-established SEZ framework in the country has been expanded to target agro-industrial growth. The second case study discusses how the SEZ model has been applied and implemented in Africa and highlights driving factors behind successes and failures, with a particular focus on agro-industry.

Agribusiness incubators

An agribusiness incubator is an enterprise development hub that provides a common environment – often physical, but in some cases virtual – to nascent agrobased companies, where they have access to shared infrastructure, and networking, mentoring and coaching, business and financial services. The objective of agribusiness incubators and accelerators, is to help entrepreneurs create and expand their businesses by enabling the successful startup and growth of agribusiness companies, i.e. to increase the chances of success.

These incubators are a mechanism for accelerating the growth of startup and small-scale agro-enterprises that bring innovative technologies and business models to the market. Effective incubators place a performance discipline and expectation on participating startups. The adoption of agribusiness incubators in developing countries is still limited compared with industrialized economies and experiences in other sectors, but there is interest in mainstreaming the use of this tool to foster entrepreneurship and innovation in the agriculture sector.

Business incubators can be multisectoral or target a specific industry or sector, such as agribusiness. Agribusiness incubators or agro-incubators specifically nurture newly born agrobased enterprises with high growth and competitive potential. They can be established as a stand-alone undertaking or can be part of a broader initiative or programme that supports the creation and strengthening of a network of incubators. Incubators are also common as elements of agropark, SEZ and cluster initiatives.

Agribusiness incubators are an effective part of an innovation ecosystem for agricultural development, i.e. a community of partners or organizations with complementary resources that shares the functional goal of enabling agricultural innovation and technology development and/or transfer. Incubators contribute to the entrepreneurial ecosystem. They are part of the "support system", which includes not only incubators but also other mechanisms for providing mentorship, advisory and professional services, and building networks of entrepreneurial peers. The objective of the incubation process is to assist the entrepreneur to establish a sound, market-focused business.

Agribusiness incubators may differ widely from one another. These differences can relate to their mission and sectoral focus, the business model used and services

delivered. They can also vary according to the financing path, timeline, ownership, sponsorship and institutional affiliation, among other factors. Incubators can be classified according to criteria such as: (i) sector orientation; (ii) thematic thrust (value chain/subsector-focused incubators versus technology-oriented incubators); and (iii) duration of participation (business incubators versus business accelerators). Examples of innovation in technology-based, university-led agribusiness incubators include experiences from Brazil, Indonesia, Mexico and Uganda. Fundación Jalisco is a non-residential, franchise incubator for value chain development in Mexico. Flat6Labs is a business accelerator programme in the Middle East and North Africa region.

Incubators locate mostly in urban areas. Those targeting the agribusiness sector also tend to locate in peri-urban and urban areas. Agribusiness incubators thrive in places where there is an active, broad territorial partnership for agricultural and entrepreneurial growth, and thus they are often desirable components of clusters, agroparks and SEZs. The assets and services offered depend on the typology of clients targeted and on the mission of the incubator. Some agro-incubators focus on the provision of facilities and co-working space. The most common business model for incubators is focused on revenue generation, with the main sources of revenue including rentals on infrastructure and facilities and fees from various business development and consulting services. Agribusiness incubators can be established as a public body, mostly depending on governmental and donor funds, or as a private body. Incubators that are integrated in science parks are particularly common in Brazil, China and India. In Brazil, the Viçosa Technological Park and CENTEV/UFV have a strong interaction.

To live up to their full economic potential, agribusiness incubators need to satisfy a series of challenges pertaining to their design, business model, financing and relational issues. Agro-incubators should be primarily expected to provide soft support elements, rather than physical facilities or financial support. The founders and operators of agribusiness incubators need to have a business mindset and leadership qualities, and be dedicated to incubation activities full time.

Successful agribusiness incubators connect incubated firms to people who can help them grow their business: networking is therefore essential. The success factors of agribusiness incubators are a combination of lean operations, focusing incubates on market success, building strong linkages with the entrepreneurial ecosystem, discipline and performance targets (through "tough love" that pushes client firms to boost their business performance). Finally, one should be aware of the key issue of sustainability by bearing in mind that supporting startups remains a risky business.

CROSS-CUTTING ISSUES

How to attract private investment, which governance structures should be adopted, and what should be the role of the public and private sectors in establishing and managing the initiative and facilities are some of the cross-cutting issues that are common to all instruments of territorially based agro-industrial development.

Corridors, clusters, agroparks, SEZs and incubators are, in the context of an agro-industrial strategy, tools for promoting agro-industrial investment within agrosystems. Each tool places a different emphasis on the scope, scale and type of investments that it is attempting to attract. Consequently, implementation, and operational and promotional strategies are differentiated. For ease of reference, see

the Table, which summarizes the main characteristics of the various territorial development instruments that have been reviewed. The scale of investment varies from a few million dollars for incubators to billions of dollars for agrocorridors. Investment promotion takes place at two levels – in attracting investors in the instrument's actual facilities, and in attracting tenants or resident investors.

As part of their overall investment promotion strategies, countries generally establish an investment promotion body, either a Board of Investment or an investment promotion agency or authority. Promotion agencies may also exist at a subnational (state or urban) level. In promoting these territorially based instruments, sponsors and managers must collaborate closely with investment promotion bodies, defining joint strategies and clearly assigned responsibilities.

Some core principles for successful investment promotion are:

i. private sector involvement;
ii. national/local commitment to FDI and domestic investment, with a corresponding reflection in public sector funding;
iii. successful strategy promoting investments in agrobased spatial development initiatives, including regular strategic studies, policy advocacy and benchmarking;
iv. accountability, transparency and autonomy;
v. social and environmental sustainability.

One major lesson drawn from experience is that, to be successful, efforts to attract investment in agro-industrial and agribusiness initiatives should include a nuanced knowledge and understanding of national or global market demand trends and the motivations of global and domestic agribusiness companies subject to industry-

Prominent features of agro-industry investment promotion tools

	Overall purpose	Geographic scope	How tools attract investment
Agrocorridor	Integrated planning of infrastructure and agribusiness interventions	Regional, national or supranational (might encompass smaller spatial development initiatives [SDIs]); linear agglomeration spanning across hundreds or thousands of km	Coupling infrastructure investments with trade and regulatory policy reforms and sectoral development plans
Agrobased cluster	Network linkages	Regional or provincial agglomeration (revolving around production area); from hundreds to thousands of ha	Benefits of agglomeration economies and promotion of collective action
Agro-industrial park	Value addition by processing and innovation	Urban (accessible distance from production area); a few ha	Common infrastructure, logistics facilities and dedicated services
SEZ	Export and FDI promotion	Urban (possibly near to port area if it is an export promotion zone); a few ha	Advantageous economic and regulatory frameworks
Agro-incubators	Entrepreneurship development	Urban; a few hundred square metres	Common infrastructure (but not always), and dedicated services to create and coach new agribusiness firms

Source: authors' elaboration.

specific competitive pressures. Promotional messages should not solely be about the supply-side offer. Promoters should be aware that foreign investment in agricultural lands may be controversial; in order to avoid instigating local political and social counter-reactions, they should adhere to the widely accepted rules of responsible agro-investment (RAI).

There are important governance issues associated with implementation of the instruments. Sound policy on national institutional governance generally comprises four pillars – accountability, participation, predictability and transparency. When it is the governing authority, the public sector faces particular challenges to ensure that ownership and management mechanisms adhere to these four pillars and to the legal framework, and are not hidden from public scrutiny or meddled in by political interests. The same applies in the case of a PPP but with the additional requirement that the engagements, rights and recourses for each party are made clear. Private ownership and management are perhaps formally more straightforward, since the requirement is to operate within a legal and regulatory framework. Principles and lessons for good governance are generally clear, and a challenge will always be to balance these against the choices relating to ownership and management that reflect the country's institutional realities. Altogether, choices must be made to put in place the practical requirements for achieving objectives and results.

The *public sector* has a role in most initiatives, although its role tends logically to be more significant in initiatives that involve or impact large territories and populations. At one extreme of the continuum that depicts the degree of localization of developments, corridors would typically cover the most expansive geographic area. Incubators, on the other hand, are found in specific locations. Generally, the more localized the initiative, the more the private sector can effectively play the sponsoring and governance role and, conversely, initiatives that cover large geographies and possibly political demarcations, or large and diverse populations, will typically require or attract more substantial public sector involvement.

The public sector also tends to play a more significant role in the earlier planning and development stages of an initiative. There is fairly uniform agreement that public sectors need to provide a consistent facilitating support to territorial initiatives, and over extended periods of time. The roles and expectations of government and the public sector with respect to agro-industry and territorial development have also evolved. In recent decades, the role of the public sector has changed from that of a provider/initiator to that of an enabler/facilitator. Policy instruments must accompany the development of most tools. The policy action may be highly complex, or as simple as a budget allocation, especially when it is a private initiative that includes a public-private element.

Successful territorially based approaches to development and investment attraction must be implemented in a context in which *appropriate macroeconomic and other national policies are in place*, or at least where such policies do not overly constrain either regional development actors or investment promotion officers. For example, national policies related to land tenure, infrastructure and central versus regional governance may all have an impact on both regional development and investment attraction. Ensuring a sound enabling environment, including legislation, regulation, procedures and services, is also key to the success of the five instruments.

Governance structures can take the form of PPPs. The starting-point of a PPP is to engage in a public-private dialogue that should be a two-way process, jointly owned by both the public and private interests. PPPs can be viewed as a mechanism to move ahead quickly to achieve development goals and perhaps minimize risks to both public and private partners. Some spatial development initiatives, particularly corridors, agro-industrial zones or agroparks, may benefit from the focused management capability and authority of a special agency.

Governance institutions and mechanisms can be put in place as part of the national strategic framework for territorial development. This has been the case of the national policy promoting food processing parks put in place by the Indian Government since the 1980s. Another example is that of the Kenyan policy framework for the agro-industrial sector, called Kenya Vision 2030, which aims at expanding regional markets for Kenyan products, and new agricultural products for niche markets. Vision 2030 foresees that consolidation and new special zones and parks will target services better and encourage new and growing export-oriented agro-industrial enterprises. Vision 2030 also proposes the development of industrial clusters, among other actions.

CONCLUSIONS

The five instruments that are the focus of the Sourcebook were selected in large part because of their *potential for catalytic impact*. Every country and region, every urban agglomeration and every population aspires to increasing incomes, reducing business risks and boosting employment. The key to attaining these objectives is the promotion of economic sectors and industries with the potential to deliver sustainable growth. In developing countries, agriculture is often the sector that has comparative advantages. Measures can be taken to free agribusiness and agro-industry stakeholders to turn comparative into competitive advantages and enable them to grow in a productive and sustainable manner.

Each of the five instruments is designed to contribute to achieving the three overarching objectives of agroterritorial development:

- Promoting spatially bound agribusiness/agro-industrial investments.
- Building agribusiness and agro-industrial competitiveness.
- Enhancing food security.

The five instruments, and the investment that they generate, may contribute to the achievement of many other national and subnational objectives. They can support objectives such as creating jobs, accessing new technologies, improving skills levels, encouraging new business formation and decentralization.

Each instrument seeks to generate private business response. Instruments generate this response by providing business with access to new sources of raw material, new markets, cost efficiencies and similar advantages. Promoters will be more successful in encouraging business investment to the extent that they lower the barriers and transaction costs involved in business operation and investment.

Promoters of territorial development approaches must thus recognize that the sustainability and success of each of the approaches mean that stakeholders have to respect core principles: (i) a business focus; (ii) shared benefits; (iii) effective implementation and management; and (iv) sound and effective governance.

While business objectives are relatively straightforward in terms of realizing strategies related to companies' business models, government objectives are complex. Governments must balance legitimate political interests; economic growth objectives (including concepts of regional equality); social partnership objectives; decentralization and regional development objectives; tradition; philosophical perspectives; and much more. The public sector serves different and more varied constituencies than business investors.

This book, while presenting important principles, good practice and lessons learned, is not prescriptive. Each commodity system has unique characteristics, and each country and region has its own history, topography, culture and economic philosophies, making it difficult to generalize or to be totally doctrinaire about the application of best practice. Consequently, effective planning and implementation of each of the five instruments require leaders to make sound choices that respect such principles and follow the best practices described in these chapters. Poor implementation is a waste.

In Chapter 9 there are *four checklists* to guide the steps and choices that need to be taken to plan and implement the investment promotion instruments. The checklists, pertaining to diagnostics, feasibility analysis, design and implementation, can be used by framers and implementers of the investment promotion initiatives to ensure that key steps are carried out, important information considered and appropriate choices made. Each checklist includes the main considerations and implementation steps: (1) Making the decision; (2) Feasibility considerations and key requirements; (3) Design considerations; and (4) Implementation considerations.

Abstract

Agro-industry has the potential to become an engine of economic growth in many developing countries. Efforts made to generate or attract investment in the sector need to consider that geography matters in realizing this objective. In other words, territorial specificities, local supply links, the existence of an enabling environment and a well-developed business community are all crucial factors that need attention when intending to attract investment. Territorial approaches to foster agro-industrial investment at local, country and regional levels are becoming increasingly relevant. Governments are acknowledging the extent to which place-specific factors (endowment of natural and other productive resources, and social, institutional and knowledge capital) influence agro-industrial development outcomes. As a consequence, a number of instruments to attract agro-industrial investments into specific locations are becoming mainstream, namely agrobased corridors, clusters and special economic zones, as well as agro-industrial parks and incubators.

These tools have the potential to enhance value addition, deliver jobs, increase exports and provide markets for new and existing producers in the targeted territories. However, confusion exists in the use of these terms since planners and practitioners sometimes utilize them interchangeably, thus ignoring the specificities of the investments, policies and processes required, and the expected outcomes delivered by each tool. Furthermore, their implementation poses a number of challenges that can, in extreme cases, lead to failure.

In order to understand better the potential benefits and challenges of these tools, this Sourcebook considers their nature and objectives, the approaches used to implement them and the practices that have led to both successful and unsuccessful outcomes. After extensive analysis and comparison of global experiences, the book concludes that these territorially based investment promotion tools have potential for catalytic impact, but planners need to make sound choices that respect demonstrated principles and follow good practices for effective design and implementation.

Acronyms

ACMECS	Ayeyawady-Chao Phraya-Mekong Economic Cooperation Strategy
ABI	Agribusiness incubator
ADB	Asian Development Bank
ADC	Agricultural development centre
ADFIK	Agency for Development of Food Processing Industries, India
AFMA	Agroforestry Management Agreement
AgCLIR	Agribusiness Commercial Legal and Institutional Reform
AMAS	Agribusiness and Marketing Assistance Service, the Philippines
APEDA	Agricultural and Processed Food Products Export Development Authority, India
ASCM	Agreement on Subsidies and Countervailing Measures (WTO)
ASEAN	Association of Southeast Asian Nations
B2B	Business-to-business
BAGC	Beira Agricultural Growth Corridor
BAGCI	BAGC Initiative
BAIC	Bahamas Agricultural and Industrial Corporation
BDS	Business development services
BEE	Business enabling environment
BIC	Business Innovation Centre
BOI	Board of Investment
BOO	Build-own-operate
BOT	Build-operate-transfer
CAREC	Central Asia Regional Economic Cooperation
CASP	Core Agriculture Support Program
CCLEAr	Creating Competitive Livestock Entrepreneurs in Agribusiness
CFS	Committee on World Food Security
CGIAR	Consultative Group on International Agricultural Research
CODEVASF	San Francisco River Valley Development Agency
COMESA	Common Market for Eastern and Southern Africa
CORFO	Production Development Corporation [*Corporación de Fomento de la Producción*], Chile
CSO	Civil society organization
CTF	Catalytic Trust Fund (of SAGCOT in the United Republic of Tanzania)
CURAD	Consortium for enhancing University Responsiveness to Agribusiness Development
DANIDA	Danish International Development Agency
DAR	Department of Agrarian Reform (the Philippines)
DENR	Department of Environment and Natural Resources (the Philippines)

DTI	Department of Trade and Industry
EBN	European Business and Innovation Centre Network
EIP	Eco-industrial park
EOU	Export oriented unit
EPZ	Export processing zone
EPZA	Export Processing Zones Authority (United Republic of Tanzania)
ERR	Economic rate of return
EU	European Union
FARA	Forum for Agricultural Research in Africa
FAS	Foreign Agricultural Service [of the United States of America]
FDI	Foreign direct investment
FICCI	Federation of Indian Chambers of Commerce and Industry
FTZ	Free trade zone
GAP	Good agricultural practices
GATS	General Agreement on Trade in Services (WTO)
GDP	Gross domestic product
GFZB	Ghana Free Zones Board
GI	Geographical indication
GIS	Geographic information system
GMS	Greater Mekong Subregion
HACCP	Hazard analysis and critical control point
HLURB	Housing and Land Use Regulatory Board (the Philippines)
HSIIDC	Haryana State Industrial & Infrastructure Development Corporation, India
IAA	Incubator for Agribusiness and Agroindustry
IAIP	Integrated agro-industrial park
ICAR	Indian Council of Agricultural Research
ICRISAT	International Crops Research Institute for the Semi-Arid Tropics
ICT	Information and communications technology
IDA	Industrial Development Agency
IDB	Inter-American Development Bank
IDZ	Industrial development zone
IFC	International Finance Corporation
IFI	International financial institution
IIRSA	Integration of Regional Infrastructure in South America
IPA	Investment promotion agency/authority
IPB	Bogor Agricultural University, Indonesia
IT	Information technology
ITSM	Incubator centre located on the Monterrey Tech campus
ITT	Innovation and technology transfer
KINFRA	Kerala Industrial Infrastructure Development Corporation, India
LDC	Least developed country
LGU	Local government unit (the Philippines)
LPDR	(Lao) People's Democratic Republic
M&E	Monitoring and evaluation
MDC	Maputo Development Corridor

MENA	Middle East and North Africa
MFPS	Mega Food Parks Scheme, India
MI	Market infrastructure
MITM	Ministry of Industry, Trade, and Marketing (United Republic of Tanzania)
MLSCF	Malaysian Life Sciences Capital Fund
MOFPI	Ministry of Food Processing Industries, India
MP3EI	Masterplan for Acceleration and Expansion of Indonesia's Economic Development
NARCO	National Ranching Company (United Republic of Tanzania)
NARO	National Agricultural Research Organisation
NBIA	National Business Incubation Association
NEDA	National Economic and Development Authority, the Philippines
NEPAD	New Partnership for Africa's Development
NGO	Non-governmental Organization
NMFP	National Mission on Food Processing, India
NSF	National Science Foundation
PADCC	Philippine Agricultural Development and Commercial Corporation
PDR	(Lao) People's Democratic Republic
PEZA	Philippine Economic Zone Authority
PIPP	Philippine Investment Promotion Plan
PISAgro	Partnership for Indonesia Sustainable Agriculture
PPD	Public-private dialogue
PPP	Public-private partnership
PRA	Poverty Reduction and Alleviation
R&D	Research and development
RMACC	Rocky Mountain Arabica Coffee Company
ROI	Return on investment
RTC	Rural transformation centre
SADC	Southern African Development Community
SAGCOT	Southern Agricultural Growth Corridor of Tanzania
SDI	Spatial development initiative
SEDA	Small Enterprise Development Agency (South African Department of Trade and Industry)
SEZ	Special economic zone
SMAE	Small and medium agro-enterprises
SME	Small and medium enterprise
SPV	Special Purpose Vehicle
SUDENE	Superintendency for the Development of the Northeast [*Superintendência de Desenvolvimento do Nordeste*], Portugal
SWOT	Strengths, weaknesses, opportunities and threats
TAP	Tanzania Agricultural Partnership
TCI	The Competitiveness Institute
TIC	Tanzania Investment Centre
UFV	Federal University of Viçosa (Brazil)
UIRI	Uganda Industrial Research Institute
UNASUR	Union of South American Nations

UNDP	United Nations Development Programme
UNECE	United Nations Economic Commission for Europe
UniBrain	Universities, Businesses and Research in Agricultural Innovation
UNIDO	United Nations Industrial Development Organization
USAID	United States Agency for International Development
USDA	United States Department of Agriculture
VAT	Value added tax
VCD	Value chain development
WCO	World Customs Organization
WEF	World Economic Forum
WTO	World Trade Organization

Chapter 1
Introduction

> *"The study of economic geography [...] plays at best a marginal role in economic theory [...] and yet it is one of the most striking features of real world economies."*
>
> Paul Krugman (2010)

1.1 ABOUT THE SOURCEBOOK

Background

In an industrialized, globalized and increasingly urbanized world, agribusiness and agrifood systems in general have been transforming rapidly. Once concerned primarily with growing, packaging and delivering products to markets, agro-industry has become a highly industrialized sector, with significant medium- and large-scale investment and worldwide networks and global supply chains that deliver substantially transformed agricultural products to businesses and consumers in both near and distant economies and markets.

The various stakeholders and actors in the agro-industrial sector share a variety of complementary objectives. Producers and their organizations seek larger markets and better market access, and often forward integration into value addition and supporting services. Agro-industrial businesses look for new and reliable sources of supply, and the comparative and competitive advantages that result from these sources. Individual entrepreneurs look for new business opportunities, in value addition, intermediation, service provision and scale. Governments seek new investments, increased exports, value addition, food security and job creation. Each of these actors and stakeholders is thus engaged in a highly competitive effort to generate or attract the investment that responds and builds upon productivity and locational advantage.

Geography matters in realizing these objectives. To be efficient, local supply links need to be strong, well interconnected and supported by an enabling environment and a synergistic approach facilitated by governments and the business community. Only then can local actors be well integrated into global supply chains and trigger further agribusiness investments and agro-industrial development in their territory. FAO (2014a) notes that "[...] the more globalization forces expose the agricultural sector to far-reaching changes, the more local solutions emerge to foster local competitiveness, and the more attention is being paid towards agro spatially bound initiatives. The last few years have seen a surge of interest in investing in large-scale agriculture by both countries and multinational firms; the former in support of their food security strategy and the latter motivated by potentially high returns on investment". Moreover, one needs to remember that, in spite of the rise of global chains, most agrifood production still remains locally produced and consumed (Cistulli *et al.*, 2013).

KEY DEFINITIONS

Agribusiness denotes the collective farm-to-table business activities that are performed by agricultural input suppliers, producers, agroprocessors, distributors, traders, exporters, retailers and consumers (FAO, 2013).

Agro-industry refers broadly to the establishment of enterprises and supply chains for developing, transforming and distributing specific inputs and products in the agricultural sector (*ibid*). A narrower definition portrays agro-industry as the sum of "[…] post-harvest activities involved in the transformation, preservation and preparation of agricultural products for intermediate or final consumption" (UNIDO, 2009, p. 58).

An **agricultural value** or **supply chain** is comprised of the full range of farms and firms and their successive coordinated value-adding activities that produce particular raw agricultural materials and transform them into particular agricultural and food products that are sold to consumers and disposed of after use (FAO, 2014b).

Territorial planning relates to the "[…] coordination or integration of the spatial dimension of sectoral policies through a territorially based strategy" (Cullingworth and Nadin, 2006, p. 91). It is seen as a largely public sector-driven function to influence the territorial distribution of economic and other activities; that is, to coordinate and improve the spatial impacts of other sectoral policies so as to achieve a more even or specifically targeted distribution of economic development within a given territory than would otherwise be created by market forces (Nadin and Stead, 2008). In this book, "territorial", "spatial" and "locational" are used interchangeably.

In this context, territorial approaches to foster agro-industrial investment at local, country and regional levels are becoming increasingly relevant. The growing geographic disparity and inequality in agribusiness development and agro-industrial investment, in part as a result of globalization forces, are putting territorial processes at centre stage. Governments are acknowledging the extent to which place-specific factors (e.g. endowment of natural and other productive resources, as well as social, institutional and knowledge capital) influence agro-industrial development outcomes. In addition, constraints on public budgets at the country level make it compulsory to allocate public resources carefully, ensure efficiency of public expenditure and realize synergies, all of which may call for geographically targeted investment. Moreover, there is ample evidence suggesting that sectorwide policies and programmes may be necessary but not sufficient to accelerate agro-industrial investment and that a territorial approach could provide a more incentivizing framework. Furthermore, ongoing trends and processes at the global level are driving the adoption of agroterritorial approaches, namely:

- decentralization policies that fit naturally with the territorial approach to agribusiness growth and investment promotion;
- technological innovations that result in increased availability of data, geographic information systems (GIS) and knowledge-based information for "levelling the

AGROTERRITORIAL INVESTMENT PROMOTION INSTRUMENTS

An **agrocorridor** initiative is an economic development programme that fosters agriculture – and possibly other promising economic sectors – in a territory connected by lines of transportation such as highways, railways, ports or canals. Agrocorridors seek to enhance simultaneously the so-called "three Cs": connectivity, (agricultural) competitiveness and sense of community.

An **agrobased cluster** is the geographic concentration of interconnected producers, agribusinesses and institutions that are engaged in the same agricultural or agro-industrial subsector, and interconnect and build value networks when addressing common challenges and pursuing common opportunities.

An **agro-industrial park** is a centrally managed platform that offers high-quality infrastructure, logistics and specialized facilities and services to a community of tenants, formed by agro-industries, related agribusiness firms, service providers and knowledge institutions.

An **agrobased special economic zone (SEZ)** is a demarcated geographic area where firms engaged in agribusiness and agro-industrial activities benefit from a more favourable regulatory, business and fiscal environment than those in the rest of the country.

An **agribusiness incubator** is an entrepreneurial development model that provides a common environment (more often physical, but in some cases virtual) to nascent agrobased companies, where they have access to shared infrastructure, and networking, coaching, business and financial services.

playing field" and providing objectively verifiable information and tools to frame negotiations among the range of stakeholders involved (Cistulli *et al*., 2013); and

- the widespread emergence of multi-actor governance systems that mobilize stakeholders through an effective cooperation model, in line with the governance structure of territories.

As a consequence, a number of instruments to attract agro-industrial investments into specific locations are becoming mainstream in order to enhance value addition, deliver jobs, increase exports and provide markets for new and existing producers. These tools – *agrocorridors, clusters, special economic zones* (SEZ), *agro-industrial parks* and *incubators* – are the topic of this Sourcebook. Definitions of these concepts are given in the accompanying text box for ease of reference, although they will be extensively discussed in individual chapters of this book.

All of these investment promotion instruments have strong territorial or spatial aspects, and important policy elements. While they deal with discrete investments in specific locations, they also need to manage vital linkages with producers that are geospatially located, and master geographic realities to deliver products downstream, to intermediate and final markets. Promotion of agro-industry is thus central to each tool.

This requires that we distinguish place-based agribusiness/agro-industry initiatives from place-based agricultural initiatives. The former relates to a value-added perspective, in which value is mostly generated off-farm, whereas the latter can refer to growth of agriculture in terms of intensification (e.g. increased yields and/or cultivated area) or diversification. The first type of initiative (from the perspective of value addition) is the focus of the present publication.

Purpose of the Sourcebook

The purpose of this book is to gather together and present practical and useful information on a set of agroterritorial planning and policy instruments, namely agrobased clusters, corridors, industrial parks, SEZs and incubators. The book considers the nature and objectives of each of these five tools, the approaches used to implement them and the practices that have led to both successful and unsuccessful outcomes.

Furthermore, the Sourcebook aims to clarify some of the confusion that prevails in the use of terms such as clusters, corridors and parks. Planners and practitioners sometimes utilize these terms interchangeably, thus ignoring the specificities of the investments, policies and processes required, and the expected outcomes each tool can deliver. This is why the book pays particular attention to clarifying when, where and under what circumstances certain agroterritorial instruments make more sense than others.

Further considerations are needed to frame the discussion better and understand the purpose of this book and what it is and is not about. Its focus is on agro-industry as opposed to primary production, intending to serve the objectives by a mix of investment promotion and improved competitiveness. Also, the book emphasizes the importance given to governance and the allocation of roles and mandates across the multilevel, multi-actor processes that characterize the design and implementation of the agroterritorial tools discussed. Finally, an analytical/critical spirit permeates the publication. The authors have tried to strike a fair balance between the positive and negative aspects, together with the benefits and pitfalls identified in the course of their reseach.

Framing the scope of the Sourcebook

The Sourcebook focuses on the value-added dimension of agriculture (related to agribusiness and agro-industry), not on primary production. The territorial or spatial aspect of the investment promotion tools discussed in the book is a common and recurrent theme. Place-based initiatives are, in principle and in their geographic definition, intimately related to spatial planning. Each of the investment promotion tools is shaped in response to its geographic objectives. Much has been learned about the use of these policy instruments in industries such as non-agricultural assembly, and the manufacturing and service sectors. The use of territorial planning instruments in the field of agriculture and agro-industry may have lagged, but their application in these sectors has been expanding in recent years. However, the lessons learned from other sectors cannot be simply extrapolated to agro-industry, given the complexity and multifaceted nature of agribusiness and agro-industry, as evidenced by their importance in terms of agricultural and rural development, food security, energy, industrial dimensions and socio-environmental issues. In turn,

the geographic and ecological characteristics of a site or region are quintessential to agricultural production as they determine to a large extent the agro-ecological aptitudes of the site or region, which is not necessarily the case for other types of economic activity.

The Sourcebook presents experiences and good practices specific to the agro-industrial subsector. A tool focused on agro-industrial investment is not the same as a tool focused on growth of agriculture in terms of area expansion or yield improvement (although such growth may be one of the promoters' objectives). There are many location-focused agricultural initiatives but they do not always relate to the value-added perspectives of agribusiness/agro-industry. Consequently, this book draws a distinction between agribusiness/agro-industry and agriculture, and provides examples of each.

The linkage between agricultural production and downstream processing is central to the investment promotion instruments described. The business rationale for all the instruments rests upon the availability of a reliable and valued supply chain. Part of the supply chain may sometimes originate outside the country, and hence imports can be vital, even for an export-oriented outcome. However, in most cases, a primary linkage will be fostered between farmers and downstream industrial investors in the country. The linkage has practical consequences for the design and management of the instrument, and supporting policies. Businesses, local and national governments, and upstream stakeholders must find ways to work together, and share objectives as well as rewards.

The concepts discussed in the Sourcebook are not new. Each tool has historical roots that stretch back into the past, whether recent or distant, global or country- or region-specific. Recent experience has generated a large and growing compendium of both successes and failures. However, as some of the instruments have been treated by many as fancy concepts that tend to come and go over time, little effort has been put into documenting and systematizing these experiences to learn from them. This is a shortcoming that the book seeks to address. It does so by encouraging critical thinking and employing evidence-based practice. In particular, critical thought and reasoned judgement are essential to informing policy-makers and practitioners, as well as enhancing their ability to discriminate good from bad practice and understanding the potential benefits and pitfalls of available approaches.

The reader will realize from the discussions in this book that a critical approach has been consistently adopted. The emphasis given to the identification of good practices is no obstacle to acknowledging some limitations of this work. The first limitation relates to recognizing that little information on impacts and on processes is readily available. Some instruments are fairly new, whereas others require long implementation periods, meaning that lessons have not yet been fully drawn. Agro-industrial incubators, for instance, are very recent. The world has more experience with SEZs and technoparks, but their focus on agro-industry is relatively recent, and data and empirical evidence are just starting to become available to guide future decisions. Clusters and corridors are long-established concepts, but they require long implementation periods, and it is only in recent decades that proponents have given emphasis to their potential agro-industrial nature. Therefore, research is only just beginning to provide evidence to guide good practice. As noted earlier, there has moreover been a certain faddishness regarding some of the tools – SEZs,

technoparks and clusters in particular. Consequently, planners and policy-makers need to keep in mind this limitation and the need for a long-term perspective when implementing these tools.

The Sourcebook hopes to help countries and investors to plan and implement territorial approaches successfully, and avoid pitfalls that have too often occurred in their realization. Weaknesses and failures have arisen from many factors: poor planning; inappropriate siting; poor design, targeting and implementation; weak enabling environments, poor governance; and lack of business focus.

But while stories of hurdles and failure are legion, there have also been many successes. Thus, the larger lesson drawn in this Sourcebook is that the effective choice and use of territorially based investment promotion tools are specific to location and situation, and that attention to demonstrated principles and good practice are vital to ensuring success.

This way of thinking is exemplified by a willingness to examine whether the apparent lack of success of certain agroterritorial initiatives is a result of problems intrinsic to the tool that we should be aware about, or of implementation failures caused by exogenous reasons. Should clusters, for example, be considered an invalid model of agro-industrial development because some well-established textile clusters in traditional manufacturing regions have lost out to competition from more powerful clusters in China and other emerging economies? Or can the decline of these clusters be attributed to the relative rigidity of the labour market, high tax burden, poor performance in innovation and other structural factors? Similarly, can agrocorridors be considered a tool to reorder land and water use, create connective and agribusiness infrastructure and offer development opportunities to small farmers and communities? Or should corridor programmes be rejected because of concerns voiced over their use as a means to serve corporate interests to obtain communal lands and other benefits from host governments in developing countries? And so on.

Target audience and sources of information

Planners, policy analysts and decision-makers in the *public sector*, particularly ministries and other institutions with a focus on agriculture and food industries, industrial development and investment promotion will find much in this Sourcebook to guide deliberation, policy, planning and decision-making. Public agencies responsible for implementation will also find it to be a rich source of ideas, experience and reference. Equally, *subnational leadership* will find it a comprehensive resource to inform initiatives to improve local economies, including important linkages with the national level, and with private investors.

Private investors will benefit from the principles and lessons described here. Effective and sustainable linkages between the investor, producers in the supply chains and government organizations are key elements of the discussions. The Sourcebook seeks to present clear and balanced perspectives, and *actors in the supply chain* will also recognize important principles regarding their role in the planning and ongoing management of agro-industrial initiatives.

Development practitioners and *advisors* will find the Sourcebook to be a rich resource of important principles and implementation guidance. *Business* and *agricultural universities* and *researchers* will find the publication to be a meaningful reference tool and guide for further research.

With this audience in mind, the style of the Sourcebook tries to be as practical as possible, focusing on providing policy-makers and practitioners with an easily referenced overview of key themes and cases that will facilitate their consideration of the tools to be used.

With regard to information sources, the book builds on previous work undertaken by FAO on innovative public and private sector approaches and tools for accelerating the development of agro-industries, and for promoting agribusiness investments. Some of these base documents and research include FAO publications (2010, 2011 and 2014a) on clusters, technopoles (agro-industrial parks focusing on technological innovation) and agrobased corridors.

Other chapters draw heavily from sources external to FAO, such as Akinci and Crittle (2008) for the chapter on SEZs and the World Bank (2011a) for the chapter on agribusiness incubators.

The authors have drawn from a whole universe of research, analysis and experience regarding territorial approaches to promoting agro-industrial investment generally, and the five focus tools in particular. The bibliographies list the written and Internet resources consulted. The chapters and especially the case presentations have been prepared on the basis of both written and original sources, personal experience and many discussions and interviews with proponents and other informed individuals.

1.2 CONCEPTS, APPROACHES AND ISSUES IN TERRITORIAL DEVELOPMENT

This section provides a brief overview of some of the more important concepts and theoretical foundations of territorially based approaches for economic and agro-industrial development. More concretely, it explores the body of literature related to:

- the uneven spatial distribution and determinants of economic development;
- an historical recap on the use of territorially based approaches to broad economic and sectoral development;
- the rural-urban divide and its implications in terms of territorial development models; and
- the main factors that drive investment in agriculture and agro-industry into a given location.

Key concepts and scope

Economic development is generally uneven across territories at all levels, locally, regionally and globally. As economies grow from low to high income, production becomes increasingly concentrated spatially. Some geographies – cities, coastal areas and connected countries – are favoured by producers and traders. This unevenness creates disparities in economic density, incomes and living standards (World Bank, 2009). A clear expression of this unevenness is the wealth divide between industrialized and developing countries, as well as the disparities between regions of the same country.

What factors determine this uneven distribution? From a historical and global perspective, the main drivers can be grouped into four categories: (i) natural resource endowment; (ii) population and demography; (iii) transportation means; and (iv) policies.

As to how these factors interact to determine outcomes, one theory explains the imbalanced spatial distribution of economic activities (including agribusiness/agro-industry) by considering that it is the outcome of "first and second nature" forces, which sometimes collaborate, sometimes compete to find balance in a given territory (Ottaviano and Thisse, 2004). Agribusiness is unevenly distributed because of the varying endowments of agricultural resources such as fertile agricultural land and water ("first nature forces"). On top of that, there are economic forces ("second nature forces") that determine why some agricultural and agribusiness activities flourish in a specific space and not in others, irrespective of their natural assets. In other words, this analysis puts forward the hierarchy of factors that shape the final outcome in terms of localization of economic activity, starting with natural resource endowment, then demography, then physical geography and human activity leading to innovations in transportation, for example, and finally collective action and policies.

In terms of economic dynamics, the determinants of territorial development can be considered as the result of the interplay of three market forces: agglomeration economies, trade and specialization, and migration (World Bank, 2009):

- *Agglomeration* is the force that induces firms to gravitate towards each other to form groups or clusters. When locating near each other, firms obtain agglomeration economies or external economies deriving from collocation that benefit participating firms by reducing their costs and by fostering innovation.
- *Trade and specialization* forces push people, regions and countries to specialize in producing certain goods and services in which they have an advantage. Greater specialization will allow them to take full advantage of economies of scale. Scale economies generate an uneven pattern of trade of both intermediate and final outputs, and market dominance, ultimately creating an irregular mosaic-like pattern of development across territories.
- The third force is *migration* or, more generally, *factor mobility*. Human capital moves, driven by economic opportunities and desire for advancement, towards abundance, not scarcity. This movement happens on three geographic scales: the urban-rural scale, between lagging and leading regions within a country, and between countries.

The underlying question in the territorial development debate is whether these three forces should be influenced to stimulate the concentration and foster the competitiveness of economic activities in certain locations, and how this can be achieved in an effective manner. Specifically, should governments influence the location decision of firms and workers through proactive public strategies and, if so, how? What are the pros and cons of various territorial development approaches and what are the trade-offs involved for policy-makers? In a globalized world, location remains important at all stages of development, especially for firms, because the "what" and "how" of economic production are inextricably linked to location decisions (i.e. "where" to produce). This issue is particularly critical when it comes to agribusiness activity.

The scope of territorial development can thus be delimited in terms of the policies concerned and the geographic dimension involved.

Relevant policies. Territorial planning is concerned both with policies that are intrinsically spatial by nature (e.g. those dealing with transport and the environment) and sectoral policies that can be targeted in practice to specific territories (e.g. agriculture, tourism and industrial policies). Both types of policy will have locational impacts regardless of whether they are deliberately designed to influence land-use decisions, are part of territorial development plans or are implemented by local authorities as part of their spatial planning responsibilities (Williams, 1996).

Geographic dimension. "Territory" here is not understood to be an administrative unit, but rather a "functional" space defined as a "dynamic socio-economic system consisting of a set of actors, institutions (rules of the game) and resources of material and immaterial nature" (Cistulli *et al*., 2013, p. 7). In many cases, but not always, both functional and administrative dimensions overlap. Over the years, the different territorial development models that have predominated in the literature and in practice have zeroed in on different functional spaces. Some models have focused on urban rather than rural settings, whereas others have been more concerned with rural-urban linkages, as will be discussed in the next section. Territorial development approaches have also shifted in focus from one scale of economic organization to another, from a macro/national level to a meso/regional one, and finally to a micro/local one. From an initial focus on national policies, the territorial development debate has undergone a "regionalization" process, putting regions (both at the supra- and subnational geopolitical levels), districts and local communities at the fore of the policy agenda. An interest in smaller-scale units such as secondary cities has also been apparent over the past decade or so, in relation to the ongoing process of urbanization. An example of the choice of city as the unit of analysis refers to the adoption of agroterritorial measures to address the challenge of supplying food to urban consumers. Finally, interest has surged in recent years for territorial development with the focus on agro-ecological zoning and landscape approaches for sustainable development.

This discussion shows the comprehensive relevance of territorial development for a wide range of development issues and policies. From a developmental standpoint, territorial planning is an approach that can help to address broad issues such as globalization, climate change, environmental and social sustainability, regional disparities and demographic change by generating more efficient, inclusive and sustainable models of development. This entails the promotion of more balanced urban-rural policies, harmonization and coordination of policies, encouragement of multistakeholder involvement, provision of public infrastructure, and improvement of ancillary services. Finally, territorial planning can perform a regulatory function as the public sector – national or local government – can grant or deny approval to place-based plans or activities.

Governance and public-private collaboration. The Sourcebook puts forward for discussion relatively little-examined issues in the context of territorial development policies, such as governance and the importance of public-private dialogue and partnerships. Governance in this context refers to the set of laws, regulations and administrative practices that facilitate or inhibit the provision of public goods

and services (OECD, 2012) pertaining to agribusiness investment and agro-industrial development. Sound public governance implies having in place enabling institutional and regulatory processes that will make agroterritorial initiatives more likely to succeed. It also involves complying with good governance principles related to inclusiveness, transparency, leadership and engagement of a variety of stakeholders.

Governance principles require clarification of the roles of public and private organizations working in the design and implementation of agroterritorial plans. The governance of these processes and planning instruments entails a complex and delicate equilibrium among a multitude of government entities, private actors, the international community and representatives of civil society. Within the government, the various responsible entities – such as the institutions responsible for agriculture and industry and investment, as well as local development agencies – must find ways to work together and reconcile interests and policies that do not necessarily fit seamlessly together. If the goal of these instruments is to attract both public and private investments into functional territories, it is clear that public-private partnerships (PPPs) will remain an important vehicle for financing, governance and implementing agroterritorial projects.

People and communities are involved in and affected by these initiatives, and their support and willing collaboration cannot be taken for granted. They will often have concerns about prices, exclusionary land use and economic impact at the household or community level. They will be concerned about risks, about changes in their traditional lifestyles or cultures and in their farming practices. Consequently, planners, implementers and operators of these agro-industrial investment policies must effectively involve the whole range of stakeholders and take their interests into account.

Brief history of territorially based approaches to economic development

While territorial, spatial and regional approaches to economic development have existed for centuries in practice, the focus on territorially based economics began in 1776 with the publication of Adam Smith's *The Wealth of Nations*. Smith can be credited with the first analysis of the benefits from agglomeration. Building on Smith's work, Johann Heinrich von Thünen pioneered the early analysis of location theory through his model on agricultural location detailed in *The Isolated State* (1826). The Thünen model suggests that proximity and accessibility to a market drive agricultural land use, with all practices related to land use radiating out from the central market node, which was presumed to be located in an "isolated state" of the self-sufficient community common at his time. Several rings of land use exist in von Thünen's theory, where the agricultural ring closest to the market is most profitable and most perishable, and subsequent rings decrease in profitability but increase in ease of transport. His theory was expanded on by Alfred Marshall's observation of economic clustering. While the assumptions of von Thünen's model are no longer relevant, given the increase of market interdependence and ease of transporting agricultural products, his land-use theory still influences economic considerations in land-use decision-making today, where transportation costs play a key role in both agricultural and urban land use (Crosier, 2011).

Alfred Marshall relaunched the territorial debate at the beginning of the twentieth century when he observed that economic clusters appeared in regionally specific areas (Marshall, 1919, 1920). He discussed why firms tended to locate in regionally proximate environments, noting that their investment decisions were driven by the existence of knowledge spillovers, linkages between input suppliers and final producers, and labour market interactions (the so-called microfoundations of agglomeration economies). In 1909, Alfred Weber had further developed the theory of the location of industries in a way that took into account the costs of transportation, labour and real estate. He noted in this theory that products that gained in weight tended to be located nearer consumers, whereas products that lost weight from origin to market tended to be located nearer the raw material source. He also analysed the forces leading to the agglomeration of industries.

In the 1930s, British economist J.M. Keynes spearheaded a revolution in economic thinking by turning to macroeconomics and national fiscal and monetary policy. He advocated for state intervention to smooth the "boom and bust" cycles of economic activities (Keynes, 1936). Keynes was critical of the austerity measures of his government during the Great Depression, and encouraged the United States of America to fight unemployment by increasing public investment in regional development projects, such as President Roosevelt's Tennessee Valley Authority (Keynes, 1933). Because the main focus of policy-makers at the time was on finding instruments to achieve full employment with acceptable inflation, regional and territorial drivers of investment and economic growth were not much emphasized. Nonetheless, fiscal policy would have a major bearing on regional economics as taxes shifted from the customs house, where agro-exports were often taxed, to the incomes and consumption taxes of today.

The 1980s witnessed a shift towards private sector development, economic zones and investment promotion. The emphasis during this decade on structural adjustment and private sector development, privatization, trade and investment did not seem to favour a territorial approach to development, although it did have implications for privatizing agricultural input industries, freeing up markets for farmers and using PPPs to invest in infrastructure. The movement away from state banks, state-owned enterprises and state marketing boards involved wrenching transitions in some regions, but freed up capital and promoted dynamism in others. The most notable change in rural areas was seen in China, where productivity growth among farmers was impressive. Moreover, the 1980s and 1990s saw an upsurge of interest in investment promotion, and especially attraction of foreign direct investment (FDI) to free trade zones and export processing zones, which were truly territorial approaches to development. Notable examples were the Economic Zones of China, the Free Trade Zones of Latin America and Ireland's Shannon Free Zone (World Bank, 2011b; SELA, 2012; Potter, 2002).

The 1990s saw a renewed interest in fostering regionally specific cluster development and competitiveness. Despite the growing tendency towards globalization of supply chains, "clusters" of firms emerged in very specific regional areas where proximity encouraged continual improvement in productivity and innovation. Porter (1990) analysed many of these competitive and localized industry clusters and distilled four major drivers: (i) demand conditions (i.e. sophisticated and demanding send signals to the industry cluster to improve quality, boost productivity and

innovate); (ii) supply conditions (i.e. the ability to move beyond natural resource abundance, low cost labour and locational advantage to add highly trained labour, efficient logistics and infrastructural advantages); (iii) industry structure (e.g. lack of monopolies, oligopolies and protected state enterprises so that competition would drive improved business strategies, create relentless pressure to improve productivity and spur innovation); and (iv) related and supporting institutions, especially institutions for coordination and collaboration to enable the industry to be more competitive than industries in other regions or countries. Government policy is not a separate feature of this diamond, but it is analysed as it affects all four drivers.

The early 2000s were characterized by a renewed emphasis on the rural economy, as well as on regional development, decentralization, regionally specific value chains and territorial approaches. The Millennium Development Goals (MDGs) and Feed the Future (FTF) initiatives gave emphasis to rural regions as the focus of economic development, sustained by concern for climate change and environmental protection of rain forests and watershed management, the latter being typically a region-based and land-based concern. Value chains, and their local and regional interactions, have been a prominent feature of agribusiness and FTF initiatives. As a result, over the past 15 years, regional and territorially based approaches have become more important on development agendas.

In sum, the theoretical debates that have emerged from the 1990s to the present have brought to the fore the importance of location and geography in economic development in the context of globalization, with sometimes quite contrasting viewpoints in terms of what policies should be implemented to foster territorial and local development and promote economic integration, while closing the gap for lagging regions and communities. For example, there is the question of how to reconcile the promotion of agriculture for development as recommended by the *World Development Report* (WDR) *2008* with the trade facilitation policies advocated by WDR 2009 that should only aim at reducing distance, increasing density and removing divisions/obstacles to the flow of goods, labour and services. This Sourcebook describes and analyses development solutions that actually try to combine the two objectives of attracting private investment to corridors, clusters and agro-industrial parks where specialization in industries and sectors corresponds to the existence of competitive advantages and is thus likely to contribute to accelerating growth and creating value; while at the same time promoting agroterritorial initiatives that seek to rally investments to areas with strong agro-ecological potential and connect lagging regions and populations to provide them with income and employment opportunities, all contributing to economic, social and environmental sustainability.

Objectives of territorial development policies and programmes

This Sourcebook highlights the significant potential contribution of agroterritorial development policies and programmes in reaching the following three major objectives.

Promoting spatially defined agribusiness/agro-industrial investments. Sustainable economic development requires productive investment, which should be largely driven by comparative advantages such as agricultural production, agricultural productivity and geography. Accordingly, countries and regions may decide to launch

public investment programmes in agro-industry to seize opportunities to accelerate growth and speed up structural changes in the economy. In doing this, they can improve the economic situation of rural and urban households (Kormawa, Wohlmuth and Devlin, 2012), link producers to broader and more distant processors and markets, provide off-farm employment opportunities, encourage greater economic scale and investment in supporting services and, in general, enable the value chain to add more value and be more productive. Such public investments are the means for generating added value, creating momentum and triggering a process of change in the agro-industrial sector.

Since government investment is unlikely to suffice, complementary initiatives that encourage private investment and innovation in agro-industry, and thus enable stakeholders to adapt and compete in a global, technology-driven and value-based economy, are needed. Effective investment promotion accelerates agribusiness investments and addresses market failures by implementing reforms and putting in place incentives that will make selected locations more attractive to investors.

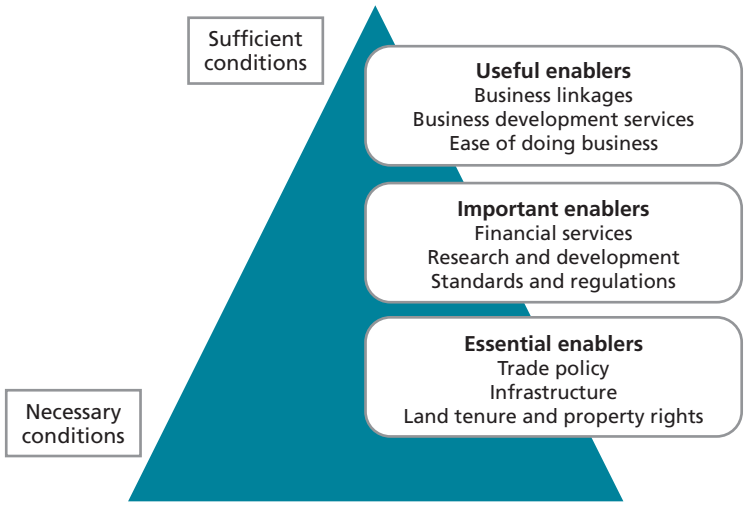
Market-based investment is a private sector activity, and investment will not take place unless business is allowed sufficient freedom to make market-based decisions that promote its profit objectives. Public sector (and indeed, domestic private) promoters of these investment promotion tools must therefore find ways to work with market forces, and sustainably reduce investors' entry and operating costs and risks. Proponents must also recognize the dual nature of investment promotion. Each of the investment tools requires initial investment in the platform facilities and enabling infrastructure, as well as supporting skills. Such investments may be closely managed by the public sector, or largely devolved to the private sector. Once the platform is in place, investment promotion efforts then concentrate on attracting the domestic and foreign investment that will populate and make use of the facility.

Building agribusiness and agro-industrial competitiveness. These investment promotion instruments influence the competitiveness of the agribusinesses and agro-industries present in the targeted places. They aim at triggering non-incremental improvements in the different factors underlying competitive advantage, namely: increased availability of and access to infrastructure and other key public goods and services, enhanced innovation, strengthened ancillary services, and better institutional and human capital, among others.

Figure 1 illustrates the different categories of enablers that governments can provide to enhance agribusiness competitiveness. At the base of the pyramid, "essential enablers" such as infrastructure and enforcement of land tenure systems will make possible the functioning of markets and agro-enterprises. The "important enablers" are second-order activities that governments can and often do provide, e.g. finance, research and development, and information. "Useful enablers" are defined as sufficient but not necessary conditions, including linking small farmers to formal markets, and providing access to business development services (Christy *et al.*, 2009; FAO, 2013).

Governments can provide such enablers sectorwide or can focus on specific territories. Spatial policy instruments, such as the ones discussed in this book, are part of the second category. They deal with the provision of these enablers in a specific territorial jurisdiction with the aim of improving the competitiveness of the agribusiness and agro-industry sectors in the selected location.

FIGURE 1
Enablers of agribusiness and agro-industrial competitiveness



Source: Christy *et al*. 2009, p. 150.

Enhancing food security. Geography is an essential dimension affecting food security and nutrition (FSN). Food insecurity has deeply entrenched local root causes linked to territorial assets and liabilities. Therefore, geographic disparities in FSN are evident in a multitude of contexts: from the rural-urban to the North-South divide, across subregions within countries, and across cities, towns and countrysides (Cistulli *et al*., 2013). Food insecurity is mostly widespread in places with low "territorial capital", i.e. that are disadvantaged on multiple counts – inadequate human and institutional capital, poor infrastructure and poor connectivity, lack of basic public goods and services, degraded or scarce fertile land, lack of water and other natural resources, etc. Cases in point are remote regions inhabited by indigenous groups in places as disparate as Viet Nam, Argentina and Central America. Unfortunately, such inequalities and disparities seem to be increasing (*ibid*).

FAO, the Organisation for Economic Co-operation and Development (OECD), the United Nations Capital Development Fund (UNCDF) and other members of the international community have acknowledged the links between FSN and agro-territorial development (Cistulli *et al*., 2013). They highlight, therefore, the relevance of mainstreaming territorial approaches to address FSN problems (*ibid*). They note that place-based approaches can improve the structural and contextual dimensions of food security (availability, access, nutritional quality and stability) because they allow for the exploration of the multidimensional, multi-actor and multilevel nature of FSN (Cistulli *et al*., 2013; Marta, 2013). Sectoral and crop-specific policies typically do not systematically recognize differences in the conditions that smallholder farmers and small-scale agribusiness firms face across territorially defined contexts

and, hence, may overlook the potential for more diversified agricultural production and off-farm income-generating opportunities.

Area-specific policies and interventions can also help to understand better the determinants of FSN status and inequalities, which generally depend on local conditions and specificities. Based on this improved understanding, locally targeted interventions can: (i) ensure a more efficient allocation of resources through a maximization of local natural and human resources; (ii) promote an inclusive and integrated approach to decision-making; and (iii) allow for territorially tailored policies as opposed to spatially blind, one-size-fits-all approaches (Marta, 2013).

This Sourcebook focuses mainly on the first two objectives of agroterritorial development: promotion of agribusiness investments and enhancement of agribusiness competitiveness.

Urbanization and the territorial debate: rural versus urban

Territorially based approaches to economic development have evolved in the broader context of the long- standing debate on the relative priority to be given to rural versus urban areas, given the dynamic forces of urbanization. As the science of economic development emerged in the 1950s and 1960s, the accent was placed on urban and industrial development at the expense of rural development, as noted in the work of Rostow (1960). There was also an eagerness to tackle the issue of growing economic disparities across regions and nations, easily noticeable in that period characterized by strong economic growth, industrialization and low unemployment. This eagerness translated into efforts to ensure greater equity by influencing demand conditions in lagging regions, mainly through financial transfers and large-scale public infrastructure investments. One of the preferred policy tools then utilized was Perroux's growth pole or centre (Perroux, 1950). This concept refers to propulsive industries benefiting from urbanization economies around a central core (city or town) that are able to trigger growth for participating producers, suppliers and other economic actors, as well as those of surrounding areas (*ibid*). Perroux's ideas gave rise to a related regional development strategy based on supporting growth centres driven by propulsive industries linked to urban areas.

Also around that time, the influential Argentinian economist, Raúl Prebisch, noting the declining terms of trade between raw materials and manufactured products, argued for import substitution and capital preferences for industrialization (Prebisch, 1950). Many countries followed these ideas, which were giving priority to urban areas and often to capital cities, even at the expense of rural areas. This practice suited national elites (residing in urban areas), who often enjoyed preferential access to capital and protected markets for their industrial ventures, and encouraged a co-dependency between economic elites and ruling political parties. But this approach tended to subsidize urban food prices while penalizing farmers and rural dwellers who made up the majority of the poor.

In spite of budget constraints, central governments tried to reduce geographic disparities in terms of income, infrastructure and employment by altering supply conditions (i.e. production cost factors). Industrial complexes and industrial districts were concepts in vogue at the time (Isard, Schooler and Vietorisz, 1959). They were considered a nurturing industrial environment where firms, particularly small and medium enterprises (SMEs), could prosper thanks to technological

innovation and agglomeration benefits. Unfortunately, the most representative and extensively studied cases of industrial districts were specialized in sectors that were losing markets because of increased global competition (e.g. textiles, tiles, clothing, shoes and furniture), linking the concept of industrial districts to a long list of failed experiments. Nonetheless, in the late 1980s and 1990s, the notion of industrial districts began to be revisited and this time applied successfully to more knowledge-intensive and high-technology industries, such as microcomputers, microelectronics and biotechnology.

The 1980s underscored the role of market-oriented policies and the private sector in development, two approaches that were neutral with regard to the rural versus urban debate. The promotion of clusters and the competitiveness focus of the 1990s, in addition to the opening up of large regions of Eastern Europe and the former Soviet Union to the market economy, were similarly neutral.

Over time, there have been periodic counter-reactions to urban-biased policies. They all aimed at returning agriculture, rural development and basic human needs to the centre of the development agenda.[1] The World Bank, under Robert McNamara's leadership,[2] made it a priority of the organization to help the poorest of the poor, in other words small farmers and rural dwellers. In this perspective, the World Bank, together with other major donor organizations, supported the Integrated Rural Development (IRD) model, which prevailed particularly in developing countries (Binns and Funnell, 1983). IRD projects were conceived as area development schemes involving a broad range of activities designed to improve production, infrastructure, services and living standards, and with emphasis on the linkages between the various components and geographic zones (Apostolides, 1997). The components of IRD projects varied from project to project, but generally included support to income-generating sectors (agriculture and agro-industry) and related services (marketing and storage of agricultural outputs and inputs), infrastructure development, research, training and other human resources development activities, environmental protection, and institutional development, among others. The IRD approach proved not very successful in general, with large overheads, parastatal structures edging out the private sector and few synergies between components and governance issues. It was practically abandoned in the late 1990s/early 2000s and replaced by Community-Driven Development (CDD).

Another model adopted alternatively in the late 1970s and early 1980s was Friedmann's agropolitan development, which called for endogenous development alternatives based on local actors, resources and capacities (Friedmann, 1979). This approach stressed the importance of connecting the processes of dynamic change from within agricultural communities to central guidance by the state, and stressed the need for devolution and decentralization.

The compelling argument driving the return to rural areas in the 1980s was that these areas were where the poor were (Timmer, Falcon and Pearson, 1984). As the critical mass of countries joined the Western market economy under the

[1] The focus on basic human needs was popularized by the International Labour Organization (ILO), a United Nations body, at an ILO Conference in 1976.

[2] Fifth President of the World Bank Group, 1968–1981.

World Trade Organization (WTO), and as private capital came to dwarf official development assistance in the 1990s and early 2000s, donors began to prioritize those projects that would focus on very poor regions and communities. This shift had implications for territorially specific approaches to agricultural and agro-industrial value chains. One of the expressions of this pro-poor focus was the replacement of the IRD model by the Sustainable Livelihood (SL) approach, mainly promoted by the Department for International Development (DFID) of the United Kingdom in the 1980s and 1990s. IRD and SL share many common features, but diverge in their focus (IRD tending to be area-focused whereas SL is more people-centred), size and scale of interventions (large and complex for IRD and incremental for SL), and participation approach (top-down in the case of IRD versus bottom-up for SL).

In the 2000s, rural and urban development practitioners started placing more emphasis on urban-rural linkages and change, giving rise to the Local Economic Development (LED) approach, mainly promoted by the World Bank (World Bank, 2006). LED emerged in response to municipal governments realizing that firms and capital were moving between locations for competitive advantage. Although LED had the potential to be undertaken at different geographic scales and levels, it showed a bias towards towns and cities (Quan and Nelson, 2005). LED theorists and practitioners sought to build up the economic capacity of a local area (municipality or group of municipalities) to improve its economic future and the quality of life for all. LED projects involved a process by which public, business and non-governmental sector partners worked collectively to create better conditions for economic growth and employment generation. By its nature, LED called for partnerships, implicitly linked to urban areas, between the business sector, community interests and municipal government (World Bank, 2006).

As noted earlier, in the 2000s and the following decade, focus on the MDGs, FTF and the "Bottom Billion" again emphasized investment in rural regions. In recent years, a new wave of territorial development models has emerged to bridge the traditional divide between rural and urban development theories by shifting the emphasis to enhancing rural-urban linkages. Instead of treating the two realities as separate, detached entities, these new models focus on the interactions between the two. This new territorial development policy seeks growth and competitiveness instead of convergence. It stresses the importance of promoting a multilevel, multistakeholder governance system and of ensuring a software-orgware-hardware continuum[3] in all territorial development interventions. It maintains that through coupling investments in physical connectivity with trade and regulatory policy reforms, increasing returns can be obtained (Giordano, 2012). The instruments analysed in this Sourcebook represent the application of current thinking on territorial development, building on the combination of theory and practice of the past decades as exposed briefly in this section.

[3] This term refers to the continuity of aspects regarding the "hardware" (infrastructure), "orgware" (organizational strengthening and governance) and "software" (policy and regulatory coordination preparing the ground for "hard" investments, e.g. promotion of an enabling environment and human resources development) of any intervention.

Table 1 summarizes the various models presented, noting their geographic focus, promoters, main features and time during which they were developed and implemented.

Drivers of territorial investment decisions in agribusiness

This subsection presents perspectives from the literature on the factors that drive agribusiness investment into targeted territories. As explained in the previous sections, agribusiness firms invest in locations where they can reduce their transaction costs through increasing economies of scale and scope, or produce competitively by benefiting from good agro-ecological conditions and environments. By adopting territorial approaches, governments seek to influence this investment process in a cost-effective manner. However, this approach can only work if the public sector really understands the factors that push or pull agribusiness investors into or out of a given area.

Private investment decisions in specific places are determined by the interplay of push and pull factors. Push factors are global influences on investment that are somewhat independent of the enabling or disabling environment in the capital-importing location. Conversely, pull factors are place-specific drivers linked to the economic and institutional conditions of the location that is targeted by the investment (Fernández-Arias, 1994).

Several push factors have contributed to growth in investor demand for agribusiness in developing countries. These factors include the expanding opportunities in agribusiness and agro-industry global value chains. In turn, the main pull factors are the following:

- access to natural resources, especially land;
- quality and cost of labour, and overall profitability in the host location;
- market size and access;
- political, institutional and macroeconomic stability;
- sound infrastructure in terms of transport, power and information and communication technologies, among others;
- a deregulated environment and an enabling investment policy of the host government, including investment incentives provided;
- tariffs and non-tariff barriers.

Decisions regarding agro-industrial location are in fact predominantly driven by three pull factors: access to markets, access to raw materials and access to transportation (water, rail and roads) and energy.

Access to markets. Companies are attracted to (pulled towards) locations that offer good markets or productive assets or advantages – e.g. access to a large consumer base, efficient labour markets (competitively priced and appropriately trained), and deep input and support service markets (clusters of input providers and supporting industries). For agro-industry, being near consumer markets is essential; this feature is one of the main factors attracting agro-industry to cities. This attraction to cities is particularly important in low- and middle-income countries, where urban markets are becoming ever more attractive for agribusinesses. At present, nearly 2.8 billion or 73 percent of the 3.8 billion urban dwellers worldwide live in

TABLE 1
Territorial development models

Focus	Theory	Years	Promoters	Main features
Urban development	Growth centre/pole	1950s–1960s	Perroux	▪ *Objective*: economic convergence ▪ Promotion of propulsive industries linked to urban areas ▪ Top-down
	Industrial district or complex	1970s–1980s	Isard and Schooler, Sabel, Saxenian	▪ *Objective*: increasing competitiveness by taking advantage of localization economies ▪ *Geographic scope*: industrial agglomerations (SMEs) in urban areas
	Cluster	1990s–2000s	Porter	▪ *Objective*: competitive advantage of an industry in a specific territory by intensifying value networks among firms and institutions ▪ *Geographic scope*: industrial agglomerations mainly in urban areas
	LED	2000s	World Bank	▪ *Objective*: convergence by building up the economic capacity of a local area to create better conditions for economic growth and employment generation ▪ *Geographic scope*: municipalities or group of municipalities ▪ *Governance system*: participatory approach involving public, business and non-governmental partners
Rural development	IRD	1960s–1970s (up to 1990s)	World Bank and the United States Agency for International Development (USAID)	▪ *Objective*: convergence ▪ Comprehensive rural development across a number of priority sectors in a specific territory ▪ Area-focused ▪ Top-down ▪ Large and complex size and scale of interventions
	CDD	1990s/2000s	World Bank, FAO, International Fund for Agricultural Development (IFAD)	▪ Community-focused ▪ Community responsibility for managing its development ▪ Capacity development to enable communities to play a greater role
	SL	1980s-1990s	Department for International Development of the United Kingdom (DFID)	▪ *Objective*: convergence ▪ People-centred, thus relatively neglecting the spatial dimension ▪ Bottom-up ▪ Incremental interventions
Rural-urban linkages	Agropolitan	1980s	Friedmann	▪ *Geographic scope*: urban-rural interface → development of agropolitan districts in the process of "rurbanization" ▪ Bottom-up
	Current model	2010s		▪ *New objectives*: growth and competitiveness, instead of convergence ▪ *Geographic scope*: all-region focus, as opposed to targeting lagging areas exclusively ▪ *Governance system*: central government has been substituted by a multilevel governance system involving both private and public sector actors on different scales ▪ *New policy instruments*: soft and hard mixed investments in place of subsidies and state aid often to individual firms

Source: authors' elaboration.

these countries, and this market is expected to grow exponentially: the number of city dwellers in low- and middle-income economies will double by 2050, from 2.8 to 5.7 billion people.[4] But there are other factors propelling agro-industries out of the cities. These include higher property costs, traffic congestion, typically higher costs of urban labour, and pollution issues – especially important in the case of slaughterhouses and leather tanning.

Ability to source agricultural raw materials. Agro-industrial investment locates where the supply of agricultural products is efficient and assured. Such supply is influenced, at a macro level, by the *availability of land and other natural resources, notably water*. The availability of productive land is one of the main factors currently driving agribusiness investments into low- and middle-income economies. In fact, the global reserve of prime land and good land that could be brought into cultivation if needed (1.4 billion ha for rainfed crop production outside forest and protected areas) is mainly located in sub-Saharan Africa (SSA) and Latin America (FAO, 2012). A large fraction of this spare land is, however, not readily accessible because of constraints that make it costly and uneconomical to exploit for agriculture.[5] Moreover, inadequate titling, non-transparent land ownership processes and communal or tribal forms of land tenure may complicate the ability to free up agricultural land for its productivity-enhancing investments. What is more, the potential dispossession of small landholders is a risk commonly associated with the transition to modern, commercial, agribusiness productive systems. Indeed, foreign investment in land remains politically sensitive in many countries and even large-scale domestic agribusiness that dispossesses small farmers can be socially charged.

At a more micro level, *product weight* and *perishability* are key determinants of agro-industrial location. Perishability of raw materials means that factories sometimes have to be located close to rural production areas. This requirement is the case, for example, for nearly all zones producing sugar cane, since the sugar content of cane begins falling off dramatically with each passing hour once the cane has been cut. This is why *ingenios azucareros* [sugar refineries] in the Dominican Republic are located next to the fields of La Romana rather than in Santo Domingo. It also explains why fish processing plants in Uganda are located on the border of Lake Victoria and not in Kampala, only an hour or two away. When agricultural raw materials are relatively heavy compared with the final product, transportation costs can be reduced if processing is carried out near the source of production, especially where maritime or rail transportation is not an option. On the other hand, perishability between farm and factory may be outweighed by perishability and time constraints between factory and consumption, which is why most dairy processors are close to urban areas. The design of interventions in corridors, parks and other tools will have to take these factors into account, and these may vary considerably throughout the various agricultural value chains involved.

[4] World Development Indicators, 2014, the World Bank Group: http://wdi.worldbank.org/table/3.12

[5] This is because, for example, the land lacks infrastructure, is located in areas far away from markets or suffers from incidence of disease.

Infrastructure and logistics. The locational advantages granted by easy access to markets and/or raw materials can be further enhanced by infrastructure investment in roads, canals, railways, airports and ports. Investments in *road and rail transportation* reduce the cost and travel time of agricultural raw materials from farms to factories for processing, and those of final products from factories to markets. *Infrastructure* for waterborne transport is equally important. Agro-industrial location is significantly driven by transportation advantages afforded by seas, lakes and rivers, around which most of the world's population has settled and where most agricultural trade takes place. For example, countries dependent on imported grains have silos and cereal processing plants near inbound ports, even though containerized multimodal transportation has broadened the options for agro-industrial location by lowering the costs of both inbound and outbound transportation. The development of bimodal platforms (port-road or road-rail) is a winning combination. A case in point is the regionally focused investment in ports and key roads in the Horn of Africa, which has been a main element of success in promoting agribusiness development and avoiding famines. In many parts of the world, the advantage of rivers is further augmented by reliance on mills, powered by these rivers, to grind grain and provide power more cheaply than relying on human or animal power. Investments to improve *access to energy* for agroprocessing, water pumping and other energy-intensive activities are often part of corridor planning and agropark and SEZ design.

It is interesting that electrical grids also now play a critical role in location decisions. Because of limited investment in power connections to rural areas, rural agro-industries with high potential for production often incur operation costs 30 percent higher than those close to the national grid. Thus most of the major transport corridors where agro-industries choose to locate include main electrical transmission lines (Kilimo Trust *et al.*, 2011). In the same way, better access to energy was the key for opening up meat, dairy and horticulture industries that require cold chain facilities in newly competitive regions of Argentina. It is today critical for the fast development of cold chains in East Asia (China and Viet Nam). Similarly, improvements in *airborne infrastructure* and related facilities (cold storage facilities at airports) have been instrumental in the development of agroterritorial units, such as the cluster for the production, assembly and export of bouquets of cut flowers from the Bogotá region in Colombia.

Taking these issues into consideration, governments can engage more proactively in promoting agribusiness investment and development by focusing on methods and approaches to identify the vocation of various areas and to target these areas for commercial, residential and (agro-)industrial uses. This process may include setting aside zones to attract agro-industry and thereby add value to the agricultural base of a region. Such zoning exercises need to be accompanied by infrastructure developments that help maximize the potential of the economic activities, including agro-industry, to be carried out in the various zones.

1.3 ORGANIZATION OF THE SOURCEBOOK

The book is organized into nine chapters. This introductory chapter provides basic information about the Sourcebook itself, discusses key concepts and issues, and examines the history, objectives and challenges related to territorial approaches to investment promotion.

Chapters 2 to 6 are each dedicated to a specific investment promotion instrument. The second chapter describes the concept and experiences of *agricultural growth corridors* across the globe. Chapter 3 is devoted to *agrobased clusters*; Chapter 4 to *agro-industrial parks*; Chapter 5 focuses on *agrobased SEZs*; and Chapter 6 on *agribusiness incubators*.

These chapters discuss the definitions, objectives, conceptual foundations, history, key success factors, implementation and management frameworks, as well as challenges and solutions. Text boxes are included to illustrate specific examples. Each chapter includes one or more cases, which examine in some detail the specific implementation of the tool in various settings in terms of objectives, choices made, challenges and outcomes.

Chapter 7 focuses in on the *investment promotion processes, systems and players involved in agroterritorial development.* Each of the tools analysed in the Sourcebook requires absolute focus on the competitive and profit interests of investors and requires effective promotion of investments among potential investors. This chapter identifies who the main players are, issues and challenges from the perspective of both investors and investment promoters, and the most commonly used means of investment promotion. In particular, it discusses how to contribute to a better investment and business climate and to the growth of capital flows into the agro-industrial sector of the targeted territory from the perspective of the public sector. It also summarizes lessons learned from relevant experiences around the world.

Chapter 8 considers *objectives, issues and good practice with respect to governance, the role of the public sector and public-private dialogue*. Good governance and good choices made with respect to government's role in promoting and implementing these tools are a response to many factors. These include the geographic footprint of the tool, policy choices with respect to the balance between public and private roles, and the level of sophistication and complexity in the economy. Each of the tools needs clear choices to be made regarding governance and public-private balance, and consideration of the interests of communities and producers.

Chapter 9, the concluding chapter, provides *summary checklists* for designing and implementing agribusiness and agro-industry development programmes based on application of the tools. Intended as a guide or framework for planners and implementers, four checklists are provided, focusing on key points and lessons from the previous chapters. Each checklist includes major considerations and important implementation steps.

Checklist 1. *Making the decision*. Why is this being considered? Which model should be used?

Checklist 2. *Feasibility considerations*. Key requirements. Will it work? Binding constraints, profit and economic rate of return (ERR) projections.

Checklist 3. *Design considerations.* Key issues such as logistics, infrastructure and processes.

Checklist 4. *Implementation considerations*, such as management, governance, location, investment promotion and services.

Finally, the chapter also highlights *major messages and lessons emerging from the tools and their use in practice*. It underlines factors important in the choice of the tool, and stresses differences in the functionality of the tools and the main factors impacting their utility and sustainability.

Each chapter in the book includes a bibliography, giving the sources consulted in the preparation of the chapter.

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Chapter 2
Agricultural growth corridors

> *"Economic corridors can contribute to improving economic infrastructure for agriculture and other productive activities, enhancing access to markets, increasing human capital and creating an enabling environment for private investment in the targeted areas."*
>
> José Iturrios, Poverty Reduction and Alleviation (PRA) Project, Peru (2003)

Agricultural growth corridors, or agrocorridors,[6] represent an ambitious approach to agricultural development. As a spatial development initiative (SDI), agrocorridors promise to have a major impact on improving the competitiveness of hinterland regions, opening up new production possibilities, improving farmer incomes and developing stronger agribusiness value chains. Development planners, in particular from lower-income countries, are increasingly inclined to use them as a strategic tool to draw private capital and large-scale investment to projects that benefit smallholder farmers and boost food security.

This chapter defines agrocorridors, underlines their importance, reviews recent examples, provides a framework for agrocorridor development and cautions about potential pitfalls to avoid.

2.1 DEFINITION AND BACKGROUND

Economic corridors are development programmes that foster promising economic sectors in a territory by further leveraging existing economies of scale along a physical backbone of transport infrastructure. At the basis of any economic corridor initiative is the development or improvement of connective infrastructure, including roads, rail networks, canals and gateways such as ports and airports (FAO, 2014). This combination of transportation networks that connect centres of economic activity across one or more adjoining cities, regions or countries is known as a transport corridor. A transport corridor often has a linear configuration but can also spread, forming tree networks, meshes or hub-and-spoke networks.

People and economic activities tend to agglomerate along transport corridors, taking advantage of reduced transport costs and travel time. Improvement in transport infrastructure and logistics services is likely to increase the movement of people, goods and services and, therefore, sustain the rapid expansion of trade. To

[6] Focus on agricultural corridors was given a major conceptual boost in a recent FAO publication (2014). This chapter draws heavily on that work by providing an overview and guide for those wishing to review agrocorridor case studies and understand better the unique elements of these initiatives.

amplify this effect, trade facilitation elements can be built into the existing spatial planning scheme, resulting in a trade corridor initiative that bolsters trade and integration within the country or region and into global markets. An economic corridor is the logical next stage in which sector and industry-focused development strategies are combined with broader infrastructure and trade plans. The latest stage in this development path (see Figure 2) is the growth corridor that integrates non-economic elements such as environment protection, health concerns and cultural dimensions (FAO, 2014).

For the sake of simplification, economic corridors and growth corridors are considered to be synonymous in this book. It is important to bear in mind that they are one kind of SDI that aims to simultaneously foster the economic, social, environmental and physical evolution of territories.

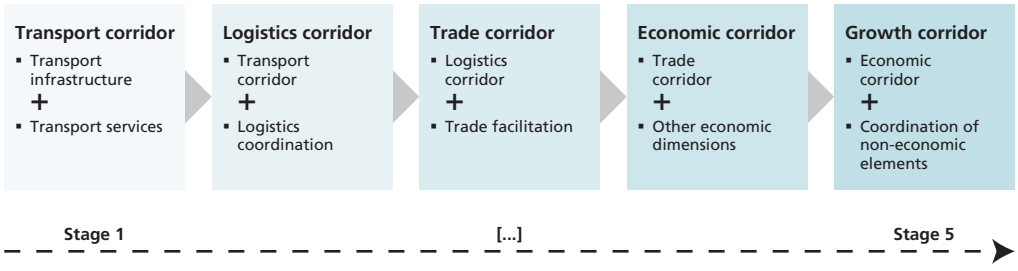
In developing countries, where agriculture is often one of the sectors with greater competitive advantages, it tends to be a primary target of corridor programmes. By promoting agrocorridors, governments and other corridor sponsors seek to maximize agricultural and agro-industrial output by connecting existing or potential producers to markets and by encouraging agro-enterprise investment.

Agrocorridor initiatives may be a sequential add-on to existing transport infrastructure investments or may be consciously planned from the beginning to focus on the agricultural sector. Either way, agrocorridors associate sectoral development strategies concerned with food, agriculture and agro-industry with broader infrastructure, logistics and trade facilitation plans. For those focused on agricultural development, agrocorridors represent an important, if relatively recent, advance beyond the historical and traditional focus on transport and trade corridors. For a summary of these concepts, see Box 1.

Historical overview of agrocorridors

Agrocorridors are a relatively recent focus in economic development but can be said to date back to the agrocorridor infrastructure plans and projects along the rivers of ancient Egypt, Mesopotamia and China (BBC News, 2009). Land-based corridors would come much later. Roman roads had important implications for agriculture,

FIGURE 2
Potential development path for corridor initiatives



Source: FAO, 2014.

BOX 1
Types of corridors

Transport corridors include infrastructure and transportation services and represent the most basic level of corridor development. These corridors often have a number of nodes, such as municipalities and urban or semi-urban centres. The benefits of transport corridors, especially for landlocked countries, is to reduce the cost of transporting agricultural products to the main markets – rendering more feasible certain exports that can now be shipped at lower costs – while also lowering the cost of imports (including agricultural inputs) (Bowland and Otto, 2012).

Logistics corridors build on to transport corridors the necessary supplies and services that enable logistical coordination. Logistics corridors usually involve legal agreements on regulations, standards and other features that improve the efficient movement of goods and people.

Trade corridors actively promote intercountry exports and imports, supported by trade agreements and involving trade facilitation initiatives. Trade corridors involve the harmonization of tariffs and reduction of non-tariff barriers. They also include more extensive arrangements for facilitating trade. Harmonization of transport, freight and customs regulations often features in trade corridors. Trade corridors presuppose net advantages for the countries involved, although there may be winners and losers along the corridor. The stimulus to economic growth, jobs and incomes is usually compelling.

Economic corridors presuppose that transportation corridors are in place but they do not depend on having trade agreements, however useful these may be. They put in place a set of policies, incentives and services that seek to stimulate private investment in a robust set of economic activities that create clusters of interlinked enterprises or that strengthen those clusters that are emerging.[7] Economic corridors often lower the barriers to investment and seek to make that investment more productive. Securing anchor investments or investment commitments may be part of this approach. Investment attraction efforts are often complemented by workforce development schemes and the assurance of public services.

Growth or *development corridors* build on the above categories by adding other developmental concerns such as health systems, environmental protection and a comprehensive set of policies that go beyond the economic ones.[8] Experience with integrated rural development in specific regions would seem to be relevant to the expanded focus of growth corridors.

*Sector-specific corridors (*including *agrocorridors)* are a particular subset of the corridors mentioned above. These may be focused on a specific sector such as mining, energy, agriculture, manufacturing or tourism. Sector corridors focused on mining or hydrocarbons often focus on natural resources from deposits in areas isolated from the cities or ports where they are processed, used or exported (Weng *et al*., 2013). As such, they can have the characteristics of transport corridors, although planners may be attentive to the ancillary economic development benefits along the transport route.

[7] The Poverty Reduction and Alleviation (PRA) Corridor in Peru is a notable example of an economic corridor (USAID, 2008).

[8] The Southern Agricultural Growth Corridor of Tanzania (SAGCOT) is one of the most widely cited growth corridors in the implementation phase: it incorporates development plans targeting the agribusiness and infrastructure sectors, together with concerns for environment and livelihood improvements.

although their construction and maintenance were primarily for the purposes of military and political control. Sea routes would remain critical to food supply. The Silk Road was another major trade corridor. While it included agriculturally produced spices, the major focus was on non-agricultural, high-value, low-weight and non-perishable products such as silk, jewellery and precious metals. It did not involve the opening up of new agricultural lands, except around oases to feed the caravans (Elisseeff, 2001). Agricultural corridors as we understand them today open up new lands and involve conscious planning and development, as distinguished from simple trade routes.

In the nineteenth century, agrocorridors began to open up in new ways as canals and water transport flourished, followed by railways and roads. In the United States of America, the Erie Canal in New York, and similar canals elsewhere, brought agricultural products to market and facilitated the acquisition of products by households, towns and farms. As new land opened up, farmers followed. Their produce generated income for the canals (Taylor, 1951). Railways then forged transportation corridors that generated spin-off economic activity, including agricultural activity, especially around refuelling towns. Indeed, investment in the transcontinental railroad of the United States of America was stimulated by land grants to the railroad companies that were expected to entice investors with the promise of the ancillary economic activity to be generated along these lines of track (Northrup, 2003). This was one of the early successful examples of stimulating economic activity along land-based transport corridors. Farmers were attracted to lands along the railroad corridor if they were propitious for growing crops, since the railroads would provide access to markets. This, in turn, created greater passenger and freight traffic for the railroads. The addition of refrigeration created powerful agrotransport corridors by land and sea.

With the advent of cars, trucks and motorways in the twentieth century, road infrastructure planning became a part of national economic plans. Transport corridors became increasingly diverse and networked.

From the 1950s, the focus on economic growth and poverty reduction in emerging economies involved transportation corridors as necessary investments. Corridor development, including both rail and road transportation corridors, has often been motivated by access to mining and hydrocarbons and for the development of hydroelectric energy. What is new today is the use of corridor planning to optimize the potential for economic growth and specifically agricultural development. In Europe, although corridors and other directed investment planning had fallen out of favour by the 1980s, they had an upsurge in popularity from the end of the 1990s, in part because of their potential for creating growth (Healey, 2004). In Asia, economic corridors gained prominence as a growth instrument thanks to the development efforts of the Asian Development Bank (ADB) to improve water and land transport connectivity and regional integration in the Greater Mekong Subregion (GMS) (De and Iyengar, 2014). Waterways play a particularly important role in Southeast Asia and other locations that benefit from available water transport routes, as they are the most efficient and environmentally friendly type of transportation whenever the option is available. This is particularly the case in Viet Nam, Cambodia and Myanmar.

Corridors have in recent years become an important aspect of development strategy in Africa, with groups such as the African Union, World Bank and African

Development Bank funding transport and economic corridor projects (Adzibgey, Kunaka and Mitiku, 2007). Agrocorridor initiatives are a specific subset of economic corridor projects that include policies, public investments and private investments geared specifically to the agricultural sector. Road-based African examples are numerous, including the famous Maputo Development Corridor (MDC). However, innovative railway corridor initiatives are also prominent, such as in West Africa (e.g. the Abidjan-Niamey line, currently being extended to Nigeria by a public/private consortium led by the Bolloré/SAGA group) and East Africa (Uganda/Kenya/United Republic of Tanzania). The ongoing widening and upgrading of the Suez Canal appear to be assuming strong corridor characteristics, instigating new agricultural and agro-industrial investment.

The recent upsurge in focus on agrocorridors has a number of reasons, including the recent success stories, and the potential of agrocorridors for leveraging public-private partnerships (PPPs) and for promoting inclusive agribusiness growth in low- and middle-income countries (FAO, 2014). The 2014 FAO study presented six case studies from three continents. One small-scale case was the Peruvian Poverty Reduction and Alleviation (PRA) project, financed by the United States Agency for International Development (USAID), beginning in the late 1990s (USAID, 2008). USAID's approach gave importance to the role of private investment. Many corridors were developed and the benefits documented in project evaluations. The most ambitious case was the GMS project, signed in 1992, which linked Cambodia, the Lao People's Democratic Republic (PDR), Myanmar, China, Thailand and Viet Nam (ADB, 2008b). Here, harmonization of standards is lagging behind even as infrastructure plans go forward, yet the implications for agricultural production and trade are enormous. The World Economic Forum (WEF) helped mobilize private sector interest and resources for agricultural corridors in Mozambique and the United Republic of Tanzania in the early 2010s (WEF, 2013). The two remaining cases include a national corridor programme in Indonesia and a corridor initiative linking ten Central Asian countries, known as the Central Asian Regional Economic Cooperation (CAREC) programme.

Two other examples are the agrocorridors in the Philippines and Sri Lanka. Those in the Philippines have an important maritime dimension and are being explored as new methods to improve the efficiency of inter-island transportation (Cruz, 2011). As in Indonesia, the development of economic corridors entails multimodal means of transport, combining land and sea. The end of the civil war in Sri Lanka is creating new North-South and East-West corridor opportunities that should provide formerly isolated northern lands with new incentives for agricultural production and agro-industrial investment (ADB, 2011a).

Visual overview of corridors

To understand agrocorridors, it is helpful for the reader to visualize a series of maps, reproduced here from the 2014 FAO study.

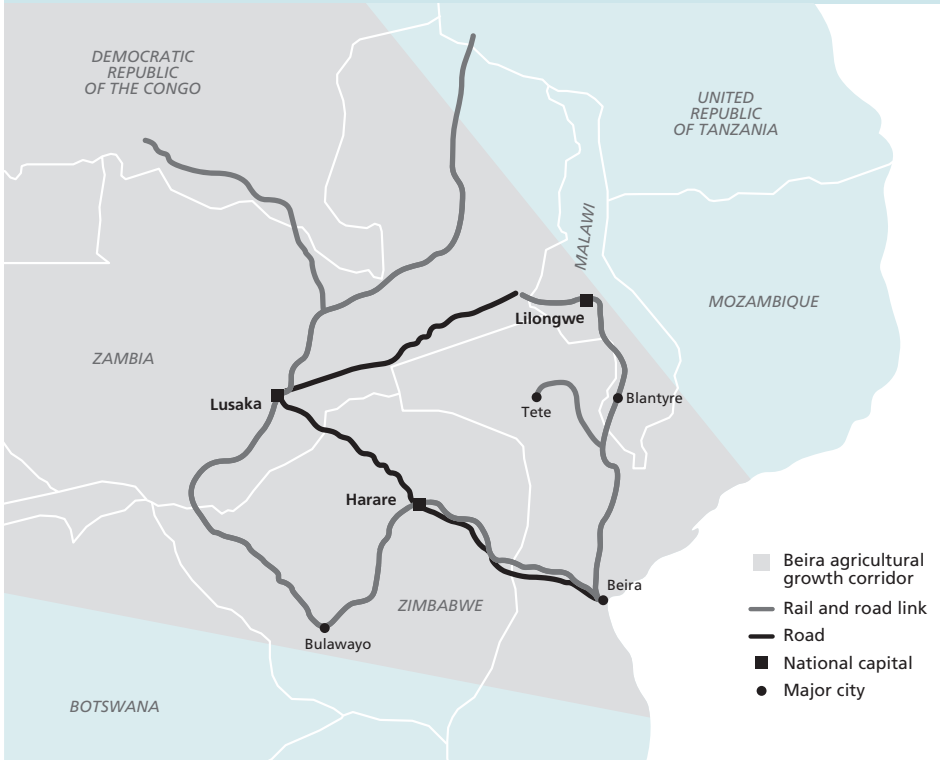
Named after the port of Beira at its eastern node, the Beira Agricultural Growth Corridor (BAGC) in Mozambique connects the landlocked capitals of Lusaka, Zambia and Harare, Zimbabwe with the port of Beira, Mozambique on the Indian Ocean in more or less a straight line (Figure 3). Additional corridors head north from Beira to connect Blantyre and Lilongwe, the two largest cities of landlocked Malawi with

more ambitious offshoots planned in the south to connect Bulawayo with connections throughout South-Central Africa (AgDevCo/InfraCo, 2010).

With US$18 billion in investments, the GMS corridors include three major corridors and nine subcorridors, linking the six signatory countries to the 1992 agreements on economic cooperation (ADB, 2008b). As mentioned earlier, these countries are Cambodia, Lao PDR, Myanmar, China, Thailand and Viet Nam (Figure 4). The Southern Corridor connects Bangkok, Thailand with Ho Chi Minh City in southern Viet Nam, passing through Siem Reap (Angkor Wat) and Phnom Penh in Cambodia with offshoots to other ports in Cambodia and Viet Nam. Roads north connect it with the East-West Corridor that connects Danang and Dong Ha, Viet Nam through Lao PDR and Thailand to an outlet in Myanmar facing the Indian Ocean. The North-South Corridor connects Yunnan, eastern Myanmar and northern Thailand and Lao PDR with Haiphong in Viet Nam with offshoots to Vientiane (Lao PDR) and Guangxi, China.

These corridors have been implemented for over 20 years and supported by ADB. Agriculture is vitally important to many of these regions and the corridor programme is having major impacts that are both foreseen and unforeseen. (This corridor is the topic of one of the cases at the end of this chapter.)

FIGURE 3
Southern Africa: the Beira Agricultural Growth Corridor (BAGC)

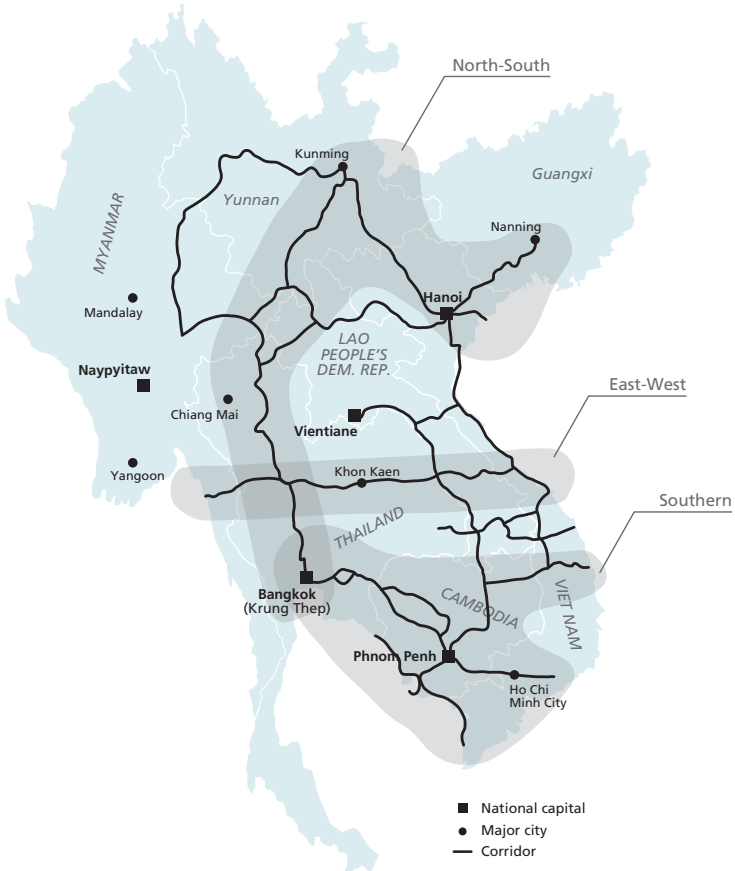


Source: FAO, 2014.

Another ambitious corridor project, CAREC involves ten countries of Central Asia (including western China), linking countries along ancient trade routes and to the Caspian Sea (Figure 5). From Azerbaijan to Afghanistan and from Mongolia through Kazakhstan, Tajikistan and Uzbekistan, this is a vast system of transport corridors and economic agreements.

The CAREC initiative is supported by ADB – in part inspired by the Mekong corridors described above, the European Bank for Reconstruction and Development (EBRD), Islamic Development Bank, International Monetary Fund (IMF), United Nations Development Programme (UNDP) and World Bank. The main initial areas of focus were on transport, trade facilitation, trade policy and energy. CAREC added a focus on agriculture as a secondary tier of activity ten years after CAREC's inception (CAREC, 2015).

FIGURE 4
Greater Mekong Subregion (GMS) corridors



Source: FAO, 2014.

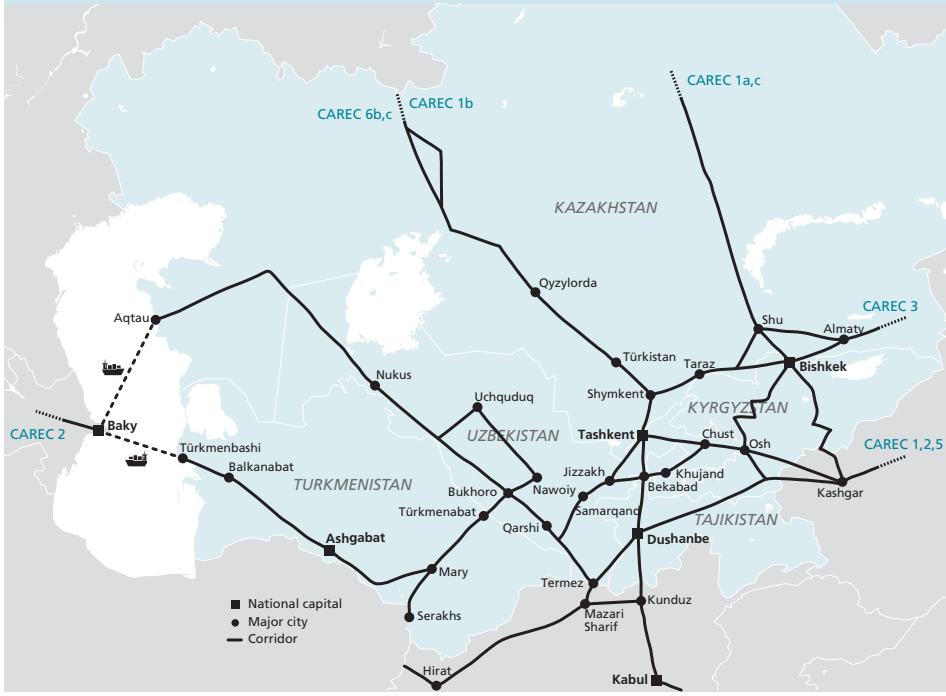
Agrocorridors are also being developed in Peru, especially linking agricultural zones in the Andes with the Pacific Ocean. In 1998, as mentioned, USAID launched the PRA project (Figure 6), which led to the establishment of multiple economic corridors throughout the country. Members of the private and public sector, including Peruvian ministries and mining companies, collaborated on the corridors. PRA led to an increase in Peruvian exports to the United States of America, and eventually the PRA approach became official Peruvian development policy. The project's success made it a model for the majority of corridor development projects in Latin America (FAO, 2014).

Types of agrocorridor initiative

Agrocorridor initiatives cannot necessarily be grouped neatly into categories but it may be useful to apply a set of conceptual lenses to understand the varieties of agrocorridor initiatives better. These include geopolitical focus, sector focus, funding source, governance, topography and product type. Some examples are shown in Table 2.

Geopolitical focus. Agrocorridors may be subnational, national or international, with the latter sometimes linked to regional trade agreements. The GMS corridor project, for example, has spurred a cross-border trade agreement between the six participating countries (ADB, 2008a).

FIGURE 5
Central Asia Regional Economic Cooperation (CAREC) corridors

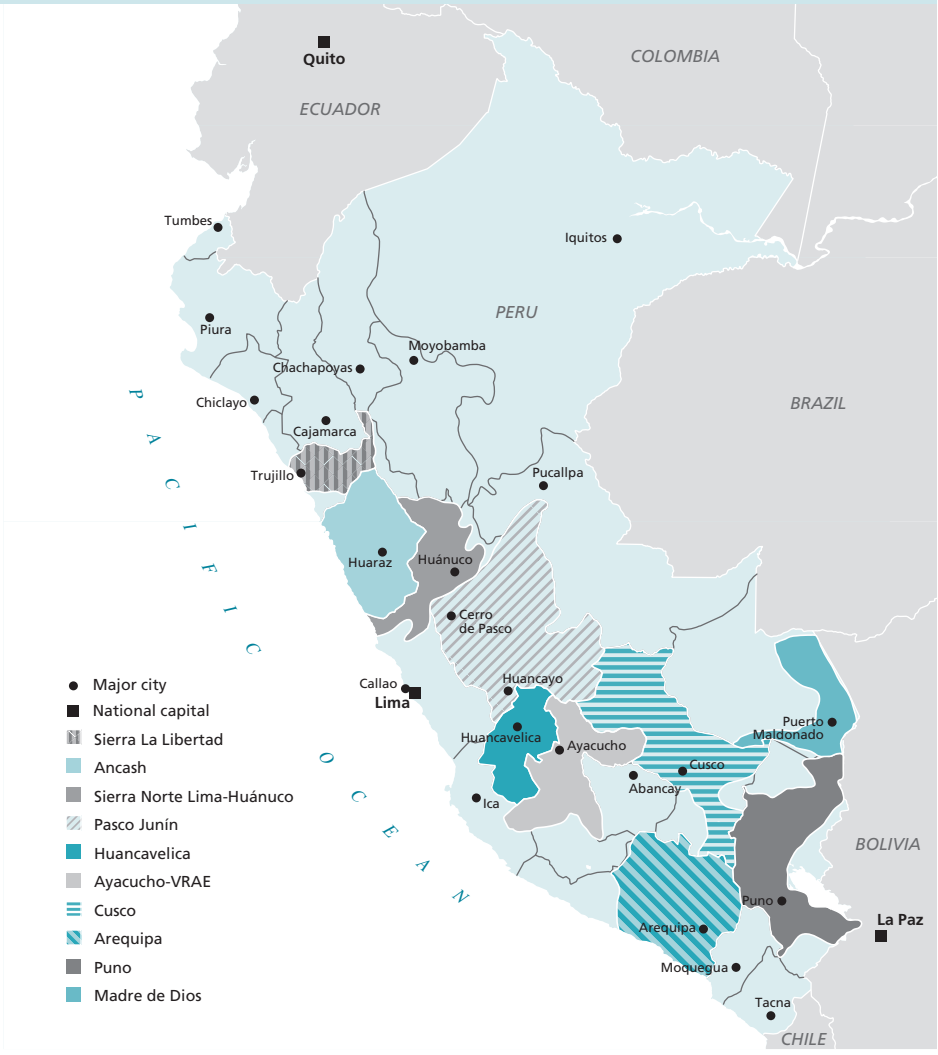


Source: FAO, 2014.

Economic sector. Agrocorridors may be either focused primarily on this one sector or, as is frequently the case, be multisectoral and include mining, energy, tourism and other sectors in addition to agriculture.

Complexity. Agrocorridors vary in complexity with regard to the number of countries involved, corridors planned and sectors concerned. They also vary enormously in the scale of budgets, which range from tens of millions to hundreds of billions of dollars, depending on the scope of infrastructure development efforts and the number of sectors supported, among other factors.

FIGURE 6
Economic corridors supported by the PRA project



Source: FAO, 2014.

Funding. Agrocorridor initiatives vary in origin or source of finance and may include national governments, bilateral donors, international development agencies, international financial institutions such as the World Bank and regional development banks, the private sector (domestic and foreign) and Non-governmental Organizations (NGOs), or a mix of the above.

TABLE 2
Examples of various corridor types

Region	Name	Countries involved	Key driver	Year of start	Estimated budget
Asia	GMS Corridor programme	Cambodia, Lao PDR, Myanmar, Thailand, Viet Nam and China (Yunan and Guangxi)	ADB, in collaboration with the European Investment Bank (EIB), IFAD (International Fund for Agricultural Development), the Nordic Development Fund (NDF, climate change investments), OPEC Fund for International Development (OFID) and the World Bank	1992	US$17.8 billion (1992–2014) + US$321 million in technical assistance (TA)
Asia	CAREC Corridor programme	Afghanistan, Azerbaijan, China (Xinjiang), Kazakhstan, the Kyrgyz Republic, Mongolia, Pakistan, Tajikistan, Turkmenistan and Uzbekistan	ADB, the European Bank for Reconstruction and Development (EBRD), International Monetary Fund (IMF), Islamic Development Bank (IDB), the United Nations Development Programme (UNDP) and the World Bank	(1996) 2001	US$46 billion + US$1 270 million in TA
LAC	PRA Project	Peru	USAID, in collaboration with two public and nine private partners	1998	Phase I (1998–2008) US$38 million and Phase II (2009–2014) US$23.9 million
Africa	BAGCI	Mozambique	WEF's New Vision for Agriculture	January 2010	US$0.4 billion, of which US$20 million in a Catalytic Fund
Africa	SAGCOT	United Republic of Tanzania	WEF's New Vision for Agriculture	May 2010	US$1.3 billion, of which US$650 million (backbone infrastructure) + US$570 million (last-mile infrastructure) + US$50 million (Catalytic Fund)
Asia	Indonesian Corridors	Indonesia	Government of Indonesia (GoI)	2011	US$398 billion, of which 10% funded by the public sector +18% by state enterprises

Source: FAO, 2014.

Governance. Corridors may fall completely under the purview of the public sector, be private driven, or be governed as PPPs.

Geographic characteristics. Agrocorridors have different characteristics depending on the topography of the regions concerned. They may involve ports, rivers, lakes, canals, railways, roads and even maritime transportation in the case of multi-island corridors for Indonesia and the Philippines, where ferries and multimodal sea transportation are very much a part of the corridor (Ralahalu and Jinca, 2013). They often involve prime agricultural land, and water resources along transport routes, which are suitable and available for investment.

Agribusiness product type. Corridors can impact multiple types of agribusiness goods, in both domestic staples and export crops such as biofuels, flowers and high-value horticultural crops (FAO, 2014).

2.2 GOALS, OBJECTIVES, BENEFITS AND REPORTED IMPACTS OF AGROCORRIDORS

Why agrocorridors? Agrocorridors merit specific attention because of their potentially catalytic effect on many socio-economic objectives of developing countries. The overarching goals of agrocorridor projects are to increase farmers' incomes, boost sector employment and enhance agricultural competitiveness by connecting existing or potential agricultural regions to major cities and to the ports and airports that can link these corridors with external markets. Potential benefits of agrocorridors include furthering economic growth, boosting investment in agro-industry, leveraging investments in infrastructure, facilitating regional integration, enhancing competitiveness of agricultural value chains, and contributing to food security and regional decentralization. Each of these will be discussed in turn.

Agrocorridors can *foster economic growth by increasing agricultural gross domestic product (GDP)* and also boost incomes for people in rural and formerly isolated areas. These incomes are not only those of farmers but include employment of non-landowners on farms and off-farm employment in the supply and post-farm industries that are stimulated. UNDP has highlighted the role of growth corridors in facilitating inclusive market development (Acquaye, 2012). Reduced costs in getting goods to market, to say nothing of lower costs in importing inputs, raw materials and consumer goods for farmers, make farming a more economically viable option in areas opened up by agrocorridors. There is a potentially positive effect on farmers and low-income residents of rural areas who can be connected directly with markets, inputs and energy, communications and transportation infrastructure support. For example, the road connecting Djibouti with Addis Ababa should enable Ethiopian producers to export more competitively but will also enable them to obtain goods from other countries at lower prices, thereby improving their standard of living, according to those involved in the trade corridor project linking Kampala (Uganda), Juba (South Sudan), and Addis Ababa (Ethiopia) to the port of Djibouti.[9]

[9] Authors' interviews.

Agrocorridors can *boost investment from both the public and the private sector*. Indeed, this is one of the primary objectives of such initiatives. Public investment, including international financial institutions (IFIs) and donor investment in public goods, is expected to unlock the potential for large-scale private investment in various forms. Private investment can be made in all the supporting industries involved in agrocorridor clusters (AgDevCo/InfraCo, 2010). Boosting private sector agro-industrial investment enables less developed regions potentially to move up the value chain while promoting market linkages for farmers. Agrocorridors allow supplies to reach growing regions and encourage the development of post-farm industries, including processing, packaging, storage and distribution. They also encourage investment by farmers in their farm infrastructure and farming practices. For example, the PRA project in Peru, with heavy donor and public sector investment, enticed private sector artichoke-exporting companies to operate in corridors where they had previously been absent in order to facilitate communication and the movement of goods in the supply chain. The investment of these exporters led to externalities in the supply chain, including improved transport logistics, and input suppliers grew in number (FAO, 2014).

Agrocorridors *magnify the impact of public infrastructure investments* by helping to ensure that transportation corridors actually do have a catalytic effect on production and productivity. Agrocorridors can thus boost the overall economic returns for a country on its investment in infrastructure. By stimulating additional production, processing, value added, exports and employment, this in turn generates additional tax revenues in the form of sales, employment, value-added, income and corporate taxes, including multiplier effects from the initial impacts. This contributes to improving cost benefits of the agrocorridor project for national governments and also boosts their capacity to repay loans.

Agrocorridors *can potentially give a boost to industrialization* by increasing the scale and scope of production so that it achieves the necessary initial volume or the further economies of scale for industry to source from a region, and create input supply industries or agroprocessing and manufacturing. For example, the multinational Unilever, in working with SAGCOT in the United Republic of Tanzania, seeks to source 100 percent of its raw materials sustainably through its Rainforest Alliance in the region (Milder *et al*., 2012).

Agrocorridors *facilitate regional integration* by creating cross-border linkages, leading to a greater interest in trade, investment and transportation linkages (FAO, 2014). This trade and regional integration focus has led to interest in agrocorridors: the GMS and CAREC corridors are notable examples. According to Kuhlmann, Sechler and Guinan (2011, p. 6), "Development corridors not only enhance the ability of countries to trade regionally and internationally, they also present a way to equitably spread the benefits of trade, including greater access to economic opportunities and food, harnessing trade's potential as a lever of broad-based development". Agrocorridors often link landlocked countries with their coastal neighbours, encouraging multicountry regional economic integration, an important goal of policy-makers, from southern Africa to Southeast Asia.

Agrocorridor objectives may include *regional food security*. Corridors enable food to reach famine-affected areas more rapidly. They reduce the time, cost and logistical challenge of getting food out of surplus areas and into shortage areas,

thereby reducing risk. As noted in FAO (2014, p. 119), in the GMS, crops produced "in one corridor country [can] tackle unmet demand in a neighbouring country also connected to the corridor". Food security objectives are supported by increased production, together with production in more diverse regions, reducing overdependency on existing production zones. In addition, the ability of corridors to unlock untapped agricultural potential, open new land to cultivation and increase output means that more food is being produced along the corridor. This increase in production can potentially help countries with food shortages.

Agrocorridors also encourage *regional decentralization* that takes migration pressure away from crowded cities. Better agrocorridors encourage labour mobility, although this works both ways as people may leave as well as enter the less developed regions. By opening up new or potentially more productive farmland, more people will be encouraged to migrate from higher density to lower density regions. By enabling consumer goods to reach these regions, agrocorridors make it more attractive for people to settle there. Increased investment in non-farm activities will attract people seeking jobs. Lowering the cost of inputs and transportation to attractive markets increases the economic incentives for producers to locate there.

The *private agro-enterprise sector* also has a stake in ensuring growing supplies from diversified sources and regions. For example, with declining cocoa production in Brazil, chocolate manufacturers have long been anxious about the growing concentration of supply in West Africa, which increases their climatic and geopolitical risks in one region. At the same time, private sector providers of seeds, inputs, machinery and biotechnology are increasingly interested in agrocorridors.

BOX 2

How corridors can promote agriculture and growth in Africa

Africa enjoys a favourable ratio of land to people for agricultural production, but a number of factors have limited the success of creating a "green revolution" across the continent.

These factors include:

- land tenure issues that inhibit investment;
- poor connectivity between farmers and markets, which can be addressed by hard infrastructure (feeder roads) and soft infrastructure (mobile phones for price discovery and financial transfers); and
- underinvestment in supporting services, which can be addressed if corridors lead to greater investment and greater density of production, making it economically attractive to provide these services.

Corridors can help to resolve these issues. They are effective tools to connect ports and major cities with raw materials, which can foster better link percentages between farmers and markets. Corridors can also attract new cash flows, which would address underinvestment in African agriculture.

Source: authors' elaboration.

FIGURE 7
Potential benefits of agrocorridors (using BAGCI and SAGCOT examples)

For farmers	For BAGCI and SAGCOT agribusinesses	For governments
■ Reduced costs of agricultural inputs, improving farmers' profitability. ■ Reduced prices of goods consumed by local farmers, improving farmers' standard of living. ■ Increased income from selling agricultural products. ■ (Usually) easier access to finance and supporting services.	■ Reduced transportation costs of shipping inputs, which can encourage new investments in processing plants, input suppliers, etc. ■ Help connect agribusiness to new ports or cities. ■ Improved business-enabling environment. ■ Dedicated financial facilities and non-financial services targeting agribusiness firms (particularly those working with smallholder farmers). ■ Enhanced access to land. ■ Improved power and telecommunications.	■ Potentially positive impact on foreign exchange, either through exports or market-based import substitution. ■ Open up new regions to development. ■ Potentially positive income-distribution effects, although these must be managed (potentially negative impacts also possible). ■ Increased GDP. ■ Can increase the availability of domestic staples at competitive costs for the national population.

Source: authors' elaboration.

Growing demand for staple products in West Africa makes a compelling argument for expanded production in nearby zones, and these initiatives will be supported by the major international grain, oilseed and consumer products firms that see growth in these markets. In addition, the emphasis on biofuels and renewable sources of energy has led to agrocorridors specifically focused on this sector.[10]

If these are the objectives, what have been the actual impacts and benefits of agrocorridor projects to date? Many corridor initiatives are reporting positive results, while others are still in progress or even on the drawing board. Some early results are notable. For example, MDC has reported significant positive impacts since 2002 (Thomas, 2009). These include US$5 billion in private sector investments, an important stimulus for local and regional economies. The economic impacts of the PRA project in Peru have been promising, including significant growth in the artichoke market, and GMS and CAREC corridor programmes have led to improvements in infrastructure and regional integration (FAO, 2014).

Figure 7 outlines some of the key potential benefits of agrocorridors for farmers, agribusiness and governments. However, as will be discussed below, there are significant possible downsides, including environmental degradation, social tensions, dispossession, land grabbing and the creation of social conflict in the corridor regions.

[10] Biofuel corridor projects are sprouting up all across the United States of America. Just one example is the Bioenergy Corridor in Georgia: http://www.mariettaga.gov/ggtc/docs/Bioenergy_Corridor.pdf.

2.3 KEY ACTORS – THEIR ROLES AND OBJECTIVES

The FAO study (2014, pp. 39–41 and 55–56) analysed the types of champions, or catalysts, of corridor initiatives, who are usually but not always the major funder. Public-led corridors are supported by national governments, IFIs, bilateral donors and technical agencies working with host governments. However, there have also been private-led corridors, sometimes involving NGOs, and considered as "bottom-up" initiatives and typically less ambitious in scope and scale.

Beyond the catalytic actor and financial backer, corridors include a broad range of actors, whose active involvement and coordination are often critical to success. These actors include governments, IFIs, bilateral and multilateral development agencies, international companies, foundations, individual farmers, input suppliers, aggregators, informal traders, domestic agro-industries, storage providers, transporters and infrastructure providers. Each actor will have unique interests, motivations, incentives and reservations about corridors. The success and impact of the corridor approach will depend largely on the interaction of the actors involved.

In fact, these actors are not neatly segmented since most corridors involve some kind of multistakeholder involvement. Indeed, multistakeholder corridor initiatives are on the rise, and involve public-private partnerships (PPPs). SAGCOT, for example, is one of the most widely known multistakeholder initiatives (FAO, 2014; Milder *et al*., 2012).

The FAO study (2014) analysed types of *public-private collaboration* in various corridor initiatives. In the better known PPPs, the government cofinances, provides guarantees or gives legal rights to future revenue streams, while the private sector finances, constructs and/or implements the infrastructure project. Rather than being considered to be an exhaustive presentation, the PPPs described in this book should be seen as an invitation to develop other types of PPP and recognize those that do not closely conform to previous patterns. Types of PPP are shown in Table 3.

TABLE 3
Types of public–private collaboration present in corridor programmes

Type	Actors	Description
Agribusiness PPP	Agribusiness firms and farmer organizations	A collaboration (usually informal) facilitated by corridor centres between an agribusiness firm and farmers, e.g. a partnership built around a contract farming arrangement
Infrastructure PPP	Government/lead corridor convener + private company from the transport, energy or construction sectors, etc.	Public-private collaboration for co-financing, building and managing corridor infrastructures and facilities, such as highways, ports, markets and warehouses
PPPs for implementing soft corridor interventions	Government/lead corridor convener + private companies, universities, research centres, etc.	Public-private collaboration for co-financing and implementing soft corridor interventions such as corridor-bound market information systems or agricultural insurance products
Market-based PPP concerning the corridor centres	Government/lead corridor convener + private companies interested in local/agricultural development	Public-private collaboration for co-funding and managing the operation of a corridor centre and implementation of its strategy

Source: FAO, 2014.

National, provincial and district governments

The government typically sets the infrastructure and sectoral priorities for corridor projects and then arranges financing to implement them either through its own resources or through PPPs, IFIs and donor agencies. In cases of multicountry corridors, the government signs the corresponding international treaties and makes the legal, policy and financial commitments. Successful PPPs take place in an environment where government commitments, policies and rules of the game are trusted to be relatively stable (Puentes and Sabol, 2014).

Corridor initiatives are, in some cases, massive and complex initiatives. Indonesia's Masterplan for Acceleration and Expansion of Indonesia's Economic Development (MP3EI), a mega-project with an allocation of almost US$400 billion (Ellis *et al*., 2012), shows the magnitude that economic corridor approaches can take (see also Chapter 9). SAGCOT in the United Republic of Tanzania, China's national masterplan for agrifood chain logistics with the Rand Corporation and ADB, and the Central American Logistics Beam supported by the World Bank and IFC, are other mega-examples.

In its role of regulator, the government removes barriers to movement of goods – agricultural and others – and streamlines or eliminates regulations that needlessly inhibit investments. As a facilitator and catalyst, the government may provide fiscal and non-fiscal incentives, and promote the participation of the private sector and other key stakeholders in the implementation of the corridor blueprint. In some cases, such as the corridor components of MP3EI, the Indonesian Government's plan for promoting growth, the government can spearhead entire initiatives, but prime conditions for such examples are not the norm.[11] The central government is largely responsible for deregulating certain rules and procedures that hold back investments and for allocating a central budget for implementing major infrastructure works and executing sectorwide activities. Provincial and regional governments, on the other hand, are often responsible for the development of key sectors and the intra-island or intracorridor infrastructure, or at least its maintenance.

Global private sector/corporations

One of the key goals of agrocorridors is to mobilize robust levels of private investment. Therefore, it is important to identify the likely source of such investment and then create the policies and business environment conducive to the investment. This might include improving "Doing Business" regulations; ensuring commercial redress; providing energy, water and other basic services; and seeing to other general aspects of the microeconomic business environment. Agrocorridors can thus serve as a catalyst for agro-industrial development.

Private sector involvement in agrocorridors comes from many and diverse actors. These include commercial agricultural producers; agro-industry; agrotechnology providers; suppliers of fertilizers, agricultural machinery and other inputs; engineering and construction companies; and many other supporting industries. Firms may also seek to interact in a collaborative way with existing institutions for agricultural

[11] Indonesia has allocated almost US$400 billion to its corridor programme (Ellis *et al*., 2012).

research, education, extension, farm credit and crop insurance schemes and policies that provide security for firms doing business. Agrocorridors have found strong support from large global agribusiness firms such as Unilever, Monsanto and Syngenta, and many other partnerships can be developed under corridor schemes (WEF, 2013). Planners of agrocorridors would therefore do well to understand the motivations of private sector agro-industrial investors to help ensure that resulting investments are desirable and provide inputs and markets for producers. They can also introduce safeguards and incentives so that the investments made are sustainable both socially and environmentally.

National private sector

Agrocorridors can give a strong boost to national agro-industrial development and to the local private agribusiness sector in the regions and countries where these are being developed. Key industry segments include agrodealers, food processors, supermarkets, support service institutions and financing companies. Businesses can benefit from business expansion, improved raw material supply, new infrastructure and, in some cases, better access to credit where access to finance components features prominently as an agrocorridor project component.

Improved business environment (e.g. "Doing Business" regulations) will also help the national agribusiness sector. IFC, affiliated with the World Bank, has recently gone beyond overall "Doing Business" reports and initiatives to focus on sector-specific "doing business" efforts. Agribusiness is a priority sector that it is currently focusing on through the "Enabling the business of agriculture" initiative (IFC, 2015).

Impacts depend on the corridors concerned and can sometimes benefit the private sector of more than one country. South African supermarket chains saw major opportunities to source food products from Mozambique and acted as a promoter for the corridor that would connect Mozambique's production areas to South Africa (AgDevCo/InfraCo, 2010). National business associations and agricultural sector associations can be powerful allies in corridor schemes.

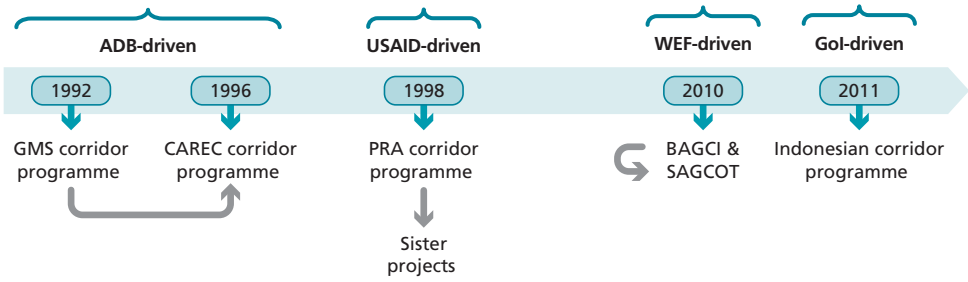
International financial institutions, and bilateral and multilateral development agencies

IFIs such as the World Bank, regional development banks, bilateral donors and international development agencies often provide funding and technical assistance for the planning and implementation of agrocorridor projects. The agricultural sector is back in vogue again with several current initiatives, especially in Africa under the USAID Feed the Future initiative.

The FAO study (2014), in its analysis of six agrocorridors, presented a timeline of these initiatives and their major catalysts and financial drivers, as shown in Figure 8. Five of the initiatives were substantially instigated by international financial or donor institutions during the 20–year period from 1992 to 2011.

The role of international donors has been overshadowed by their success in promoting private capital and PPPs, but their presence is often essential in providing seed funding and the halo effect that comes from internationally sponsored initiatives. Initiatives sponsored by foreign assistance of the United States of America or co-financed by the IFC focus are usually designed with a strong role for the private sector.

FIGURE 8
Timeline of selected corridor programmes



Source: FAO, 2014.

Other stakeholders

Other stakeholders and interest groups are farmer associations, universities and NGOs, including environmental and community advocacy NGOs, which may raise important questions about corridor projects. The global network of contractors, NGOs and implementers often provides needed management and technical expertise with NGOs helping to promote community linkages.

2.4 FROM A TRANSPORT CORRIDOR TO AN AGROCORRIDOR: "HARD" AND "SOFT" COMPONENTS

As mentioned earlier, economic corridors are often the result of the evolution of basic transport corridors, which focus on the improvement of transport infrastructure and services.[12] Effective economic corridors, including those designed to develop the agricultural sector, go beyond connective efforts – they are far more complex and need to encompass a smart "mix of soft and hard instruments" (FAO, 2014, p. 80).

Definition and examples of hard and soft agrocorridor components

The hard component of a generic economic corridor includes infrastructural elements such as waterway improvements, roads, railways, ports, airports, and energy and telecommunication networks. It also includes multimodal and transmodal systems. The soft components deal with policy and regulatory frameworks that enable investments in infrastructure and specific sectors, for example by improving governance, developing human resources, fostering an enabling business environment and strengthening relevant organizations. These hard and soft elements combine to: (i) facilitate business operations along the corridor, reducing the costs of doing business and providing incentives for new investment; and (ii) create conditions for the development of inclusive economic activities along the corridor.

[12] This section is based on FAO, 2014, pp. 80–123.

Hardware investment to remove infrastructure bottlenecks are generally the main budget elements of economic corridor initiatives. The CAREC programme, for instance, allocated 79 percent of its total budget to the development of roads and railways, and to the upgrading of ports and border crossings. Similarly, GMS gave priority to infrastructural projects, and particularly to road networks improvement, spending US$10 billion (by the end of 2012), corresponding to 63 percent of the total budget of the corridor programme. MP3EI supported infrastructural development projects (e.g. roads, seaports, airports, and power and water infrastructure) with the aim of facilitating agro-industrial growth and improving connectivity within the corridor (intracorridor/island connectivity) and, in particular, between exiting economic growth centres, between corridors and with other countries in the region. The PRA project also supported the development of road and energy networks, and the upgrade of a port using an infrastructure PPP scheme. Likewise, BAGC and the SAGCOT initiative comprised the development of both Beira and Dar es Salaam ports, respectively. Developing gateways such as ports and airports is critical for the performance of agrocorridors, as seen in Box 3.

Agrocorridors, in addition, may require the *development of agriculturally specific infrastructure* such as dams, irrigation, market centres, warehouses and all the necessary facilities to promote and stimulate inclusive agriculturally related activities along the corridor. For example, the GMS programme envisaged the development of agricultural collection points, markets and storage infrastructure. The provision of last-mile infrastructure, including farm-to-market roads and energy and communication infrastructure, is often crucial in these corridors since it integrates rural and remote areas in the economic activities of the corridor. For example, both the BAGC and SAGCOT programmes support the development of last-mile infrastructure such as feeder roads, power networks and irrigation infrastructure. Similarly, the GMS corridor programme has developed wholesale markets, warehouses and logistics platforms.

BOX 3

The important role of gateways in agrocorridors

Improving intracorridor connectivity and logistics is essential for good functioning of agrocorridors. Perishability of agricultural products drives agrocorridor promoters to focus on "last-mile" infrastructure to facilitate agricultural products flows and trade within the corridor. However, facilitating agricultural trade means also supporting export-oriented value chains and subsectors. In this regard, it is crucial to develop gateways to move agricultural products to regional and international markets, and to ensure that these gateways are well connected with production areas within the corridor. For example, the ports of Dar es Salaam, in the United Republic of Tanzania, and Callao, in Peru, represent the main international gateways for agricultural goods produced in SAGCOT and PRA corridors, respectively.

Source: FAO, 2014.

Innovation in transportation and logistics can be important for the performance of economic corridors – not just physical investment in roads or rail, for example, but also innovation in transport equipment and in management. One such example is the development of multimodal transport for exports of fresh fruit from West Africa, combining truck, rail and sea shipment to Europe of refrigerated containers from landlocked countries such as Mali and Burkina Faso. This revolution in transport corridors has completely changed the size of the markets for products such as mangoes or papayas originating from these countries. A recent development is the opening of a corridor through the Sahara, permitting the transportation of fresh tropical fruit from Sahelian countries to Morocco, and the simultaneous development of shipments of citrus from Morocco to the same Sahelian countries, benefiting from the return freight.

The effectiveness of economic corridors also depends on *soft components* that complement and take forward infrastructural interventions by, for instance, developing support institutions and building the capacities of key corridor stakeholders. Soft interventions include, among others, the promotion and development of policies, regulations and legislative frameworks conducive to a competitive business environment; improvement and dissemination of business development services (BDS); trade facilitation; initiatives promoting regional integration; implementation of human capital development; and organizational strengthening.

Soft interventions can be designed to promote economic development in general, or to target specific sectors, e.g. agriculture. In the latter case, soft interventions include policies and strategies dealing *inter alia* with land use, quality standards, agro-industrial development, food security and public-private collaboration; provision of BDS targeting agro-enterprises; strengthening of agrocorridor institutions; skills development programmes; and agribusiness investment promotion measures.

A particularly important category of soft intervention in agrocorridor initiatives is the brokerage of inclusive collaborative arrangements between the farmer organizations and agro-enterprises present. An example is the promotion of legal, regulatory and policy frameworks that enable contract farming. For instance, contract farming initiatives have been launched as part of the GMS corridor programme. BAGCI provided incentives to companies that invested in clusters with high agricultural potential so long as they adopted inclusive business models that ensure a win-win relationship with smallholder producers.

Soft interventions can be mainstreamed in public programmes or can be rolled out by dedicated ad hoc corridor institutions. These include corridor centres and financial facilities. Corridor centres are established to coordinate corridor activities and provide agribusiness services to farmers, agro-enterprises and other clients of the corridor. BAGCI set up two centres to provide agribusiness support services to investors, farmers and other users. Similarly, the PRA programme set up a centre in each corridor to provide BDSs to farmers and firms.

Dedicated financial facilities are increasingly being designed to provide financial support to corridor farmers and agribusiness. The BAGCI blueprint, for example, envisioned three different types of financial facilities, including a working capital facility to support agricultural production; a social venture capital facility to promote pioneer investments; and a patient capital facility for agriculture-supporting infrastructure. The above-mentioned corridor centres sometimes oversee these

facilities, as in the case of the SAGCOT Catalytic Fund, which is supervised by the SAGCOT Centre, as shown in Box 4. (See also the SAGCOT case study in section 2.8.)

With an adequate mix of hard and soft components, it is possible to implement subprojects that help to achieve the corridor objectives in a more comprehensive and strategic way. One such subproject concerns the promotion of agrifood chains through the launch of value chain development initiatives. These initiatives start with the selection of value chains that have comparative advantages in the corridor, and continue with the implementation of hard and soft interventions to overcome existing constraints in the targeted value chains and improve their performance at all levels. This can be done, for instance, through the improvement of market infrastructure and logistics (hard component), and through the promotion of value chain finance schemes (soft component). The promotion of contract farming and inclusive business models can also be part of broader value chain subprojects detailed in the corridor blueprint or added at a later stage.

The implementation of area development plans is another example of soft intervention. Much broader than value chain development initiatives, these plans aim at developing rural and remote areas and strengthening their linkages to the rest

BOX 4

The SAGCOT Centre and Catalytic Fund Company

The SAGCOT Centre was established to assist investors with all aspects of starting up a business in this Tanzanian corridor, including site identification and leasing, social and environmental safeguards, company registration and incentives. It also manages and expands the corridor partnership, coordinating and mobilizing investment in the corridor. It monitors the business environment within the corridor, identifying enabling environment issues and helping to address them. The Centre devotes its efforts to foster inclusion, as evidenced by its recent involvement in a partnership with the Agriculture Council of Tanzania (ACT), the Agricultural Non-State Actors Forum and the Tanzania Horticulture Association, with a view to ensure inclusiveness of investments and engage and benefit smallholder farmers in the corridor. This partnership tries to facilitate the engagement of civil society and farmers in SAGCOT initiatives, mobilize and monitor inclusive investments in agriculture and support the improvement of policy reforms that promote and encourage inclusive agricultural growth.

In addition, the SAGCOT Centre is charged with supporting the SAGCOT Catalytic Fund Company, a fund aiming at securing a critical mass of investments and investors, developing and expanding commercially sustainable agribusinesses, reducing commercial investment risk and supporting projects through their initial startup and development. The Fund comprises a Social Venture Capital Fund targeting small and young agro-enterprises, and a matching grant facility for bigger agribusiness companies that want to develop supply chains encompassing smallholder farmers.

Sources: SAGCOT, 2012a and 2012b; allAfrica, 2014.

of the economy through last-mile infrastructure development (hardware), investment promotion (hardware + software) and inclusive business models promotion (software), etc.

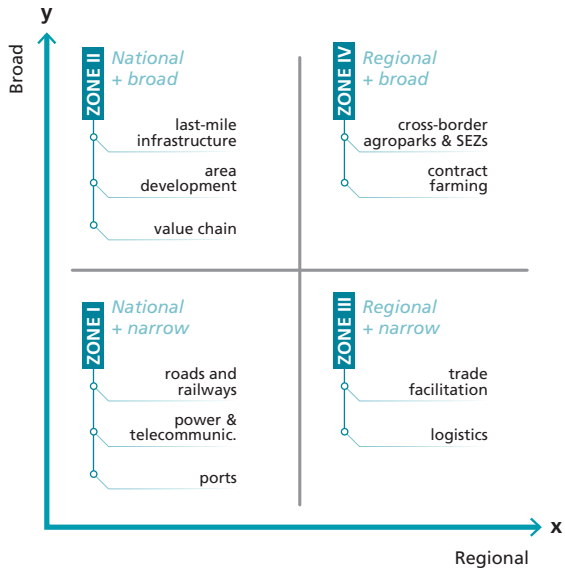
Other SDIs such as SEZs, clusters and agro-industrial parks can be promoted as subprojects of a corridor programme. The creation of agrobased clusters and SEZs is one of the pillars of the MP3EI corridor programme in Indonesia. Similarly, BAGCI and SAGCOT envisaged the promotion and development of competitive agricultural clusters. These initiatives aim to catalyse investment, promoting the creation of, or exploiting existing, economies of scale in areas where products or industries with comparative and competitive advantages exist.

Hard and soft interventions: finding the right balance

The right mix of interventions depends on several factors, including the extent of the territory where the corridor is expected to have an impact. For instance, a national corridor that is expected to develop broadly will need improvement in last-mile infrastructure to connect the agricultural hinterland, as well as area development plans or value chain development initiatives to help develop surrounding areas and integrating chain actors in the wide territory. On the other hand, a narrow national corridor will focus mainly on developing transport infrastructure and improving logistics. Figure 9 shows various corridor activities according to the broadness and scope of the corridor project.

These four paths can be viewed through either a static or dynamic lens. In the first case, they represent four corridor projects with different objectives in terms

FIGURE 9
Corridor interventions according to broadness and scope of the project



Source: FAO, 2014.

of width, territorial scope and impact. In the second, they can be seen as stages of development of the same corridor.

From this viewpoint, Zone I represents the starting phase of a corridor project implementation in which the priority is to set up new and/or improve existing infrastructure to improve connectivity and reduce transport costs. Given the relatively higher importance of the hard component, this phase requires considerable financial resources. For this reason, public-private collaboration is needed. In the PRA and GMS corridors, for instance, infrastructure PPP schemes were created to fund the development of transport and other infrastructure; the African corridors also used PPPs to finance infrastructure development.

Zone I seems to be characterized especially by high-impact infrastructure development or improvements, through the construction or improvement of highways, ports, roads and railways, as well as telecommunication and energy networks. The corridor can then move either to Zone II or to Zone III.

Projects in Zone II focus on expanding corridor interventions to include value chain development initiatives, area development plans, and the development of clusters, SEZs and agroparks that are necessary to exploit territorial advantages and stimulate economic growth. Infrastructural development is still fundamental in this zone, but rather focuses on last-mile infrastructure (including feeder roads, irrigation and small dams), which is crucial to integrate a broader territory in the local economy.

BOX 5

Hard and soft components: which comes first? The case of Peru

Five of the six corridors analysed in the FAO study (2014) gave priority to hardware initiatives, providing first improvements to the existing infrastructure or creating a new one, and focusing on soft interventions only in a second phase (from Zone I to Zone II/III).

Peru and its PRA corridor initiative seems to be the exception. In this particular case, soft operations preceded infrastructure development. The PRA project started providing BDS in the targeted corridors to support business growth. However, the corridor promoters soon realized that many actors were incurring high economic costs and losses because of the poor existing transport and energy infrastructure. This made hard interventions necessary to remove these infrastructural constraints. The approach was to promote public and private collaboration to develop key corridor infrastructure. With the support of USAID, an infrastructure PPP scheme was developed and launched, resulting in the construction of three highways, expansion of Callao port and development of four rural electrical systems in several economic corridors.

This example shows that there is no fixed sequencing for corridor development. However, it is important to consider that: (i) infrastructure development requires accurate feasibility analysis and planning *before* the project is implemented; (ii) hard interventions can come second, but at the expense of corridor businesses that will face higher transaction costs in the meantime; and (iii) economic corridors work better when both hard and soft components are taken into account and complement each other.

Source: FAO, 2014.

The decision to move to Zone III, on the other hand, signifies an intention to integrate the national corridor in a regional programme. Here, the objective is to promote regional trade by working on trade facilitation and logistics, and improving regional coordination and planning. Although improving regional physical connectivity (hardware) is critical, soft interventions such as enhancing border policies and trade and transport facilitations are also of primary importance. For example, the GMS corridor programme established a Cross-Border Transport Agreement to harmonize customs procedures.

In Zone IV there is a regional corridor that deals with several sectors, such as agriculture. A higher degree of sectoral coordination among the countries involved is required. Hard-soft mixed initiatives promoted under this category are similar to those promoted under Zone II, with the difference that here they are planned and implemented *cross-border*. For example, joint interregional plans for contract farming initiatives, SEZs, clusters and agroparks are typical of Zone IV regional corridors. Cases in point are the cross-border clusters, SEZs and contract farming initiatives of the GMS corridor programme. Other soft interventions typical of Zone IV corridors include the promotion of agricultural trade; regional cooperation in research and development on agriculture; environmental and climate friendly agricultural initiatives; human resource development; the creation of regional corridor institutions and mechanisms involving public and private supporters; and the development of cross-border logistics.

A 2014 World Bank study on rural connectivity in Viet Nam and the Philippines examined the issue of connectivity at remote ends of economic corridors – in Mindanao and in disadvantaged communities in the Vietnamese highlands (World Bank [Southeast Asia], 2014). The conclusions identify barriers to access to infrastructure and services that could connect the communities to the corridors. Lack of competition to provide services that promote connectivity is identified as a major contributor to high connectivity costs and related quality issues. Improved value chain-based services and supportive policies are suggested as actions that would improve connectivity – and hence linkage to downstream agro-industrial markets. Agro-industrial investments that actively work to improve supply chain connectivity will benefit from greater access to agricultural inputs.

2.5 FRAMEWORK FOR AGRICULTURAL GROWTH CORRIDORS: PLANNING, IMPLEMENTATION AND INVESTMENT

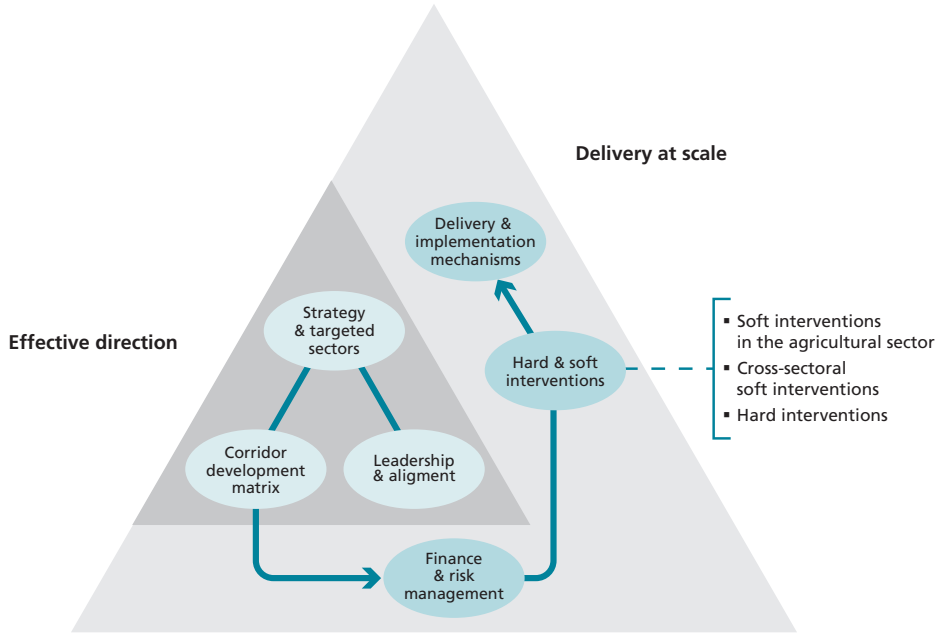
Framework for design and implementation of agrocorridor initiatives

This framework can help public and private leaders think about agrocorridor initiatives with the understanding that these initiatives depend greatly on local circumstances and that planning is far more nuanced, detailed and complex than can be captured here. Figure 10 illustrates this complexity by showing how the intent of corridor development ("Effective direction") is only the first step and is nested in a larger web of issues that need to be addressed to achieve large-scale impact ("Delivery at scale").

Phase I. Corridor selection

Select high-potential agrocorridors. Prior to investing in major cost-benefit studies, it is important to determine whether a proposed corridor has the prerequisites

FIGURE 10
Framework for design and implementation of agrocorridor initiatives



Source: FAO, 2014.

that justify investments in an agrocorridor. The basics of this prefeasibility study include assessing the orders of magnitude of the agricultural production likely to be forthcoming in the areas affected by the agrocorridors. The second major element is to assess the impacts of lower costs of inputs, lower costs of farm-to-market transportation, potential for mobilizing agro-enterprise investment and the likely costs of putting in not only the transportation infrastructure but the necessary basic services (both social and commercial) without which such investment would not be likely to emerge. At this stage, it is also necessary to assess where the catalytic change agents are on board, including the national government and financial backers of the corridor.

Phase II. Feasibility and planning

Determine the feasibility and sustainability of the agrocorridor. Phase 1 will have provided a "back of the envelope" estimate of the "order of magnitude" potential that would justify the mobilization of the substantial resources involved in a full feasibility study. This study would normally be underwritten by a national government, IFI or major donor agency. Such a study looks at the agro-enterprise clusters already existing in the country and the extent to which the corridor production will be buoyed by backward and forward linkages to them. Benefits need to be scrutinized for overoptimism. The feasibility study would then also look at the costs,

taking into account the frequent underestimation of time and costs of infrastructure projects. The feasibility of mobilizing counterpart investment from the private sector also needs to be looked at carefully. Engineering obstacles and the local science related to soil conditions, water, climate, weather variability, current and future pests and other technical factors are perhaps the most manageable and easy to assess factors. Environmental impacts and assumptions regarding social issues such as land tenure, migration and response of local residents are often harder to assess with precision. An assessment of the business climate in the corridor is also required at this stage together with recommendations for its improvement.

Draft the agrocorridor master plan with stakeholders. The feasibility study, if positive, will then lead to the agrocorridor master plan, including investment blueprints and greenprints (plans for promoting sustainable agricultural growth) (FAO, 2014).[13] These plans should include input from stakeholders from the private sector, farming communities, policy-makers and others. The plan will settle on a basic strategy of either promoting cluster development or attracting anchor firms or star firms such as a vegetable oil processing plant that will provide a ready market for farmer expansion. This plan also requires a governance structure for the initiative that will be effective as well as inclusive. It can include a road map for stakeholders, meetings to present the benefits and iterative in-depth consultative sessions.[14] Key areas of focus will be strategies to ensure market linkages, access to finance and infrastructure development (e.g. main roads, gateways and last-mile infrastructure). The vision and goals need to be clearly articulated with the latter often including agricultural competitiveness, job creation, productivity growth, food safety, food security and the sustainability of the initiative. Attention to non-agricultural sectors such as potential impacts on tourism, mining and other sectors should be looked at if relevant. Rural areas often offer tourism prospects, including agritourism. The scaleability of the plan beyond its original scope should also be taken into account. The plan should present the governance structure, roles and responsibilities of all parties on whom the initiative depends for its success. The role of small farmers and SMEs needs to be considered carefully as does that of youth and women. The rights of communities in the region need to be upheld, especially against the possibility of dispossesion of land when land values start to increase.

Engage stakeholders for consensus on design and implementation. Key government officials, donor agencies, large-scale agribusiness investors, engineering and construction firms, farmer federations, local community leadership groups, environmental NGOs and the media – to name but a few stakeholders – need to be engaged early on in the design process to minimize unexpected obstacles and opposition later on down the road. While all these do not have to have a completely shared vision and each group will have different interests, it is important for there to be broad buy-in after a compelling articulation of the expected benefits. This often

[13] For more on investment greenprints, see Milder *et al*., 2012.
[14] The SAGCOT and BAGC corridors excelled at creating a shared vision among all their stakeholders (Jenkins, 2012).

happens through a series of workshops over a few months as plans are developed and finalized. Roles, expectations and responsibilities need to be made clear at this point. These can be formalized in memos of understanding with stakeholders. For international donors, it is especially important to foster the engagement and commitment of government. For initiatives led by the private sector it is vital to elicit commitment from the national government. Likewise, for initiatives led by the government or international donors it is essential to test the assumptions regarding private sector involvement and investment. Enlisting the support of representative farmer organizations is also very important. NGOs can be given a significant role in safeguarding environmental and social interests.

Mobilize donor agencies and international organizations to support the initiative not only financially but also technically, by providing training, facilitating SME finance, helping to leverage finance, conducting monitoring and evaluation (M&E) and playing many other key technical roles.

Phase III. Implementation of the agrocorridor master plan

Implementation is not just about building infrastructure along only the most efficient routes from an engineering perspective but also along those lines that will stimulate the most economic activity, including zigzags where necessary to connect key towns or producing regions. Planning for clustered economic activity in agriculture will require planning for energy, water, communications and other services. Sector-specific infrastructure may also need to be taken into consideration for cereals, oilseeds, biofuels, livestock, dairy and horticulture. Dairy and horticulture in particular require careful planning for cold chains and may involve village collection points and dairy chillers. Involving industries directly in the infrastructure planning and implementation process can help speed up the impacts on high-potential sectors while encouraging investment.

Mobilize private and public investment including, but not limited to, donors in special areas of their concern and priority. Investment mobilization is a key activity of the corridor centre investment agency or other specialized unit that is responsible for attracting investment. This will include timelines and budgets. The use of a project "dashboard" can help call attention to those sub-initiatives that are over budget and behind schedule. This includes tracking private investment mobilization versus the plan, while staying in close touch with potential investors. Implementation of contract grower schemes between many farmers and major agro-industries, where relevant, begins at this stage. Post-harvest, irrigation, agricultural input and market linkage initiatives, and farmer and agro-enterprise finance schemes all become relevant here. Working with investment promotion agencies, especially investment promotion groups in Ministries of Agriculture, can facilitate this phase.

Build capacity and provide social services. As the infrastructure is built, it is also important to build up human capacity, including training farmers in the region to be able to take advantage of new opportunities that may open up. Provision of social services will be important for attracting new producers to the region in some cases and to making existing population groups productive.

Facilitate agricultural value chain development including business development services. As the agrocorridor initiative progresses, it is important to monitor the development of the agricultural value chain and the services that encourage it, such as finance, storage, warehousing, insurance, cold storage, packing providers and others. Financial facilities dedicated to promoting growth along the corridor can facilitate this development. Corridor management centres can help with monitoring development by improving stakeholder communication, coordinating service delivery and acting as a communication hub (FAO, 2014).

Phase IV. Monitoring implementation and evaluating impacts

M&E should include geographic information system (GIS) or spatial data, professional monitoring organizations and personnel, and the full autonomy of the monitoring body. Timely data will draw attention to bottlenecks. M&E may call attention to the need for greater training of farmers, or to financial bottlenecks, other specific issues or problems including social and environmental issues. Identifying risks will lead to better ongoing management and measurement of these risks. Lessons learned and feedback loops into the implementation process are a key element of the M&E process.

FIGURE 11
Phases of agrocorridor development

Key actions and considerations

Phase I

Selecting high-potential agrocorridors
- Are change agents in support?
- How much agricultural production could the corridor unlock?
- What will be the other key impacts of the corridor?

Phase II

Draft agrocorridor masterplan and workshop with stakeholders
Determine the project's economic and social cost-benefit ratio with regard to:
- commercial feasibility;
- economic feasibility;
- environmental feasibility;
- logistical feasibility;
- organizational feasibility.

Phase III

Investment mobilization
- Mobilize donor agencies and international organizations
- Mobilize private investment

Capacity building
- Farmer extension
- Localized workforce development

Provision of specialized agricultural infrastructure
- Infrastructure includes warehouses, cold chains, etc.

Provision of social services
- Services include health, education, water and sanitation services

Provision of agriculture value chain services
- Services related to packaging, insurance, logistics, inputs and market linkages

Phase IV

Track progress through qualified and unbiased M&E

Source: authors' elaboration.

This rudimentary framework should be seen as a beginning to stimulate more nuanced checklists and frameworks in the future. Figure 11 helps to visualize some of the key actions and considerations throughout the various phases of agrocorridor development.

2.6 CHALLENGES AND SOLUTIONS

As a relatively recent area of focus, lessons learned, challenges and solutions are still emerging. Nevertheless, clear challenges need to be addressed, which are presented below. Figure 12 outlines the main criteria for successful agrocorridors and includes examples of successful practices.

Successful agrocorridor development involves meeting a number of challenges. The first is in *selecting the appropriate region*. There are obvious political interests that come into play when it comes to corridor selection, so it is important to have neutral analysts involved. Selecting the appropriate region requires a comprehensive and realistic cost-benefit analysis. It also means conducting a separate risk analysis that looks at unforeseen environmental and social consequences.

A second challenge is that of *coordinating different ministries, sometimes between or among countries.* Institutional coordination is an important feature of

FIGURE 12
Criteria for successful agrocorridors

Social impact	How many people's productivity have been increased as a result of the agrocorridor? Is the project socially inclusive? Does it help the most vulnerable members of the agriculture industry? What are the impacts on land tenure?
	Example. PRA helped to increase the productivity and incomes of over 42 000 small producers and firms. Approximately 43 percent of these earned less than US$1 per day and 37 percent were women.
Economic impact	Does the corridor increase the production and value of agriculture exports? Does it lead to competitive import substitution? Do the increases in value resulting from the agrocorridor greatly exceed investment (high return on investment [ROI])?
	Example. Farmers living along the East-West Economic Corridor saw their incomes rise by 20 percent from increased sales and prices after the road's completion.
Environmental impact	What is the impact on the natural environment? For example, what is the impact on the long-term fertility of soil or deforestation?
	Example. SAGCOT's agricultural green growth strategy will save nearly 30 million tonnes of net CO_2-equivalent between 2010 and 2030, with more than 90 percent coming from avoided deforestation.
Impact on policy and institutions	Does the project create an enabling environment for farmers, investors and other businesses? Does it improve access to land markets?
	Example. BAGCI's strategy includes partnering with other stakeholders to ease policy barriers, including making land more accessible to investors. BAGCI also supported the revision of seed and fertilizer regulations.

Source: examples from FAO, 2014.

successful corridors, but can be difficult, especially if different institutions are not familiar with working with one another or insert their political agendas into the corridor development process. In the case of regional corridors, bodies such as the Association of Southeast Asian Nations (ASEAN) and CAREC can facilitate institutional coordination. Indeed, many of these regional bodies have experience in cross-border infrastructure projects, including corridors.

A third challenge lies in *mobilizing adequate public sector, third-party, donor* or *IFI capital for infrastructure investments*. Adequate investment is a necessity in successful agrocorridor development. This includes ancillary private investments that make the agrocorridor initiative a success or a failure.

Another challenge is in *ensuring last-mile infrastructure*, including feeder roads and access to water, electricity and communications. Such infrastructure is an integral component of successful construction and for promoting growth along the corridor. The complexity of last-mile infrastructure emphasizes the need for robust coordination and communication at each stage of corridor development.

A further important challenge is to guarantee that the *goals for environmental sustainability, social inclusion and gender equity are taken into account in both design and implementation* (FAO, 2014, pp.135–140). Such environmental and social impacts are a primary component of agrocorridors, especially those focused on development. It may prove fruitful to have a team dedicated to assessing these impacts at every stage of corridor planning, construction and operation.

Finally, a last challenge is to *ensure continued market access*, notably in the case of agrocorridors involving more than one country. Regional bodies such as ASEAN, which collaborates with the GMS corridor programme, can help here.

2.7 TWO CASES: AGROCORRIDOR EXPERIENCES IN DEVELOPING COUNTRIES

This section consists of a brief overview of two cases that are presented to embody the lessons learned, challenges encountered and solutions found when designing and implementing agrocorridor initiatives. These cases are the GMS corridor programme and the SAGCOT initiative, which have already been mentioned throughout this chapter.

Greater Mekong Subregion corridor case study

Agro-industrial growth opportunities generated through regional trade corridors in South Asia

Who benefits most and least from multicountry regional corridors? What are the likely impacts of regional corridors on the structure of agro-industrial sectors? What institutional structures foster greater regional cooperation? This case considers these questions by exploring the origins, progress, successes and challenges of the GMS Economic Cooperation Program (GMS programme) with particular emphasis on the role of agro-industry.

GMS is a regional economic cooperation initiative that spans six countries: Cambodia, Lao PDR, Myanmar, China (Yunnan province and Guangxi Zhuang Autonomous Region), Thailand and Viet Nam (ADB, 2014b). GMS is expansive, covering 2.6 million km2 and a combined population of 326 million (ADB, 2012b). The region encompasses ancient trade routes established more than 1 200 years ago

by Chinese tea merchants along the Mekong River delta that over time have been constrained by deteriorating and lack of transport infrastructure (ADB, 2014b). Over the past 20 years, GMS countries have collaborated to strengthen regional infrastructure and trade linkages in an effort to reduce poverty and strengthen the region's economy. Regional integration will help to insulate these countries against demand shocks originating from developed countries where they send the majority of exports (ADB, 2011b).

The GMS programme has worked as a forum for regional authorities to prioritize subregional projects in transport, energy, telecommunications, environment, human resource development, tourism, trade, private sector investment and agriculture (ADB, 2012b). Spearheaded by ADB and benefiting from unwavering commitment and cooperation by member countries, the GMS programme targets development along nine corridors incorporating road, rail and waterways. Of these, three are considered the primary corridors in the region, as seen in Figure 3 (ADB, 2012b):

- *North-South Economic Corridor*, with its three subcorridors: Kunming-Bangkok via the Lao PDR or Myanmar; Kunming-Ha Noi-Hai Phong; and Nanning-Ha Noi. The corridor is virtually complete, except for a bridge between the Lao PDR and Thailand, which is under construction.
- *East-West Economic Corridor*, the only direct and continuous land route across mainland Southeast Asia.
- *Southern Economic Corridor*, which runs through southern Thailand, Cambodia and southern Viet Nam (linking Bangkok to Phnom Penh, and then to Ho Chi Minh City).

The GMS programme is one of several regional cooperation agreements. Others include ASEAN, the Ayeyawadi-Chao Phraya-Mekong Economic Strategy (ACMECS) and various bilateral trade and investment agreements. These agreements are complementary, rather than competitive, whereby the GMS programme provides an umbrella framework for such cooperation. It is regarded as the most high-profile and successful example of regional coordination, facilitating the investment of significant resources in the corridors, mostly in support of transportation construction projects including rail, roads, air and waterways (Guttal, 2006). Policy reform agendas focused on easing trade facilitation across borders are another priority of GMS cooperation. These assume a lower profile because of fewer investment dollars at play. As of December 2014, project funding for the GMS programme totalled US$16.8 billion. Development partners have financed a third of this total. Member countries and private companies have contributed the remaining two-thirds of project funding (ADB, 2014a).

Origins: a donor-sponsored corridor initiative grew wings after the Asian financial crisis

The GMS programme was launched in 1992 when ADB, over the course of two years, consulted member countries to identify areas of collaboration for the programme. From 1994 to 1997, ADB undertook a number of detailed sector studies and feasibility studies for prioritized infrastructure components. Infrastructure projects began in 1998 through 2001. The 1997 Asian financial crisis served as a turning-point for the initiative, strengthening commitment from member countries

to develop the subregion as a centre for economic growth. Key development milestones of the GMS programme over the past 30 years are captured in Box 6.

The progress that has taken place since 1992 reflects an evolution of the concept of corridors from basic transport connectivity to economic corridors, with member countries agreeing to incremental steps to elaborate cooperation and deepen economic ties. ADB delineates the GMS corridor evolution in five stages (see Figure 13). The progression from transport to economic corridor does not directly match the taxonomy used by FAO in the 2014 study (transport, logistics, trade, economics and growth), but parallels similar development concepts as the corridors evolve.

ADB (2014b, p. 64) describes this evolution in the following manner: "At the core of this model is the development of transboundary roads between major economic centres. These roads are aligned through remote and impoverished areas to establish connectivity with the economic hubs at the end-nodes and 'stepping stone' markets along the road. This is followed by corridor and sector plans laying out options for sector investments and further connectivity enhancements (e.g. feeder roads, rail, and river). Together they transform corridor roads into full-fledged economic corridors that provide new livelihood opportunities for previously marginalized popu-

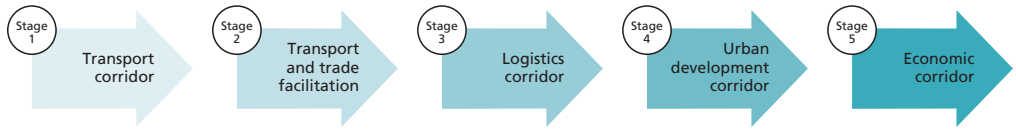
BOX 6

Key GMS programme milestones

1992 First GMS Ministerial Meeting convenes in Manila; endorses the Framework for GMS Cooperation.
1993 Second GMS Ministerial Meeting (Manila) endorses the terms of reference of various sector studies.
1994 ADB approves first GMS projects, Yunnan Expressway (China) and Theun Hinboun Hydropower Project (Lao PDR).
1994 Third GMS Ministerial Meeting is held in Ha Noi, the first in a GMS country.
1995 GMS Ministers agree on institutional arrangements in Yangon meeting.
1997 Asian financial crisis
1998 Eighth GMS Ministerial Meeting endorses concept of economic corridors to stimulate growth.
1999 Cross-Border Transport Agreement is signed by three countries – Lao PDR, Thailand and Viet Nam.
2000 GMS Business Forum is established.
2001 Tenth GMS Ministerial Meeting, in Yangon, includes agriculture as another sector of GMS cooperation.
2007 GMS Agriculture Ministers endorse the Core Agriculture Support Program 2006–2010.
2011 The Fourth GMS Summit (Nay Pyi Taw) endorses new GMS Strategic Framework 2012–2022 and new sector programmes (tourism, environment, agriculture).

Source: ADB, 2012b.

FIGURE 13
GMS corridor evolution phases



Source: ADB, 2014b.

lations." As the corridor concept has evolved, a growing series of sector-specific initiatives has gradually been incorporated under the GMS programme umbrella. Agricultural growth was added to the programme objectives in 2001.

Governance: dynamic organizational structure organized around incremental progress milestones

ADB serves as the Secretariat for the GMS programme, acting as lead development partner and coordinator. It holds great convening power because of its significant financial contributions to implementing the Programme as well as serving as a thought leader. It has taken careful steps over time to build momentum and organize around the priorities of country members.

The GMS programme hosts a number of different fora approximately every two years to facilitate communication, sharing of lessons learned, developing common objectives and reviewing progress. Each summit is organized around a theme, which results in a framework to be implemented within a limited time frame. Progress is monitored by National Coordinating Committees appointed in each country as well as sector-based working groups. For example, the 2014 Summit was organized around the theme of inclusive and sustainable development, which focused discussions on improving how the GMS programme works towards sustained, inclusive, broad-based and environmentally sustainable development (ADB, 2015). The summits produce a series of deliverables that describe progress, capture agreed priorities for ongoing efforts and synthesize information sharing (see Box 7).

BOX 7
Examples of key deliverables from 2014 Summit

- Implementation Plan for the GMS Regional Investment Framework that supports the GMS Strategic Framework by identifying the highest priority projects for implementation between 2014 and 2018.
- Initial review of the GMS Transport Sector Strategy (2006–2015) that assessed achievements in physical connectivity and identified remaining strategic priorities in the sector.
- Development Partners' Assistance Matrix for GMS.

Source: ADB, 2014b.

A number of sector-based working groups have formed as the GMS programme has built momentum and broadened its scope in an effort to dive deeper into regional priorities. These include the Working Group on Agriculture, the GMS Business Forum and Trade Facilitation Working Group. The Working Group on Agriculture is comprised of Ministers of Agriculture from each member country, but is coordinated by ADB, which maintains a dedicated Web site and conference proceedings.

Profile of the region's agro-industrial sector

GMS is one of the fastest growing regions in the world, although transformation of the agriculture sector into a commercial agro-industrial engine for growth has not yet taken place in GMS countries, apart from Thailand. The sector remains dominated by smallholder farmers and SMEs that are not well integrated in regional or global supply chains. SMEs make up at least 96 percent of all businesses in the region and provide 70 percent of employment (ADB, 2014b).

Agro-industry faces a number of constraints that limit competitiveness and growth in the sector. They include the following:

- *Supply chain constraints.* Access to quality inputs is often delayed or denied (financially or physically) to producers, thereby constraining their ability to secure high-quality raw materials. Furthermore, agro-industries face logistical challenges in transporting their products. Businesses in Lao PDR and Cambodia complain of limited availability of transport services, because of an aged and small trucking fleet in their countries (ADB, 2012a).
- *Limited access to finance.* Agro-industry in the region faces challenges in accessing both working and investment capital. The challenge is more acute for businesses in less developed member countries. Cambodian food businesses, for example, feel that their poor export quality and unreliable raw material supply are exacerbated by the lack of investment capital to expand milling facilities and modernize equipment, and by the lack of working capital to ensure a reliable supply of raw materials (ADB, 2012a).
- *Trade-related policies and procedures.* Businesses complain of complicated and time-consuming customs formalities, fees and inspections. Most GMS member countries have limited institutional capacity (including human capacity) to

TABLE 4
Doing Business ranking 2014

GMS member country	Doing Business ranking 2014 (of 189)
Thailand	26
Viet Nam	78
People's Republic of China	90
Cambodia	135
Lao PDR	148
Myanmar	177

Source: World Bank, 2015a.

undertake specialized sanitary and phytosanitary verification procedures (ADB, 2012a). Customs delays add costs to doing business and ultimately impact the competitiveness of the region. Specialized technical assistance and investment in physical infrastructure (e.g. laboratories and quarantine facilities) are needed to improve these capacities.

- *Poor business-enabling environment.* Among the corridor countries, Cambodia, Lao PDR and Myanmar perform poorly in the World Bank's Doing Business rankings, with China and Viet Nam performing significantly better. Thailand performs well, reflecting its agribusiness leadership in the region. Standards of public and corporate governance within the region remain low by international standards (ADB, 2011a). Poor enabling environments can be deterrents to private investment, particularly foreign direct investment (FDI).

Despite these weaknesses, the cornerstone of GMS regional cooperation has improved trade facilitation through upgrades to the transportation network, connectivity between major economic centres, and harmonization and streamlining of customs procedures to improve the movement of goods in and out of countries. Efforts over the past 20 years have resulted in growth in intraregional trade by 25.5 percent between 2000 and 2007 (ADB, 2011a). However, growth in intraregional agricultural trade has underperformed with regard to other sectors, and the region is

BOX 8
Intraregional trade dynamics

- China makes up the majority of trade flows within the region and has contributed to almost 85 percent of growth in trade.
- Intra-GMS5 [Cambodia, Lao PDR, Myanmar, Thailand and Viet Nam] trade and the trade between GMS5 and China have grown faster than overall GMS5 trade.
- Manufacturing products account for more than two-thirds of the exports and imports of GMS5 countries. Trade in primary commodities makes up the other one-third. There are significant differences in export structure among these countries. Their imports, on the other hand, are fairly similar in composition and are made up mainly of manufacturing products.
- Exports of Cambodia, Lao PDR and Myanmar (CLM) to the rest of the world (excluding GMS countries) consist largely of low value-added goods, such as textiles, apparel and primary products. However, intra-GMS exports of CLM countries consist mainly of primary commodities.
- Intra-industry trade in GMS is largely among China, Thailand and Viet Nam, indicating that the export baskets of the three are different from those of the CLM countries and that the latter are not yet part of regional production networks. Among the GMS5 countries, Thailand accounted for 68.7 percent of all GMS5 exports in 2009 and continues to have a major share of GMS5 imports.

Source: Srivastava and Kumar, 2012.

seeing little private agro-industrial investment along corridor routes (ADB, 2011a). Trade in the region consists primarily of manufactured products, with the greatest growth in volumes of trade consisting of imports of manufactured products from China. Thailand and Viet Nam are the other countries with a large share of trade flows within the GMS region.

Total reported exports have grown for agricultural products such as rice, cassava, prawns, processed fish, poultry products and rubber (ADB, 2012a). In addition, a great deal of unregulated trade of primary agricultural products carried by small merchants passes between borders, particularly via the region's vast waterways (Guttal, 2006). With regard to regional trade, the lesser developed GMS countries of Cambodia, Lao PDR and Myanmar essentially export primary products to China, Thailand and Viet Nam. From 2000 to 2009, Thailand's imports from other GMS5 countries became more oriented towards primary products (from 63 percent in 2000 to 81 percent in 2009), suggesting that Thailand is home to more value-added activities than its neighbours. Viet Nam, too, has succeeded in increasing its value-added sector, changing its exports from 46 percent manufactured products in 2000 to 60 percent in 2009 (Srivastava and Kumar, 2012).

Such trade patterns are evidence that countries are benefiting differently from increased connectivity. Less developed countries benefit from the export of raw materials, whereas the more developed countries (such as China and Thailand) benefit from greater value addition and export. This is also a reflection of the level of agro-industrial development in these countries. China and Thailand have more mature agro-industries, while agro-industry in the less developed countries is experiencing infant industry challenges. This dynamic is likely to change over time, as demonstrated by Viet Nam's emergence as a value-added destination for the region's raw agricultural materials. The region is also seeing more intra-industry collaboration with cross-border contract farming. For example, Lao PDR farmers produce maize and soybean destined for Thailand's agro-industrial facilities. In this contracting arrangement, farmers provide land, labour and traders to provide technical support, inputs and market linkages. Lao PDR farmers also contract to farm sugar cane for China investors and traders (ADB, 2012a). Even Myanmar has participated in contract farming agreements (either through the private sector or through government entities) with its GMS neighbours for products such as maize, soybean, pineapple, castor oil plants, rubber and sugar cane. Seeing potential in agro-industrial activities, Myanmar's Ministry of Agriculture and Irrigation plans to set up agroprocessing factories in border areas (ADB, 2012a).

Core Agriculture Support Program: achieving agro-industrial growth by prioritizing agro-industrial investment, facilitating trade and promoting transboundary business models

GMS provides a forum to prioritize sectors and target investments accordingly, while recognizing that the private sector is ultimately the engine for growth. Agriculture, inclusive of production, post-harvest handling and agroprocessing, became a prioritized economic sector during the 10th GMS Ministerial Meeting in Yangon province, China in 2001 (ADB, 2012a). In 2007, the Working Group on Agriculture endorsed ADB's flagship Core Agriculture Support Program (CASP), which aims to expand cross-border trade in food products. CASP Phase II (2011–2015) gave

Vision for the GMS Agriculture Sector

GMS is recognized as the leading producer of safe food, using climate friendly agricultural practices, and integrated into global markets through regional economic corridors.

Source: ADB, 2011.

emphasis to improving subregion competitiveness for agro-industry and ensuring that growth is climate resilient[15] (ADB, 2011a).

CASP Phase I (2006–2010) was supported by ADB and several other development partners. The programme demonstrated progress related to cross-border trade in agricultural products in the following areas (ADB, 2011a):

- Regional initiatives to strengthen human and institutional resources to implement sanitary and phytosanitary measures.
- Preventing and controlling transboundary invasive species and animal diseases based on regional emergency response mechanisms to manage agricultural and natural resources crises in GMS.
- Preparation of a trade facilitation study that provides insights about customs and quarantine procedures at several GMS borders and includes a trade facilitation plan.
- PPP initiatives launched to facilitate the sharing of agricultural information, including the GMS Agriculture Information Network Service.

CASP Phase II (2011–2015) aims to make continued progress in institution building for trade facilitation while also improving subregional competitiveness for agribusiness (ADB, 2011a). The three pillars guiding CASP II are the following:

- *Pillar 1. Food safety*: building global competitiveness by promoting food safety and modernizing agricultural trade.
- *Pillar 2. Climate friendly agriculture*: promoting climate friendly agriculture through a market-based strategy to ensure food security while rewarding farmers for their ecosystem services.
- *Pillar 3. Bioenergy*: promoting agriculture as a leader in providing clean renewable energy and cross-border ecofriendly supply chains.

CASP II implementation approaches call for increased participation of the private sector in achieving agro-industrial growth objectives. In an attempt to strengthen economic ties and cooperation in the subregion, CASP II promotes business models

[15] Given that three of the six GMS member countries (Cambodia, Lao PDR and Myanmar) are among the seven most vulnerable to climate change (ADB, 2009), GMS countries designed the Core Environment Program and Biodiversity Conservation Initiative (CEP-BCI) to ensure environmentally sound development of economic corridors, including the promotion of climate-resilient agriculture policies (ADB, 2014b).

such as cross-border agricultural supply chains and contract farming, agro-industrial clusters, cross-border market information systems and PPPs for developing solutions to pests, disease control and biodiversity conservation.

Low institutional capacity for cross-border trade of agricultural and agro-industrial products is a major bottleneck. Recognizing the need to supplement the region's physical connectivity with improved policy environments and institutional capacity for trade and transport facilitation (Srivastava and Kumar, 2012), GMS members have endorsed further study and technical assistance projects tailored to the individual needs of each country. The GMS Cross-Border Transport Agreement and the GMS Plan of Action for Trade and Trade Facilitation (2012) are two examples of regional collaboration along these lines (Srivastava and Kumar, 2012). The GMS agriculture-focused initiatives also emphasized institutional capacity building for growth in cross-border agricultural trade and integration. Country-led development programmes are addressing growth and economic disparities among member countries in the spirit of shared GMS objectives (see Box 9).

Looking forward

The GMS programme has built up a positive reputation for its regional economic cooperation based on an approach that fosters flexibility, country ownership, results orientation and targeted investment (ADB, 2012b). Hosting the programme at ADB ensures continuity and neutrality in programme leadership. Yet country ownership and accountability are achieved through frequent interaction at sector-based and high-level (summit) meetings. This organizational model has proved to be a practical approach to coordinating across an otherwise overwhelming number of national ministries, development organizations and private businesses, and mobilizing resources around prioritized development needs.

BOX 9

Thai programme to foster regional agro-industrial growth

In the spirit of CASP, the Government of Thailand has initiated a cluster development programme of its own along the East-West Economic Corridor, connecting Thailand with Cambodia, Lao PDR and Myanmar. With ACMECS, Thailand developed master plans for cooperation with each country and identified regional growth centres and spatial development strategies. The Thailand International Cooperation Agency (TICA) provided technical assistance to its less-developed neighbours. Prioritized were agriculture and agroprocessing activities, with an emphasis on biofuels (e.g. palm oil and sugar cane) and cash crops (e.g. maize, sweet corn, soybean, green beans, peanuts, castor beans, potatoes, cashew nuts and eucalyptus). The master plans cumulatively identified 19 geographic clusters and outlined strategies to attract investment, create and expand industrial estates, and develop one-stop services, border and special border economic zones, and other infrastructure and facilities.

Source: ADB, 2012a.

Looking forward, the GMS Strategic Framework 2012–2022 and its supporting Regional Investment Framework and Implementation Plan identify 92 investment and technical assistance projects for the region, totalling an estimated US$30 billion. Some 90 percent of this is flagged to address transport gaps along the key three transport corridors (ADB, 2014a). The remaining US$3 billion are slated for technical assistance to improve institutional capacity, trade policy harmonization, economic integration and sustainable environmental management. It should be noted that the latter investments in technical assistance incorporate agriculture-focused interventions. Addressing transport gaps will certainly be helpful to increase trade flows, but "soft" investments in policy reform and institutional capacity building will be critical to attracting new investment in agroprocessing, since they more directly align with the sector's growth constraints.

The GMS agro-industrial sector will have growth opportunities arising from income growth and rapid urbanization in the region, as evidenced by the growing regional imports of processed food (ADB, 2011a). However, meeting this growing demand will require competitive prices, reliable supply chains and streamlined import and export policies and procedures. The lesser developed member countries face not only border delays and cumbersome customs procedures, but also infant industry constraints to growth that are supply-chain specific. The Cambodian food industry, for example, faces constraints in access to growth finance, meeting export quality and other supply chain capacity issues (Srivastava and Kumar, 2012).

Despite formidable progress achieved by the GMS programme, the benefits of regional cooperation are uneven across countries and between rural and urban communities. Efforts to connect remote rural communities with primary trade routes through investments in feeder roads and power connectivity are still needed. Complementary investments such as building institutional capacity, improving logistics facilities, developing entrepreneurial capacity and addressing sector-specific constraints are required to overcome existing barriers to transforming transport corridors into true economic corridors.

Country-led initiatives and regional partnerships will characterize efforts to promote cross-border agricultural trade and agro-industrial investment. The next wave of intraregional trade growth in agricultural and processed products will result from supply-chain specific interventions to alleviate constraints to growth, particularly in the least developed of the GMS member countries. CASP II, bilateral initiatives and the private sector will continue to foster transboundary business models such as contract farming. This experience will strengthen economic ties and intra-industry collaboration. Over time, there will be growth in setting up cross-border supply chains, which will lead agro-industry to grow where factors of production are the most competitive. In some cases, this will mean moving to lesser developed GMS countries.

Climate change will also present formidable challenges to the sector. Severe vulnerability to climate change means increased risks to the agriculture sector in the form of more frequent and/or severe floods and droughts, and pest and disease epidemics. These require greater investment in agricultural science and technology, yet Cambodia, Lao PDR, Myanmar and Viet Nam have little capacity to invest in climate-resilient research (ADB, 2009).

SAGCOT corridor case study

Emergence of public-private collaboration for agrocorridor creation in the United Republic of Tanzania

Which comes first, agro-industry or primary production? This chicken-and-egg scenario reflects different philosophies on agricultural development approaches. Should agro-industry come first to create the demand-pull effect to incentivize greater on-farm production? Or should there be a sufficient production base to justify investment in agro-industrial facilities? The answer is probably somewhere in between these two extremes. The SAGCOT development approach appears to prioritize increasing the primary production base through introducing modern irrigation and input systems as an interim step towards increasing productivity, which ultimately makes agroprocessing more economically viable.

SAGCOT extends 930 km, between the eastern port of Dar es Salaam and western markets in Zambia, the Democratic Republic of the Congo and Malawi. The case study discusses the origin, institutions and investment approach of this recently launched agribusiness corridor effort.

The corridor footprint spans an area of about 287 000 km^2 within the United Republic of Tanzania (approximately the size of Italy) and incorporates a population of nine million, who are predominantly smallholder subsistence farmers (SAGCOT, 2011; Jenkins, 2012). The corridor initiative seeks to leverage existing roads and railways that have traditionally serviced the mining industry for the purpose of connecting agricultural areas in the fertile southern highlands with local, regional and export markets.

The SAGCOT corridor initiative seeks to attract investment in agribusiness and agroindustry as a means of increasing productivity of the region's natural resources and reducing levels of poverty through incorporating smallholders into commercial value chains. Since SAGCOT is structured as a PPP, stakeholder consultation and public-private collaboration are central to its success.

The nation's economy is highly dependent on the agriculture sector, providing more than 25 percent of GDP, 85 percent of exports and 80 percent of employment (CIA, 2015). Moreover, 80 percent of the nation's poor live in rural areas (World Bank, 2015b). The SAGCOT development approach primarily focuses on realizing the region's agricultural potential, but also integrates agroprocessing activities through vertically aligned investment propositions such as nucleus farm and processing operations. Agroprocessing of domestic production in the region, as well as nationally, is negligible at present. National agroprocessing activities consist primarily of sugar refining, beer, cigarettes and sisal twine (CIA, 2015). However,

Vision for the SAGCOT initiative

The stated objective of SAGCOT is "to foster inclusive, commercially successful agribusinesses that will benefit the region's small-scale farmers and, in so doing, improve food security, reduce rural poverty and ensure environmental sustainability".

Source: http://www.sagcot.com

there is a burgeoning domestic market for processed foods, including juices, cereals and meat products (USAID, 2010). To unlock latent economic potential, the initiative has identified a series of infrastructure and agribusiness ventures whose facilitation of PPPs aims to attract upwards of US$3 billion of investment over 20 years (SAGCOT, 2011). However, the initiative is still in its gestation stages and so, despite some past achievements, it remains to be seen how far it will encourage agro-industrial investment in the future.

Origins: public-private collaboration led by multinational agribusiness companies

The Government of Tanzania has made strides in liberalizing its economy and recognizes the importance of the private sector in achieving its economic growth objectives. PPPs have explicitly been cited in recent development plans as an organizing tool. The SAGCOT PPP is an implementation mechanism for the country's agricultural development policy, *Kilimo Kwanza* (Agriculture First), itself the product of public-private dialogue. The agrocorridor concept was initially championed by Yara, a Norwegian fertilizer company, and introduced at several international fora including the United Nations Private Sector Forum in New York (November 2008) and WEF's New Vision for Agriculture meeting in Davos (January 2009). Yara's involvement was primarily motivated by a desire to expand its business market for fertilizer in the Republic. However, it realized that this meant addressing broader constraints to growth in the agriculture sector (see Box 10).

The emergence of the agrocorridor concept in the United Republic of Tanzania coincided with international fora that had prioritized food security in response to spiking food prices, such as the 2009 L'Aquila Summit, which resulted in G8 countries committing to mobilize US$22 billion for agriculture and food security. Multinational food companies participated in these fora and food security PPPs began to multiply. The President of the United Republic of Tanzania took an interest in the concept, which mirrored the private-sector led development approach

BOX 10

Yara seeks to increase fertilizer sales through the Tanzania Agricultural Partnership

Yara, a multinational fertilizer company, was instrumental in establishing the Tanzania Agricultural Partnership (TAP) PPP in 2005 as a means to scale up the market for its fertilizers to smallholders. The partners (Yara and the Agriculture Council of Tanzania [ACT]) realized that the key to their success was in addressing multiple bottlenecks along the value chain, which would then ensure reliable markets for end products produced with Yara's fertilizers. The partnership changed its name to the Tanzania Agricultural Partnership (TAP) and broadened its scope to include coordination with district-level stakeholders along specific value chains. TAP has achieved some success in attracting investment to address value-chain bottlenecks.

Source: Jenkins, 2012.

it approved through *Kilimo Kwanza*. After a meeting of public and private actors in Dar es Salaam in October 2009, the country officially launched the SAGCOT partnership in May 2010 as a pilot agrocorridor initiative and a flagship programme to implement *Kilimo Kwanza*. The private sector, including Yara, Unilever, Prorustica and AgDevCo, demonstrated leadership in clarifying the SAGCOT concept and implementation approach through the completion of a series of design steps: first the SAGCOT Concept Note (May 2010), then the creation of the SAGCOT Executive Committee to lead the creation process (2010), and finally the completion of the SAGCOT Investment Blueprint (January 2011). The main implementation body, the SAGCOT Centre, was established in May 2011 (Jenkins, 2012).

Leadership from the President of the United Republic of Tanzania and high-level support from G20 countries have helped to push the initiative forward (FAO, 2014). Early funding for the initiative was provided by the Government of Norway, including the development of the SAGCOT Concept Note. However, a critical mass of interested parties quickly emerged, including the Government of the Republic of Tanzania, development agencies and multinational companies, which provided subsequent tranches of funding for the development of the SAGCOT Investment Blueprint and startup operations of the SAGCOT Centre Ltd (Jenkins, 2012). Key establishment and performance milestones are captured in Box 11.

Where to start? Leverage existing trade routes for agrocorridor development

The corridor footprint is drawn around a traditional trading route, largely servicing the mining industry, linking the United Republic of Tanzania's Dar es Salaam port with neighbouring landlocked countries. The trading route has a long-established transportation infrastructure, including 1 870 km of rail, 1 762 km of highways and the port of Dar es Salaam. In addition to existing transport infrastructure, the region was selected for its potential to be an agricultural breadbasket for the country and region. The trade route passes through 3 000 000 ha of arable land that is suitable for various types of agricultural production. The region is naturally endowed with freshwater resources (total renewable water resources amounting to 93 km^3 per year), yet only an estimated 1 percent of total irrigable land is currently developed (SAGCOT, 2011). It should be noted, however, that water resources in the region are the subject of ongoing research, some of which points to issues around the area's sensitive wetlands (Braedt, 2015).

Capitalizing on the region's natural and strategic potential, SAGCOT aspires to triple its agricultural output by bringing 350 000 ha into commercial production by 2030. SAGCOT documents suggest that the region benefits from competitive factors of production such as high yields, low labour costs, low land lease costs and duty-free imports of capital, fertilizers and other products. Agribusiness is already a driver of growth, as evidenced by several rice operations involving international investors (SAGCOT, 2012a). SAGCOT aims to transform the area's agricultural sector from largely subsistence agriculture into competitive, value-added industry by catalysing public and private investment in infrastructure upgrades and extensions, as well as agricultural production and processing activities.

A major thrust of SAGCOT has been to address infrastructure gaps, particularly in rural roads and electrification, largely through government initiatives and leveraging concessional World Bank loans. The region's transport infrastructure requires

upgrades, extensions to rural areas and maintenance to enhance competitiveness in transport costs. Similarly, although the electrical grid already services major towns along the corridor, it suffers from recurrent power outages. Investments are needed in generation capacity and improved efficiency in power distribution. Over 80 percent of businesses operating in the United Republic of Tanzania ranked the provision of electrical power as the most significant constraint to growth (World Bank, 2015b).

BOX 11
SAGCOT origins and milestones

2005 Yara enters into business with the United Republic of Tanzania and helps to establish the Tanzania Agricultural Input Partnership (later to be renamed Tanzania Agricultural Partnership), with funding from the Norwegian Government to expand the market for Yara's fertilizer by addressing bottlenecks along the value chain and foster growth among smallholder farmers.
November 2008 Yara introduces agricultural growth corridor concept at the United Nations Private Sector Forum in New York.
January 2009 Agrocorridor proposal endorsed at WEF's New Vision Meeting in Davos.
2009 Government of the United Republic of Tanzania adopts *Kilimo Kwanza*, an agricultural development strategy that elevates agricultural development as a priority for all economic sectors and government ministries and emphasizes a private sector-led approach to growth.
October 2009 Key players in Tanzanian agriculture convene in Dar es Salaam to discuss agricultural growth corridor concept and decide to focus efforts on the southern corridor as a pilot programme.
May 2010 Launch of the SAGCOT Partnership at the African WEF in Dar es Salaam, based on the presentation of a SAGCOT Concept Note; SAGCOT Executive Committee established, co-chaired by Unilever and the Tanzanian Ministry of Agriculture; Committee members played strategic roles in the consultation process and development of the Investment Blueprint.
January 2011 Presentation of the SAGCOT Investment Blueprint in Dar es Salaam and WEF in Davos, which identified public and private sector investment opportunities.
May 2011 Legal establishment of the SAGCOT Centre Ltd and the SAGCOT Catalytic Trust Fund.
October 2011 Official opening of SAGCOT Centre Ltd.
August 2012 Completion of the SAGCOT Investment Greenprint, which presents a strategy for conserving the natural resource base while intensifying agriculture sustainably for both smallholder and commercial producers.
November 2012 First Investor Showcase held with site visits.
September 2015 Yara investment of US$25 million fertilizer terminal.
2030 Planned wind-up of the SAGCOT PPP.

Sources: SAGCOT, 2011; Jenkins, 2012.

Investment priorities

Investment promotion efforts are organized around the three initial geographic areas where SAGCOT aims to "cluster" or co-locate interrelated businesses:[16] Kilombero, Ihemi and Mbarali. The Investment Blueprint states that SAGCOT aims to facilitate the development of clusters of profitable agricultural businesses within the southern corridor. "Building on existing operations and planned investments, the clusters are likely to bring together agricultural research stations, nucleus larger farms and ranches with outgrower schemes, irrigated block farming operations, processing and storage facilities, transport and logistics hubs, and improved 'last-mile' infrastructure to farms and local communities. When taking place in the same geographic area, these investments result in strong synergies across the agricultural value chain, helping create the conditions for a competitive and low-cost industry" (SAGCOT, 2011, pp. 4–5). The three prioritized areas already host some modern farming operations such as Kilombero Plantations Limited, and have relatively good access to transport and power infrastructure (Jenkins, 2012). These areas were prioritized for quick wins to demonstrate early progress.

Within these areas, several subsectors have been identified with growth potential, including grains, potatoes, bananas, livestock, horticulture, tea, coffee and cocoa, forest products, and fish and aquaculture. The rice, sugar and livestock subsectors (or value chains) were prioritized, with oilseeds, horticulture and maize likely to be added as the initiative gains momentum (SAGCOT, 2013). In 2012, the Centre completed a series of geographic profiles of the three prioritized subsectors. Opportunities for value addition are certainly fewer for rice and sugar than they are for oilseeds and horticulture, but the former were selected based on their development impact and attractiveness for investors, including the number of jobs or outgrower opportunities created, impact on food security, impact on reducing imports or increasing exports, market size and growth, and trade relationships (Chiza, 2012). The emphasis on primary production can be understood as a stepping stone towards creating commercial value chains inclusive of smallholder farmers, as well as growing a primary production base sufficient to facilitate economies of scale for profitable agro-industry.

Commercialization of rice, sugar and livestock products will require investments in production capacity, as well as in services such as sales of improved seed and other agricultural inputs; irrigation; mechanization; post-harvest handling facilities; agroprocessing and packaging facilities; quality assurance services; improved logistics services (e.g. warehouses, cold chains, vehicles, containers, wholesale markets and collection points); and "last-mile" power and road connections. The investment briefs incorporate some of these services, suggesting a preference for vertically integrated business models. The Investment Blueprint describes a nucleus farm hub and outgrower model that incorporates the participation of smallholders and emergent farmers in production activities, whereby the nucleus farm hub provides them with access to irrigation, lower cost inputs, access to processing and

[16] See Chapter 3 for discussions on clustering. See Chapters 4 and 5 for discussions on clustering and co-location approaches. The term "cluster" implies relationships that go beyond co-location. The United Republic of Tanzania has been interested in cluster development for many years.

storage facilities, finance and markets. The investment profile for rice, for example, cites Kilombero Plantations Limited as an ideal business model (see Box 12). Three priority rice sites are in the process of being awarded long-term leases to qualified investors for irrigated rice farming and processing, largely organized around the nucleus farm and outgrower business model. The SAGCOT Centre will facilitate access to donor-funded training for smallholder outgrowers and infrastructure extensions for roads and power.

The SAGCOT Centre is also prioritizing investment in the country's livestock sector. The investment approach differs slightly because of the heavy involvement of the National Ranching Company (NARCO) in every activity of the livestock value chain. SAGCOT promotes stand-alone investments in abattoirs, tanneries

BOX 12
Kilombero Plantations Limited

Kilombero Plantations Limited is a 5 000-ha dryland rice, maize and beans business consisting of a nucleus farm and 4 300 outgrowers. Launched in 2008, Kilombero Plantations invested US$35 million in land preparation, irrigation, drying equipment, machinery and industrial rice milling facilities. The nucleus farm has a rice mill and works with area farms to improve yields through the System of Rice Intensification Plan. The operation is owned by AgDevCo, a social impact investor that also played a role in developing the SAGCOT initiative, most notably for the Investment Blueprint publication. AgDevCo has other investments in the United Republic of Tanzania in various sectors, including livestock, dairy, horticulture and cereals.

Source: http:/www.agdevco.com/our-investments/by-investment/KILOMBERO-PLANTATIONS-LIMITED

BOX 13
Focus on livestock

The SAGCOT Centre is seeking investment in livestock value-added activities such as modern ranching, feedlots, abattoirs, processing units and tanneries for existing ranches throughout the country. In partnership with the Government-owned NARCO, the SAGCOT Centre has identified a priority fast-track site in the corridor region for development, namely Ruvu Ranch, which covers an area of 44 000 ha of flat grasslands strategically located close to Dar es Salaam, transport and power connectivity. NARCO is collaborating with the Tanzania Investment Bank to develop feasibility studies and financial analysis. NARCO offers long-term land leases of up to 99 years and a majority equity stake to investors. The Tanzania Investment Bank intends to provide access to debt and equity financing. SAGCOT can also facilitate access to farmer training and donor-funded core infrastructure upgrades.

Source: Chiza, 2012.

and other value-added activities, but maintains NARCO's involvement through minority shares and stakeholder coordination across the value chain (see Box 13 for more details).

In addition to attracting integrated businesses to generate value-added demand-pull for agricultural growth, the Republic of Tanzania also intends to create agribusiness SEZs in key locations within the SAGCOT corridor. Businesses targeted to receive special treatment in these zones include agroprocessing, agricultural inputs distributors, agromachinery, and companies packaging and transporting agricultural products (OECD, 2013). This goal is currently aspirational, with no progress yet to report.

Various fiscal incentives are available to agribusiness investors at the national level, designed to attract investment in the sector. These include (FAO, 2013b):

- tax deduction for land-clearing costs;
- zero import duty for agricultural inputs and implements;
- 100 percent first-year capital allowance for plant and machinery for large-scale farming (small-scale agriculture remains tax exempt); and
- tax exemption for agriculture and fishery raw materials destined for further processing.

There are also no formal barriers to 100 percent ownership of businesses by foreign investors in agriculture, although the livestock industry still has heavy government involvement. However, a number of disincentives to investment linger in the country's broader enabling environment. The United Republic of Tanzania does not perform well in business environment indicators. In 2014, it was 113th out of 189 in the 2014 Doing Business ranking, 125th out of 148 in the Global Competitiveness Index ranking, and 119th out of 175 in the Transparency International Corrup-

BOX 14

Navigating a complex land rights regime is a challenge for investors

A recent enabling environment diagnostic discusses the land rights regime: "the issue of landownership is fraught with political, cultural and social complexities, and all Tanzanian governments since the socialist period have either neglected the issue or ignored it completely. As a result, land is rarely used for collateral outside of urban and peri-urban areas, and access to large tracts of land with clear title is a serious problem for commercial agriculture".

There is also growing wariness from smallholders and related stakeholders in the area that fear the corridor initiative will generate a "land grab", marginalizing smallholders to less viable land. Thus far, land access (leasing) has been managed at the national level (as all Tanzanian land is owned by the Government) by securing large contiguous tracks that can be leased to investors. The SAGCOT Centre is also tasked with facilitating access to land for potential investors.

Sources: USAID, 2010, p. 6; Government of Tanzania, 2014.

tion Perceptions Index. Issues of particular nuisance to the agro-industrial sector include limited access to finance, an antiquated and complex land rights regime (see Box 14), meddlesome commodity boards and government policies such as export bans, import tariffs and those for input subsidies (USAID, 2010).

Governance: institutional neutrality is key to building trust among multiple stakeholders and achieving results across many sectors

The SAGCOT Executive Committee was established in May 2010, tasked with designing the SAGCOT implementation mechanism, including designing its institutional structure, guiding principles, priorities and budget. The Committee is co-chaired by Unilever and the Tanzanian Ministry of Agriculture. Other members include the Prime Minister's office, ACT, the Confederation of Tanzania Industries, the Tanzania Sugarcane Growers' Association, AGRA, USAID, the Irish Embassy, Yara and Syngenta – reflecting a balance between government, private sector and donor representation (Jenkins, 2012). The Committee's first act was to commission the development of the SAGCOT Investment Blueprint by Prorustica, AgDevCo and TAP, the same group that had prepared the SAGCOT Concept Note. The process for developing the blueprint required a great deal of stakeholder consultation, which was facilitated by Committee members (Jenkins, 2012).

The Investment Blueprint, completed in January 2011, explains the conceptual framework for the SAGCOT initiative, identifies fast-track investment opportunities as well as critical infrastructure upgrades, recommends institutional arrangements and catalogues current donor interventions in the area. It also emphasizes the need for environmentally sustainable investments, later to be elaborated upon in the Investment Greenprint. A product of significant stakeholder consultation, the Investment Blueprint succeeded in generating momentum for the initiative and remains the leading programme document that describes the SAGCOT vision today.

Only a few months later (May 2011), the Government of the United Republic of Tanzania announced the establishment of the initiative's two implementation entities, the SAGCOT Centre Ltd and the SAGCOT Catalytic Trust Fund (see Box 4, p. 49). The latter is still under development. The SAGCOT Centre Ltd was established as a new and independent organization to serve as the main coordinating body for the development of the country's southern corridor. A number of factors influenced the decision to create a new organization rather than house the initiative within existing organizations. These include the following:

- *Cross-sectoral and geographically vast scope.* The multidisciplinary nature of corridor development as well as the large number of stakeholders implicated at the national, regional and local levels required dedicated resources and staff to coordinate among parties.
- *Lack of trust between and among stakeholders*. Lack of trust was cited as a constraint to growth in the region, which muddied the lines of communication between and within farmer groups, business and government (SAGCOT, 2011). Institutional neutrality was needed to ensure credibility and eliminate vested interests that may have influenced decision-making.
- *Ability to mingle public and private funds*. The country's legal framework specifies restrictions pertaining to receiving funds from both public and private sector entities, which necessitated the creation of a legally unique PPP.

> Funding for the Centre comes from the Government of the United Republic of Tanzania, development organizations, private partners and partnership fees (SAGCOT, 2015).

The SAGCOT Centre Ltd was established as a legally registered, independent PPP and formal secretariat for the initiative. Its functions and composition adhere to the guidance outlined in the Investment Blueprint as well as the Terms of Reference developed by the Executive Committee (Jenkins, 2012). The Centre serves as a platform for the engagement and participation of multiple stakeholders and is partially modelled on its PPP precursor, TAP, led by Yara.

Today, the SAGCOT Centre coordinates activities among 73 partners, representing multinational and domestic private businesses, farmer organizations, industry associations, development organizations and government agencies (Baarn, 2015). The SAGCOT Web site states: "The SAGCOT Centre Ltd functions as an honest non-partisan broker to support the SAGCOT partners to achieve the objectives in the Corridor" (SAGCOT [Web page], 2015). Its primary responsibilities are to address various bottlenecks by coordinating and targeting investments. These include (Investment Blueprint) the following aims to:

- harmonize resource use for the shared goals of corridor development;
- catalyse private investment in agricultural production, services and processing activities;
- promote partnerships that encourage public and private organizations to become active participants in the project;
- coordinate government and donor investments in the provision of public goods, notably upgrades to key supporting infrastructure;
- promote inclusiveness of smallholder farmers in commercial endeavours;
- improve access to finance through the mobilization of funds, grants and other development dollars dedicated to investments in the corridor;
- coordinate among many stakeholders (communities, business, government entities and donors) to plan, implement and review SAGCOT activities;
- facilitate information exchange among partners and stakeholders, link stakeholders to one another and resolve conflict among partners;
- identify policy and regulatory constraints to promote the long-term improvement of the enabling environment; and
- monitor, evaluate and report to track implementation progress and impact.

The SAGCOT Centre reports to its Board of Directors. The Board currently has eight members, with representation from the Ministry of Agriculture (two representatives), business community (three representatives), WEF and academia (SAGCOT, 2015). The Board is responsible for overseeing the Centre's operations, including its annual budget, work plans, progress report and membership applications. No funding raised by the Centre is available to the Board (Jenkins, 2012).

Investment promotion: how it works

Perhaps as important as understanding SAGCOT Centre's responsibilities is to understand what the Centre is *not* designed to do. The Centre does not broker deals, but rather facilitates introductions of parties with shared interests. It does not help

investors manoeuvre or expedite bureaucratic processes, but points investors in the direction of the Tanzania Investment Centre (TIC) for assistance.

TIC is the official Government institution tasked with investment promotion and managing its one-stop-shop that centralizes all processes necessary for business establishment (certificates of incorporation, registration and investment incentives) and post-investment services (renewal of licences, dispute resolution with local authorities and policy advocacy) (OECD, 2013). TIC disseminates information to investors on existing investment opportunities and incentives through its Web site and through events such as International Investment Fora and the International Investors' Round Table Working Group organized in collaboration with the Tanzania National Business Council (OECD, 2013). TIC has won awards over the years for its performance. These include the African Association for Public Administration and Management's Innovative Management Award (2008); Best Investment Promotion Agency in the World in 2007 (from the World Association of Investment Promotion Agencies [WAIPA]); Best Country of the Future in 2006 (from *The Financial Times*); and Best Investment Promotion Agency in sub-Saharan Africa in 2005 (from Africa Investor) (Tanzania Investment Centre, 2014). Recent reviews of its performance and the performance of the business enabling environment overall, however, indicate the need for more improvements, particularly pertaining to agribusinesses and SMEs.

A significant new investment in the southern corridor was announced by Unilever in 2013. The investment aims to double Unilever's current production by incorporating 6 000 ha of smallholder production into its supply chain. The investment will include upgrades to Unilever estates and tea supply chain, new factories, local infrastructure, research and development, support programmes for smallholder farmers and obtaining Rainforest Alliance certification. Unilever will continue to work closely with the Tea Board of Tanzania and the Tanzania Smallholder Development Agency in implementing this project (Unilever, 2013). It is not clear what roles the SAGCOT Centre or TIC played in supporting the project.

BOX 15

Tanzania Investment Centre One-Stop-Shop

TIC houses staff from six government institutions in order to streamline processes and act as a one-stop-shop for investors. Institutions represented include:

- Tanzania Immigration Services Department, for issuing foreign work permits;
- Ministry of Labour and Employment, for Class B work permits;
- Business Registrations and Licensing Agency, for registration of companies, trademarks, patents and copyrights;
- Ministry of Industry and Trade, for business licences;
- Tanzania Revenue Authority, for national taxation; and
- Ministry of Lands, Housing and Human Settlements Development, for access to land.

Source: OECD, 2013.

In September 2015, Yara launched a new US$25 million fertilizer terminal that will position the United Republic of Tanzania as a regional hub for fertilizer distribution and directly supports agricultural growth in the southern part of the country. The facility will increase its supply capacity to the region by 45 000 tonnes, a 37.5 percent increase from its current supply of 120 000 tonnes (SAGCOT, 2015).

There are reportedly other smaller investments taking place in the corridor. These, and their impacts, need to be understood better and tracked in a formal results framework. There is also a question of attribution as to which institution or collaboration of institutions is responsible for attracting these investments.

Looking forward: leadership is required to overcome enabling environment bottlenecks

There has been much "hype" in promoting the SAGCOT concept. Nevertheless, to date, progress on the ground has been slow. To cite the example of the World Bank's US$70 million SAGCOT Investment Project, the anchor project was approved on 23 September 2011 and was designed to support the launch of the SAGCOT Secretariat and the Catalytic Fund, as well as provide access to finance for micro and SMEs in agribusiness value chains. The project required a number of social and environmental assessments, which were completed over the course of 2012 to 2014. Having completed these assessments, the project approved its second disbursement of US$750 000 in August 2014, placing disbursement levels at 5 percent of total project funding committed after four years (World Bank, 2015b).

The SAGCOT initiative began with leadership from multinational companies, but certainly required government leadership, including from the President, to push through the necessary legal mandates to create the PPP institutional structure that incorporated a balanced public-private board representation. Such a unique collaboration between high-level government officials and powerful multinationals has the potential to generate developmental results. A potential drawback to such high-level involvement, however, could be detachment from realities on the ground and disenfranchisement of smaller, less powerful stakeholders (e.g. smallholder farmers and SMEs). The SAGCOT Centre needs to move effectively from what has thus far been a largely top-down initiative to one that truly engages all stakeholders, including rural communities, farmer associations and SMEs (Kuhlmann, Sechler and Guinan, 2011). The SAGCOT Centre could define its role more proactively, based on the needs of its members.

The SAGCOT initiative is still very young, four years old as of the writing of this publication, and has a long-term time horizon. The PPP is scheduled to dissolve in 2030. Aside from investments from Yara, Unilever and a handful of smaller investments, success stories to date are few. Yet the initiative remains promising because of its public-private composition and targeted agenda. The SAGCOT Centre is strategically structured to facilitate linkages at the field level, given the quality of the broader enabling environment in the United Republic of Tanzania and the historical disconnect between local and national government institutions (USAID, 2010). Its mission is primarily to facilitate collaboration, information sharing and act as a neutral broker for investment facilitation. However, a number of factors will hinder progress, such as institutional capacity dependencies (including dependencies on other agencies to promote investment, register businesses, regulate, etc.); limited access to finance; and infrastructure bottlenecks:

- *Institutional capacity dependencies.* Institutional capacity limitations of district-level and national-level agencies for investment promotion, licensing and provision of land rights will continue to slow progress in the short and medium term. In light of capacity issues, the SAGCOT Centre, as an independent and neutral entity, could act as the impetus that effectively breaks through institutional hindrances in order to catalyse improvements in the investment environment and facilitate investment.
- *Limited access to finance.* Actors throughout agricultural value chains have limited access to finance. The agriculture sector is extremely risky for reasons such as its inability to use land as collateral, weather variability and culture of loan default (USAID, 2010; Jenkins, 2012). Banks ask for interest rates between 15 and 20 percent if and when they do extend loans to the sector (Jenkins, 2012).
- *Infrastructure bottlenecks.* Progress will also be hindered by trade and logistics bottlenecks, including substantial delays caused by inefficient offloading and clearing at Dar es Salaam port, and limited cold chain infrastructure, feeder roads and electricity (USAID, 2010). Donor programming is currently heavily invested in addressing infrastructure constraints along the corridor.

SAGCOT's success will eventually be measured by increases in economic activity in the region, following infrastructure upgrades, private investment and integration of smallholders into commercial value chains. The United Republic of Tanzania has chosen to leverage existing trade routes developed largely for the mineral industry to generate growth of agricultural production and agro-industry. Given the region's low productivity production base, smallholder landholding composition and national priorities of poverty reduction and food security, achieving scale at the primary production level has been prioritized. As the region's agricultural base transitions from subsistence to commercial, there will be more opportunities for agro-industrial growth. Maximizing donor resources in ways that catalyse private investment is paramount to achieving this transition, i.e. ensuring that infrastructure upgrades tie in directly with agribusiness and agro-industrial activities; providing technical assistance that helps to link farmers to commercial markets; strengthening the nation's land rights system; and upgrading logistics facilities and services to address the needs of the growing agro-industrial sector.

A successful Tanzanian southern corridor could be a precursor to greater regional connectivity and collaboration, connecting landlocked countries such as Zambia, the Democratic Republic of the Congo and Malawi to export through the port of Dar es Salaam.

2.8 LESSONS LEARNED

A number of lessons are emerging to guide those who are designing policies, projects and investments in agricultural growth corridors.

Twelve lessons are set out below, but should not be considered exhaustive. Of course, several of them are relevant to corridors in general, i.e. not specific or exclusive to agrocorridors. Conscious focus on agricultural growth corridors is relatively recent and therefore lessons must at this stage be tentative. They should therefore be taken as cautionary advice or hypotheses to be tested and things to be taken into consideration rather than as given.

1. Agrocorridor development is emerging as an important means of fostering economic development and can make a significant contribution to objectives related to rural development, agricultural competitiveness, food security and "Feed the Future" objectives.
2. Agrocorridor initiatives begin with a careful selection of regions that will undoubtedly benefit from specially designed transport corridors supported by policies, incentives and investments in agro-industry.
3. Successful agrocorridors require major private sector investment, which in turn requires an overarching policy and organizational framework. Investment promotion agencies, corridor centres, PPP authorities and specialized investment groups in Ministries of Agriculture can support procurement of the necessary investment. Their role is usually part of the agreements, plans and institutional design of a corridor initiative.
4. When corridor projects are designed to connect two neighbouring countries, there is a tendency for the stronger economy to reap most of the benefits from the corridor initiative. This may even be desirable in some cases. Nevertheless, if the effort is to improve incomes and develop opportunities in the lower-income or smaller economy, it is important to analyse any unintended consequences together with the certainty that benefits will indeed flow to the countries and regions targeted.
5. Social inclusion should be an important objective of agrocorridor initiatives and it is important to guard against potential downsides, such as the reduction in scope for small farmers traditionally focused on subsistence or provision of food to local markets. The focus on commercial products and exports may either exclude traditional farmers or place them in a dependent role as contract farmers rather than independent farmers. Indeed, if land values increase along the corridor, this may lead to small farmers being displaced by more astute economic actors.
6. Integrating small farmers into commercial arrangements in agricultural growth corridors is an important social objective but it should not be assumed that benefits to small farmers along the corridor will be automatic. Contract farming initiatives, including removal of legal and infrastructure barriers, can help ensure the delivery of these benefits, and the financing of agrocorridors can include provisions for promoting inclusive business and the integration of small farmers (FAO, 2014).
7. The environmental, health and sociological consequences of agricultural corridor development are not well understood and there may be many unintended consequences that will only come to light later on. For example, engineers and economists did not predict the very high transmission rates of HIV infection along the transportation corridors through southern and Central Africa.
8. The ability of farmers to benefit from agricultural corridors may be limited by their ability to produce more efficiently and to meet new market specifications for the more demanding urban or export markets to which they will be linked. This will require special attention to farmer training and should not be assumed to be automatic.

9. A successful agricultural corridor requires more than investment in basic transport infrastructure such as roads and railways. It requires investment in feeder roads, dams, irrigation, power facilities and logistics support. It requires input infrastructure, distribution networks and attention to the post-production food chain (possibly a cold chain). It also requires investment in downstream agro-industrial processing if it is to be a mechanism for promoting value addition and industry.
10. Although it may seem obvious, an agricultural growth corridor is only effective where there is true economic potential and untapped demand in the market. Assumptions that "if you build it, they will come" should be carefully tested.
11. Agrocorridor success is highly dependent on a government's ability to marshal the resources for infrastructure investment and its ability to attract third-party capital and private investment.
12. Often overlooked is the need to ensure the safety, security and predictability of agrocorridors. In areas where there is unrest or insecurity, corridor security cannot unfortunately be taken as a given.

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Chapter 3
Agrobased clusters

> *"Even with the best terroir in the world, a winemaker's chances of success will be hamstrung without a hard core of nearby, like-minded producers who are able to combine building their own wine empires with a collective strategy for critical acclaim. It's the wine cluster effect. […] Champagne as a region has benefited strongly from the cluster effect. [In] Champagne […] each producer has their own strategy, but there's also a collective strategy. [On the other hand] France's Cahors region is a good example of what can happen when a cluster is missing. It has a very strong brand name, but it has been weakened by the evolution of consumer tastes. Producers could not pull themselves out of the hole, because they could not reach a strategic consensus" (Mercer, 2014).*
>
> Valéry Michaux, co-editor of *Strategies of wine-producing territories, clusters, governance and territorial brands* and Director of Research at Neoma Business School, Reims, France

In recent decades, many countries and regions have made attempts to use a cluster-based approach to spur development. Literature, international business and academic fora are full of case experiences demonstrating the overall success of this approach in many industries and territories. But there are also more failures that one would like. Is clustering an obsolete development approach? What makes the difference between a failed and a successful cluster venture? The following sections will discuss these questions, focusing on what governments can do to help their clusters become and stay competitive in an increasingly globalized economy.

There is more to this debate than abstract competitiveness principles. Cities, regions and countries throughout the world have been trying to create the next Silicon Valley. But for agribusiness clusters, a relevant example has been another valley close by – the Central Valley of California in the United States of America, and the cluster of support that prominently includes the University of California, Davis (UC-Davis), among others. Indeed, most valleys around the world produce agricultural products, not silicon chips, dot.com and social media ventures. As it turns out, cluster initiatives have been relevant to agricultural value chains where they have been implemented for many years. Should the agrocluster approach be emphasized for stimulating agricultural sector growth? Do clustering efforts work, irrespective of the product or value chain? And do they work as effectively for agriculture as they do for the information technology and tourism industries?

These are some of the issues addressed in this chapter. The chapter starts with a definition of clusters and then provides a brief history and theory of cluster development. It lays out the evidence to show the nature and effectiveness of agrocluster initiatives, highlighting their benefits and limitations. It subsequently discusses the

implications for countries considering cluster-based policies. The latter part of the chapter shares tools for those wishing to facilitate cluster initiatives, the dangers to avoid and the lessons learned. A number of cases are presented to illustrate agro-cluster development and initiatives in action.[17]

3.1 CONCEPTS

A *cluster* can be broadly defined as the geographic concentration of horizontally and vertically connected companies and institutions of a particular field, along with their related government, academic and private sector stakeholders (Porter, 1998). The most distinctive aspect of a cluster is the concentration of economic activities around one type of process or product (vertical dimension) or closely related products (horizontal dimension). Clusters are further characterized by the rapid transmission of ideas and resources from a variety of sources that boost productivity and innovation; and by involving both intense competition and selective cooperation ("co-optition"). A cluster also provides positive externalities for individual firms, including access to research and development (R&D), and skilled workers, strategic insights, quality certification services and examples of new product and service features that can be imitated. Clusters may include other tools discussed in this book – agroparks, SEZs and incubators, and can be part of economic corridors (Chapter 2).

Clusters can evolve on their own or be actively promoted by government, private companies and the global community. These public-private efforts to foster the competitiveness of existing clusters by improving productivity, pursuing forward linkages, innovating and creating additional value added are known as *cluster initiatives*. These initiatives move quickly through the stages of convening, benchmarking, identifying opportunities, implementing initiatives and tracking the resulting investments and impacts. Cluster initiatives identify the binding constraints to competitiveness and implement effective solutions, and often serve as catalysts for economic development projects (ITD, 2009).

Agroclusters can be defined as "concentrations of producers, agribusinesses and institutions that are engaged in the same agricultural or agro-industrial subsector, and interconnect and build value networks when addressing common challenges and pursuing common opportunities" (FAO, 2010, p. x). These clusters typically include input suppliers, farmers, cooperatives, transporters, storage providers, financial agents, insurance providers, traders, processors, exporters, agricultural universities, agricultural extension agents, cold storage facilities, port authorities, exporters, retailers, regulatory bodies, governmental institutions, universities and trade associations. The regional concentration or proximity of these interconnected cluster actors improves their productivity, enhances competitiveness and spurs innovation.

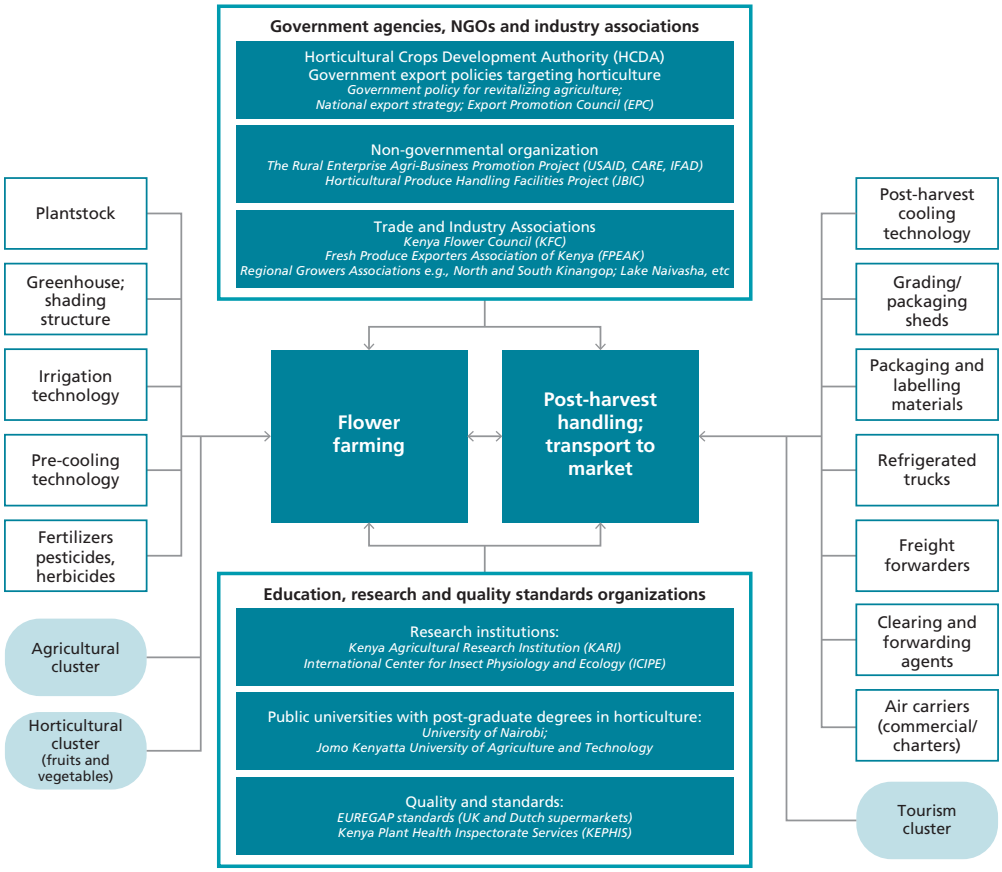
It is useful to differentiate agroclusters from simple co-location of agribusiness enterprises: something that Ffocs-Williams (2012) refers to as "clumps" rather than clusters. He notes that promoting geographic co-location is relatively easy, while the challenging part is to foster the social capital and linkages among the co-located

[17] The first half of this chapter relies heavily on FAO (2010), while the second half draws on the World Bank (2009) and on practical field experience in the course of implementing cluster initiatives in Europe, Asia, Africa and the Americas.

firms in ways that lead to constant increases in productivity and innovation. As stated in FAO (2010), agroclusters are collectively empowered as a result of the interconnections and value networks that their members build among them, as seen in the example of the Kenya flower industry cluster map presented in Figure 14.

The creation of value networks is common to all clusters, regardless of the industry. However, agroclusters differ from industrial, mining or service clusters in that they often involve perishable products, and special political sensitivities related to food security, food safety, domestic food prices, urban consumers and rural farmers, all important political constituencies. This implies a need to balance the policy considerations of ensuring competitiveness with all these sensitive factors.

FIGURE 14
A visual representation of an agrobased cluster (Kenya flower industry)



Source: student team research by Kusi Hornberger, Nick Ndiritu, Lalo Ponce-Brito, Melesse Tashu and Tijan Watt, Microeconomics of Competitiveness Course, 2007.

Nuances. On the surface, the definition of "agrocluster", sometimes referred to as an "agribusiness cluster" or "food cluster", does not seem particularly complicated. Nothing could be further from the truth. "Cluster" is a term that has been used very loosely in the economic development field to the point that the tag "cluster" is often applied to quite different concepts. Sometimes the definition of an agrobased cluster is so broad as to lose meaning and actionability. For example, the Agrocluster Ribatejo in Portugal is in fact a private association of agro-industrial entities and businesses (e.g. horticulture, meat, beverages and vegetable oil) from several agroclusters located in the Ribatejo region. It seeks to increase competitiveness of the regional agrifood system (Agrocluster Ribatejo, 2012).

On the contrary, the term "cluster" is sometimes applied to a product category that is so narrow or among producers so alike that the variety of actors that characterize a cluster cannot be found. The 2SCALE potato "cluster" in Kenya seeks to improve the market potential and competitive advantage only of the potato and its derivatives. Groups of Kenyan farmers from three communities grow high-quality potatoes for a domestic processor in Nairobi, which sells the processed products to hotels, restaurants and supermarkets. This may be an excellent initiative, but it is basically a contract farming operation between 800 farmers and a buyer, involving input suppliers (a seed company, and fertilizer and agrochemical suppliers) and the support of a series of institutions. It is at best a seminal cluster: the use of the word "cluster" normally implies at least the beginning of product differentiation and upgrading, new connections to consumers and processors, and complex interactions among a growing set of supporting industries and organizations (2SCALE, 2015).

Clusters can certainly apply to a focus on one product category, such as the "California wine cluster", which includes differentiated products, brand names, cask makers, bottle makers, label makers, machinery providers, research institutes, marketing support, catalogue sales, wine tourism specialists and many other actors. The Chilean salmon cluster (described later in this chapter) is also rightly regarded as a cluster because it is confined to specific territories/regions in Chile where there is a large value chain concentration. Perhaps the broadest acceptable use of the term "cluster" is its use in the "horticulture cluster" of a given region which, although applying to a diverse set of fruit/vegetables, involves the use of similar supporting infrastructure, cold chains, input providers and transporters. A case in point is the horticultural cluster in western Thailand supported by Kasetsart University, as shown in Box 16.

Agrocluster initiatives can be differentiated from agricultural value chain[18] *initiatives* where the former are linked to a specific territory and the latter are not spatially bound, i.e. do not require geographic concentration of their members. An extreme case is that of the so-called global value chains where the different stages of the production process are located across different countries. Clusters and value chains can be very symbiotic: clusters can strengthen the networks and interactions

[18] An agricultural value chain encompasses the full range of farms and firms and their successive coordinated value-adding activities that produce particular raw agricultural materials and transform them into particular agricultural and food products that are sold to consumers and disposed of after use (FAO, 2014b).

between the links of a value chain in a given area and the value chain will then extend beyond the boundaries of the cluster. Conversely, improvements in other parts of the value chain can trickle down to the cluster, triggering upgrading and innovation.

Clusters are particularly relevant in cases where there are multiple products and a few downstream integrators (lead firms), leading to more open and diverse marketing channels. This is the case, for example, in small- and medium-size feedlots in Africa. These can benefit from clustering but are not necessary candidates for the higher degree of vertical integration seen in a value chain partnership model, nor are they likely to evolve into agrifood parks, SEZs or growth corridors.

Clusters can be differentiated from agroprocessing parks and zones, as the latter serve a variety of clusters and value chains through the provision of efficient, centrally managed infrastructure and supporting services. Efforts to co-locate agro-

BOX 16

Thailand's Western GAP cluster

[Horticultural cluster, four provinces in West Thailand]

Thai agriculture and agro-industry are known for their ability to gain prominence and create value addition, with Thai cuisine also contributing to the country's brand image in this sector. However, in the early 2000s, Thailand was losing ground in the European Union market because of difficulties in complying with GlobalGAP, among other things.

This was of great concern to the Thai horticultural cluster, known as the Western GAP cluster, spreading over 35 200 ha of vegetable production in four western Thai provinces, and including Kasetsart University. In 2002, vegetable producers, exporters, major agro-industries, agricultural university faculties and government authorities belonging to the cluster came together to foster the implementation of good agricultural practices (GAPs) to defend Thailand's market access in the face of increased food safety and phytosanitary standards associated with GlobalGAP.

The cluster introduced new GAP standards first at the provincial level, which were later expanded nationally and benchmarked with GlobalGAP. Commitment to GAP led the cluster to develop its own quality assurance standards. Farm advisors, public extension officers, trained internal auditors and farm leaders were involved in implementation. Standards were tailored for different actors in the cluster. The cluster organized training for its members and fostered their active participation in public-private dialogue to find collective solutions for issues affecting the fresh vegetable supply chain in their territory.

The Thai Government has broadly encouraged agrocluster development and other important tools. Cluster development was a conscious feature of the Thailand Competitiveness Initiative in the early 2000s. The experiences of the Western GAP cluster have since been replicated in other horticultural clusters across the country. There were some concerns as to whether GAP practices in Thailand, and by extension in these clusters, were sustainable, being reliant on costly training, government grants and academic institutions. The horticultural clusters are currently working to ensure their sustainability.

Source: World Bank, 2009.

investors into agroprocessing zones or parks might be referred to as clusters but, in reality, co-location does not make a cluster, as discussed in the "clusters versus clumps" discussion below.

3.2 WHY CLUSTERS?

An introduction to cluster theory

What is the conceptual thinking behind clustering efforts? Cluster development came slowly as a focus of modern economic science, which itself was only born in 1776 with the publication of Adam Smith's *The Wealth of Nations*. Building on Smith's work, von Thünen pioneered the early analyses of location theory through his model on agricultural location detailed in *The Isolated State* (1826). The von Thünen model suggested that the proximity and accessibility to a market dictate the entire system of agricultural land use and costs. Alfred Marshall, one of the preeminent economists of the late eighteenth and early nineteenth centuries, also remarked on the clustering effect of industries and identified the economic reasons why this was the case (Marshall, 1890). These included the availability of a larger pool of trained labour, specialized skills, availability of supporting industries and the interflow of skills and knowledge among firms that seem to pass on skills and knowledge effortlessly while contributing to innovation.

In the 1990s, Harvard University's Michael Porter brought cluster development to prominence when he named it as a key driver of the competitiveness of industries and nations. In his seminal article *The Competitive Advantage of Nations* (1990), he concluded that successful economies were associated with the emergence of industry clusters, usually located in very specific geographic areas. Harvard's Institute for Strategy and Competitiveness would later document this through cluster mapping of economies representing over 85 percent of global gross domestic product (GDP).

Porter went on to suggest that the competitiveness of industry clusters was enabled by close linkages to sophisticated and demanding consumers, improvements in the factors of production, industry strategy, structure and regulation and good cooperation along with intense competition within an industry cluster and its related and supporting suppliers and cooperating institutions. This suggested to policy-makers that competitive clusters could be facilitated by good policy and attention to fostering an enabling environment conducive to their development.

Porter's cluster theory was developed around the competitiveness diamond model that included a number of forces driving the competitiveness of an industry cluster. One is the closeness of connections to sophisticated and demanding consumers who insist on quality and who spur innovation. Access to these consumers, such as the Netherlands consumers of specialty cut flowers, gives the local industry an advantage in anticipating demand or developing products and services that, having met the test of these initial buyers, will find ready acceptance globally. A second facet of the diamond is the supply factor, specifically the upgrading of inputs, suppliers, skilled workers and other quality inputs that enable an industry to respond to demanding consumers. The Kenyan example in Box 17 illustrates the importance of these "related and supporting industries", which may come from quite different industries (e.g. mobile phones or insurance) than those of simpler and traditional

approaches to value addition. A third facet of the diamond is that of industry structure, strategy and rivalry. An industry dominated by a state-owned enterprise or protected oligopoly has much less incentive to improve quality and innovate. Intense rivalry, on the other hand, drives differentiation, sharpens company strategy and encourages innovation. The fourth facet is the quality of suppliers, institutions for collaboration and related and supported industries that further strengthen the competitiveness of industry clusters. The diamond is not a checklist of factors but a way to track the dynamics of how these forces interact and drive each other in unique ways in very specific industries.

It is important to discuss here the views of economists who either ignore or do not believe in the cluster theory. Some economists believe that good macroeconomic policy and good institutions should be enough for clusters to emerge naturally, as indeed happened historically in developed countries (European Commission, 2014). Other economists fear that attempts to create or induce growth among clusters might lead to a new form of industrial policy involving subsidies or protection that might unduly skew investment in infrastructure and public goods towards industries favoured by policy-makers. Some are concerned that, regardless of good intentions, cluster policies might be captured by special interest groups that have the best access to government (Pislaru, 2004).

These are fundamental arguments that should not be dismissed lightly. Cluster initiatives should clarify from the beginning that they will not be about subsidies or protection. The dangers noted by classical market economists should be considered carefully. It is important to guard against uncritical acceptance of agrocluster initiatives as a panacea and to detect when these initiatives may be commandeered by special interests.

BOX 17

Cluster upgrading through related and supporting industries in Kenya
[Kenya, multicluster and multiregion]

Michael Porter noted the importance of "related and supporting industries" in cluster development. There are several examples from practitioners in Kenya of the importance of specific supporting industries. The entry of mobile phone providers in a wide variety of Kenyan agroclusters has enabled farmers to engage in price discovery, thereby making the best marketing choices. It has contributed to the efficiency of post-farm transportation and distribution and, most important, it has become a source of agrofinance through mobile funds transfer. Kenya is widely regarded as the leader in mobile banking in emerging economies and this has had benefits for low-income rural poor households, including formerly "unbanked" farmers.

The introduction of crop insurance for pastoralists in the Horn of Africa is now enabling herders to protect themselves against adverse weather, providing funding for the loss of vegetation to extreme heat before the full effects are even felt.

Sources: Porter, 1998; Kikulwe, Fishcher and Quaim, 2014.

Even Porter (1998) later amended his framework for national competitiveness to include the legal and macroeconomic framework and the microeconomic business-enabling environment, and his advice to leaders of emerging economies often stressed the policy and business environment. Without a sound business-enabling environment, agroclusters may well be stunted and remain underdeveloped. Yet cluster initiatives can play a role in identifying binding constraints. Second-generation cluster initiatives, such as those implemented with the assistance of the United States Agency for International Development (USAID) and the Inter-American Development Bank (IDB), do motivate economic reforms, involve the private sector and facilitate public-private dialogue.

Why agroclusters? Their origin and recent importance

Agroclusters are hardly something new. They are a recent focus in economic development and yet they date back to early permanent human settlements that were founded around the domestication of plants and animals. The decision to settle down and form agricultural clusters changed civilization forever. Further development of agroclusters would give rise to irrigation, engineering, weather prediction, storage and distribution. Agroclusters served as a repeated catalyst for the emergence of the early civilizations in Egypt, Mesopotamia, India and China. The ancient Celts were known for their ability to combine salt mining with food preservation in an early example of cluster coordination. Phoenician culture built commercial clusters that combined agriculture, manufactures, storage, trade hubs and shipping throughout the Mediterranean. The economy of Constantinople (Istanbul) can be seen as an impressive complex of clusters that included agriculture, livestock, spices and condiments. Yet the barriers and costs imposed on the spice trade to Europe would propel the emerging economies of Portugal and Spain to seek alternative routes to the source of these spices, opening up new worlds in the Americas and around Africa, initiating the first wave of agroglobalization as products never before seen in one hemisphere would now be cultivated in another.

At present, agroclusters are seen as playing an important role in most diversified economies and the search is on for methods to boost productivity, innovation, value added, and downstream products and services. Agroclusters also reflect the response of the territory to changes in agriculture, which is becoming a modern economic activity that uses skilled labour and is more and more capital and technology intensive. The once long and fragmented supply chains are becoming shorter, highly standardized and more integrated and efficient. Processing and value addition are gaining ground. In sum, the traditional agriculture-industry divide is becoming increasingly blurred (FAO, 2014a). Modern agriculture can definitely benefit from approaches, such as clusters, that increase productivity and operational efficiency, stimulate innovation and facilitate trade and new business formation.

In the 1990s and early 2000s, Porter's work led to an upsurge in cluster competitiveness initiatives globally, including in developing countries. The Competitiveness Institute (TCI), which began as an association of practitioners from the United States of America, Mexico and Europe, had developed a strong focus and membership base in emerging economies by 2005 and held its annual global conference in sub-Saharan Africa (Cape Town) not long afterwards. TCI catalogued hundreds of cluster initiatives globally.

This attention has also been reflected in the literature. Since 1993, there have been over 400 economic articles published and case studies in more than 40 different countries on cluster development (FAO, 2010); and new mapping tools and analytical frameworks towards clusters have been developed globally. However, it has been noted that only a very small percentage of the clusters studied dealt with agrocluster or agro-industry initiatives (FAO, 2010). This relative lack of attention paid to agroclusters, although surprising given the potential of the cluster initiative as a catalyst for developing country agriculture, can be explained by the fact that agrobased clusters in developing countries "are dominated by smaller-scale firms, are organized in a more informal manner, have weaker linkages among actors, face more difficulties in achieving a critical mass of firms and tend to be specialized in lower-value niches, although they are now increasingly entering higher-value markets" (FAO, 2010, p. 12).

Noting these obstacles, the changes in the agricultural sector and the growing importance of food security on the global agenda, in the last few decades many governments and the international community have expressed their commitment to the promotion of agrocluster initiatives. In particular, the cluster focus has been adopted by industry strategy working groups in the private sector and policy-makers in government, and contributes significantly to economic development.

In the mid-2000s, however, many of those in the development community started favouring a value chain approach over the cluster approach,[19] focusing especially on supply chains that are strategic for food security. Nevertheless, a simultaneous trend towards decentralization in governance, from national to regional and local level authorities, is bringing regionally specific cluster approaches for economic development back into the limelight. The cluster approach unites the focus on agriculture (typically the responsibility of a Ministry of Agriculture) with the focus on industry, infrastructure, trade and commerce (the focus of other ministries) to provide more holistic tools for addressing agricultural development.

3.3 UNIQUE CHARACTERISTICS OF AGROBASED CLUSTERS

Despite extensive literature on cluster development, agroclusters have been underrepresented, with manufacturing and services often being the focus. Yet there have been many agrocluster initiatives, a number of which will be cited here. Agroclusters are particularly important in efforts to reduce poverty, increase the productivity and incomes of rural areas and enhance food security (FAO, 2010). On the other hand, they have unique characteristics, including perishability and land tenure issues, which make the question about their potential a complex one. These issues are further described below.

Peculiarities

Agrobased clusters differ from other clusters because of their unique characteristics of perishability, coordination challenges and extreme political sensitivity and government invasiveness in many agricultural subsectors.

[19] These approaches are not necessarily mutually exclusive, but differ in terms of geographic focus and methodology.

Perishability. Unlike the clothing, motor, mining or information technology clusters, for example, agricultural clusters are often characterized by the perishability of their products, which can spoil, decay or become unsafe to consume. Fruit and vegetables are among the most perishable foods, with roughly 45 percent of total production being lost or wasted. Fish and seafood also perish rapidly, with an average rate of food loss of 30 percent (FAO, 2015). However, all categories of agricultural products are short-lived to some degree: sugar cane rapidly loses its sugar content upon being cut; ornamental flowers are not highly valued if they only last a day or two in the home; grains are perishable even though their shelf-life is usually much longer than that of most foods. This perishability requires greater value chain coordination in storage, transportation and retailing. In turn, this can help encourage value chain and cluster coordination.

Complicated governance. Efforts to coordinate agrocluster development are complicated by overlapping jurisdictions and authorities. The role of local government authorities in the promotion of agroclusters is widely recognized, but line ministries also need to be on board. Agricultural production typically falls within the mandate of the Ministry of Agriculture, whereas agroprocessing falls within that of the Ministry of Industry, exports within that of the Ministry of Trade and transportation within that of the Ministry of Transport and Public Works. The competing interests of different parts of government – which create coordination issues with agrobased clusters – are mirrored in the private sector, where farmers have their own organizations that may or may not work together with agro-industrialists and agro-exporters. They may see their interests as competing, if not diametrically opposed, if for no other reason than because an attractive price for the farmer is an unattractive input cost to the agroprocessor.

Governmental involvement tends to be far more invasive in agriculture than in other sectors, which is true not only of emerging economies but also of places such as the United States of America, the European Union and Japan, where rural voters continue to hold great sway in the political process. Intuitively, it is known that a staple food cluster is more politically sensitive than a clothing industry cluster. If clothing prices increase, it is bad for consumers, but if food prices remain so high that a significant part of the population cannot afford the food they need to survive, there is likely to be severe social disruption. This governmental involvement is especially great in commodities that are domestic food staples, such as bread in Egypt and the rest of North Africa and rice, not only in Asia, but also in the Dominican Republic and other rice-producing countries that exercise high levels of control over this important food staple, given its political sensitivity. Food crises can generate social unrest, as proved by recent events. For example, there seems to be a clear correlation between food price increases and political instability and riots in 2008 and again in 2011 in the Middle East and North Africa (NECSI, 2011). Critical agro-exports have often been a source of similar political sensitivity because of historic (if not current) government dependence on key commodities for tax revenues and rural livelihoods, such as was the case years ago for coffee in Colombia and cocoa in the Ivory Coast (now Côte d'Ivoire) and Ghana.

Coordination challenges related to systemic risk are frequent characteristics of agroclusters. Poor coordination in the supply of raw products with processing, often affected by the weather, credit availability and farmer planting choices can

wreak havoc in terms of annual variability throughout the cluster. These coordination challenges create systemic risks linked to the governance issues described above. Cluster initiatives work to close the gap between agriculture and agro-industry by addressing issues of both vertical and horizontal value chains and coordinating with public and private institutions, academic organizations and trade associations to strengthen the cluster coordination. Agroclusters set the stage for interfirm cooperation, facilitate the spread of organizational and technical innovation, and provide a mechanism for industry initiatives that benefit the entire value chain.

Low starting levels in private investment and public infrastructure in low-income economies often imply the need for external assistance. Actors along the agricultural value chain in developing countries often lack updated information, managerial competence, technology and food safety systems. At the same time, the positive externalities offered by global research institutes, new developments in packaging and mobile telephone applications mean that agrocluster initiatives can have high rates of return on investment by economic development catalysts.

Land tenure issues also affect agroclusters where communal ownership, lack of clear titles or sensitivity in acquiring land for commercial scale and modern development will limit investment and productivity. Foreign ownership of agricultural land remains sensitive in many places, from banana plantations in Latin America to Saudi Arabian ownership of land in Pakistan.

Agroclusters often have *conflict-of-interest* or *zero-sum issues* to resolve because farmers' interests in receiving high prices compete with those of processors in having low raw material costs. This leads to zero-sum lobbying in the policy arena, where farmers urge the government to subsidize production, restrict imports or provide price supports. Manufacturers tend to seek access to imports and to lower producer prices when they can, especially in the cases of oligopolistic industries such as vegetable oil, which require relatively capital-intensive investment. Quite apart from policy, agrocluster participants may find themselves working at cross purposes. When an innovative company from the United States of America sought to introduce Bolivian quinoa to the home market for the first time in the 1980s, Bolivian intermediary traders cornered the supply and drove up the prices, forcing the firm out of the cluster and into an agreement with Peruvian farmers. A cluster initiative would have sought to facilitate the export development of quinoa and expand production rather than seek a narrow short-term advantage for only one segment of the value chain. Cluster development, with its focus on developing trust and social capital, may require a non-interested actor looking out for the entire cluster to avoid actions that favour one narrow group. External facilitation and funding are often more important for agroclusters than in other industries such as tourism or information technology, which are often more self-directing and where stakeholders in the cluster may perceive common shared benefits.

Similarities with other clusters

While noting the unique characteristics of agroclusters, it is important to understand that they are similar to all cluster initiatives in other regards. They need good baseline diagnostics, informed analysis, sound strategy, well-designed strategic initiatives and appropriate policy reform like any other cluster. They follow most of the same steps, as will be described below. Agrocluster strategic actions create alli-

ances and cooperation between related firms, build the capacity of cluster members through education and skills training, influence public policy reforms and promote innovation and technological development of the cluster (FAO, 2010).

Agrocluster initiatives, as in other industries, utilize *collective action* to resolve coordination failures and to improve compliance with quality safety and environmental standards. Improving and adhering to quality and safety standards are significant challenges for low-income countries as these standards become increasingly higher. For example, in the Nashik grape cluster in India, safety standards were the main barrier to successful exports. As shown in Box 18, cluster members were empowered to overcome this obstacle and comply with international standards thanks to collective action.

Although domestic industries have formed successful clusters, the most successful agroclusters tend to be larger, of high value and export oriented (FAO, 2010). Export-oriented clusters are more profitable because demand markets are more elastic and it is easier to offset risks and costs associated with meeting international standards cooperatively through cluster-based initiatives that involve shared costs and benefits.

BOX 18

Nashik grape cluster: the power of collective action

[Grape and wine cluster, vineyards in and around Nashik, Maharashtra, India]

In India, the Maharashtra region is currently one of the largest producers of fruit and vegetables but, until recently, its grape production remained mostly in the domestic market. This was largely because of the inability of producers in the region to meet international health and safety standards for export. The grape cluster formed naturally around the city of Nashik (or Nasik, now known as India's wine capital), as a result of prime agroclimatic conditions, joined hands with farmers and large associations such as Mahagrapes – a public-private partnership (PPP) formed by grape cooperatives and several national and state government entities. The cluster was not formed by any particular caste; farmers of all castes and ethnic backgrounds participate.

A series of collective actions undertaken by cluster members were decisive for the upgrading of the grape industry in the region. These actions included the bulk purchase of inputs (e.g. biofertilizers and packaging materials), collective GlobalGAP certification and training to comply with international standards, market research and intelligence, investments in common precooling and storage facilities, and knowledge sharing and innovation supported by public agricultural universities and research centres.

With the formation and development of the cluster, and the power of collective efforts coupled with strong support from governmental and public institutions, the region found innovative ways to export high-value grapes and has achieved economic dominance in the agricultural sector over the past 20 years, particularly in the seedless grape variety. Strong financial institutions and easy access to technology, training and information have helped this cluster to maintain its competitiveness on a global scale, despite natural disasters and economic swings in past years.

Sources: Bhosale, 2001; FAO, 2010.

3.4 AGROCLUSTER PROMOTERS

The large majority of agroclusters emerge organically. However, agrocluster development projects can be driven and supported by various kinds of players, ranging from national governments, local economic development authorities, private sector associations and international donor agencies. These actors can be instrumental in helping upgrade and consolidate an already existing cluster. They can also support the cluster's internationalization process. What seems almost impossible is to induce agroclusters "from scratch". However, there are a few exceptions, such as the Chilean salmon cluster presented in Box 19.

There are important differences among cluster initiatives that can usually be traced back to their origin and to their initiators. There are roughly four variants. The first is where the industry itself, through the association of farmers, agro-industrialists and/or agro-exporters takes the initiative. The second is where the government takes the initiative through a specified ministry or other government body. The third is where a local economic development agency acts as a catalyst for

BOX 19

Chile salmon cluster: the importance of strong and constant government support

[Salmon, southern coastal Chile]

The Chile salmon cluster is one of the most frequently cited as a model agricultural cluster in Latin America. This is partly because it is a rare case of a successful government-induced cluster. Thanks to steady government support and a responsive private sector, the cluster has gone from zero to being a top global player in just a few years. It has tripled in export revenues, catapulting Chile into competing with Norway for the number one position in cultivated salmon and trout production.

The cluster owes its record as one of the fastest growing clusters (and industries) in the region to public-supporting institutions that bring innovative approaches and research to every level of the value chain. The Government of Chile has played a key role as facilitator and catalyst of the cluster by: (i) adapting and transferring key technology; (ii) promoting joint action and private-public dialogue; (iii) building trust among cluster agents; and (iv) providing public goods such as the enforcement of regulations, improved coastal zoning, improved animal health, efforts to enhance sea transport, creation of registries for fishing nets, suppliers and vaccines, and R&D efforts.

The cluster's collective efforts in developing and committing to strict monitoring tools on quality, environment and good management practices stand out as model cluster practices for sustainable success.

Regrettably, this success story is not easily replicable. Many ingredients for success are not easy to find in most countries and industries: unwavering and intensive public support, a receptive and competitive private sector and a fruitful dialogue that fully enables the industry to realize a significant market opportunity.

Source: FAO, 2010.

industry competitiveness initiatives and manages to provide facilitators and experts. The fourth is where an external economic development agency or project finances a cluster competitiveness initiative including agribusiness clusters. Each variant introduces different kinds of positive and negative features.

The private sector. Some agrobased clusters grow and consolidate with the arrival of foreign investors. FDI can often play a catalytic role and in some cases spark the beginning of a new cluster, as shown in Box 20. However, more important than FDI are the private sector value chain actors and input suppliers who take local leadership and ownership of cluster initiatives, and design and implement initiatives related to market linkages, new products, workforce development, supply chain management, R&D and new competitiveness strategies (FAO, 2010).

Private sector leadership tends to be the rule when it comes to high-value products. Agrocluster initiatives are often more dynamic and market-focused when led by the private sector. Moreover, the private sector tends to be able to lead in high-value products rather than in basic commodities or food staples. That being said, coffee growers in Costa Rica and elsewhere were able to focus on quality and product differentiation, as were cocoa producers in Trinidad and Tobago. Private sector leadership is critical for rapidly changing markets. The rubber manufacturing cluster in Sri Lanka developed because of the innovative new market penetration

BOX 20

Sri Lankan rubber cluster

[Rubber cluster, Colombo and rubber-growing regions, Sri Lanka]

As part of the USAID-funded Sri Lanka Competitiveness Initiative, rubber growers, traders, manufacturers and exporters came together in 1999, engaged and paid for a cluster coordinator respected by the industry, and began diagnostics and strategizing with international expertise provided by the project.

Manufacturing companies such as Loadstar (a Sri Lankan-Belgian joint venture, and one of the most important players in natural rubber production in Sri Lanka) had already begun to export manufactured products using natural rubber, and had captured a substantial share of the global market for all-rubber speciality tyres. Other companies followed this lead by focusing on new manufactured products for export that could be made from rubber.

The cluster then went on to implement a number of market intelligence, production and policy initiatives. During this time, there was a significant upsurge in exports of rubber manufactures that came to dwarf the export values of rubber itself, the raw material having formerly been a principal Sri Lankan export commodity. Indeed, the use of Sri Lanka rubber by the manufacturing industry began to come up against supply constraints, encouraging further expansion of rubber plantations. This cluster emergence also freed the rubber industry from the boom-bust commodity price cycles that had plagued the industry and provided a secure and ready market for rubber plantations.

Source: USAID, 2002.

success of one leading private sector company, which led to a cluster of other companies focusing on manufacturing based on the unique characteristics of raw rubber and changing global cost dynamics.

Governments. There is a long record of government support to clusters, particularly in developed economies. One of the earliest and most interesting initiatives launched by governments to foster clusters is that of the United States of America's "Cooperator Program". In 1954, years before cluster theory would come to the fore, the United States Government began providing cofunding to agroclusters through this programme (Box 21). The initiative is an example of how a PPP based

BOX 21

United States of America's "Cooperator Program"

[Multicluster/multiregion, United States of America]

In the 1950s, the Government of the United States of America took three major initiatives that would have a transformative effect on many agroclusters in the country:

- The creation of the Foreign Agricultural Service (FAS), which would come to gather state-of-the art crop supply and market intelligence.
- The enactment of Public Law 480 of 1954, which created the basis for food aid to send abroad for relief and development purposes.
- The launch of the Cooperator Program, under which the Government agreed to provide matching funds for export market development to any agrolivestock group that could come together, raise matching financial resources and effectively implement market development initiatives subject to audit. The Government did not specify what these initiatives should be, leaving the details to the private sector. This programme put the private sector industry cluster in charge of export strategy development, while the Government provided encouragement, cofinancing and market intelligence through FAS.

Many weak associations became stronger as a result. Some strong farm marketing organizations existing today were formed then to take advantage of this opportunity. The result was a remarkable cluster development process in areas as diverse as soybean, cotton, wheat and horticulture. Government funding provided in some cases the catalytic convening motive.

The lesson from this case is that a government may have a unique role in convening and providing catalytic resources, but the private sector knows its products and markets and needs to take the lead in setting priorities and implementing initiatives. As the late Gwynn Garnet, one of the principal promoters of the Cooperator Program, said: "We considered setting up a US Agricultural Export Agency and thank goodness we didn't do that. We also considered hiring contractors and consultants to do this market development, and thank goodness we didn't do that". With proper guidance and oversight, it is the private sector that knows best.

Source: Vogel, 1985.

on sound principles where the government serves as a catalyst and the private sector assumes leadership in implementation, can foster cluster-type initiatives and leave a strong imprint on the agro-export record of a nation (Vogel, 1985).

Cluster initiatives have also mushroomed in the European Union over the past two decades on both national and regional levels (e.g. the European Cluster Excellence Initiative) (Christensen, Lämmer-Gamp and Köcker, 2012); Japan (Yoshida and Nakanishi, 2005); Canada (Institute for Competitiveness & Prosperity, 2015); and other high-income economies. A long list of middle- and low-income economies have followed suit.

Government involvement is more prevalent in commodities that are key to the economy, and in domestic food staples. Governments tend to play a leading and even dominant role in cluster initiatives focused on basic food staple commodities such as rice, maize and wheat, and vegetable oils. For example, the Indian Government asked a national dairy model, led by Dr Verghese Kurien, to extend the dairy cooperative approach to oilseeds (and, as it has transpired, with much less success).

Heavy economic dependence on one particular crop tends to lead to government involvement, such as coffee in the case of Colombia, cocoa in Ghana and sugar in the Dominican Republic. In the United States of America, the Government has historically been involved in schemes to ensure floor prices for commodities such as maize and wheat. In emerging economies, such as the Dominican Republic, extensive involvement in staples such as rice included allotment of land, price supports, subsidized warehousing and even provision of inputs to agrarian reform farmers, while in other sectors such as meat there has been a thriving private sector that has sought to innovate (see Box 22).

Local governments and local economic development agencies have often been at the forefront of cluster development initiatives, many of which have included agro-clusters, even if the literature has not always recorded their development. Notable

BOX 22

Dominican rice cluster

[Rice cluster along the Yaque del Norte River in the Dominican Republic]

The Dominican Republic is home to a rice cluster that faces serious competitiveness challenges, as noted in a recent unpublished study for IDB using the "producer support estimates" methodology, which indicated both levels and kinds of subsidies inherent in products throughout Latin America (Murphy *et al.*, 2012).

Agrarian reform farmers, the state agrarian reform agency, subsidized warehouses, and state-influenced prices for inputs and rice procurement have led to a cluster that is not competitive and hard to dismantle through the use of market prices alone. Ultimately, the success of clusters is measured by their results in terms of productivity and sustainability while stability in the rice sector has been highly subsidized.

Source: World Bank, 2009.

among early pioneering efforts were the Catalonia pork cluster and the Nashik grape cluster in Maharashtra, India. In the latter, strong support from government and public institutions, mostly at state level, led to the export of high-value grapes that have achieved a certain economic dominance in the agricultural sector over the last 20 years (discussed in Box 18) (Bhosale, 2001).

Another notable example is that of the San Francisco River Valley Development Agency (CODEVASF), a public company established in 1974 to promote the development and revitalization of several river basins in northeast Brazil. CODEVASF work has contributed in drastically changing the shape of economic growth for the northeast region, characterized by high poverty rates, chronic droughts and a semi-arid climate. CODEVASF has the twofold mandate of facilitating an adequate structuring of productive activities for economic and social inclusion, and fostering the sustainable use of natural resources. In the 1990s, CODEVASF triggered the creation of the Petrolina-Juazeiro mango and grape cluster, thanks to the allocation of irrigated land to smallholders to achieve a critical mass of small and medium growers to produce irrigated fruit; capacity building and training of farmers; and the promotion of new technologies (FAO, 2010).

Finally, in emerging and transition countries, *economic development agencies and financial institutions* have often supported host governments in the design and financing of national competitiveness and cluster initiatives, including agrobased clusters. Specifically, IDB, the United Nations Industrial Development Organization (UNIDO) and USAID have been particularly active in supporting many cluster initiatives since the late 1990s. For example, IDB has devoted nearly US$400 million to projects focusing on cluster competitiveness and export-led poverty reduction (FAO, 2010). One example is the US$230 million loan that IDB granted to Argentina in 2011 to improve competitiveness of non-Pampa rural economies through infrastructure and agrocluster development (IDB, 2011). Many of the cluster projects facilitated by USAID were also in the agricultural sector: examples include the tea, rubber and spices clusters of Sri Lanka, Romania's agritourism cluster and the Vietnamese horticulture cluster. National competitiveness councils, which often focus on cluster development, have been formed in many countries and a global federation of competitiveness councils now exists. UNIDO has also been involved in the implementation of cluster and network development projects in over 20 developing and emerging countries over the last two decades (UNIDO, 2013). Some of UNIDO's sponsored cluster initiatives have targeted the agribusiness and agro-industrial sectors, for example the cocoa cluster in Nicaragua and the oilseed cluster in Ethiopia. In 2009, the World Bank released a comprehensive and detailed toolkit and guide for developing cluster initiatives for competitiveness (World Bank, 2009). These initiatives, coupled with strong cluster policies from governmental institutions, are crucial for local small-scale producers since they increase productivity and enable entry into a higher value-added global market.

One tentative conclusion from the last 20 years of cluster initiatives is that it is indeed *difficult to "create" clusters*. Government policy should usually refrain from trying, at least in directive ways. Nonetheless, agrocluster initiatives can be very useful for both the private sector and governments to conduct baseline benchmarking leading to strategies, policies and institutions that will facilitate ongoing improvements in productivity, efficiency and innovation.

Another element that governments need to take into account is that *cluster initiatives must be tailored* not only to the type of crop, industry or region but also to the *stage of economic development and the social contexts of a country* (FAO, 2010). Cluster development initiatives are notably different for countries at different stages of development. As seen earlier, cluster development continues to be vital to further progress and productivity also in high-income countries, even if the overall share of GDP from agriculture and agribusiness declines. For example, Denmark has one of the most successful sets of agroclusters in the world as measured by value added, exports and continued innovation ([The] Economist, 2014). Danish policies continue to support innovation and technology in this sector.

For low-income countries largely dependent on agriculture and natural resources, where populations are mostly rural, agrocluster development can contribute to value added in concert with initiatives mentioned in other chapters of this book, such as agroparks or corridor development. Cluster development leads directly to off-farm jobs, improved farm productivity, reduction in post-harvest losses, growth

BOX 23

Dominican cigar and tobacco cluster

[Cigar and tobacco, Cibao Valley, Dominican Republic]

Cluster development helped the Dominican cigar industry to understand its competitiveness challenges better. Long an exporter of quality tobacco and premium cigars, much of the industry's original competitive advantage was based on the ideal soil, climate and growing conditions in the Dominican Republic, together with low-cost labour. Because of the embargo of the United States of America on cigars from Cuba, the Dominican cigar industry came to be the number one exporter of cigars in volume. And even though Cuban cigars had a better brand image, Dominican cigars often did quite well in blind taste tests with their Cuban competitors.

Cluster analysis revealed that the Dominicans faced important challenges related to input supply and country/brand image. The Dominican Republic formerly imported the high-value critical outer "wrapper" from places such as Connecticut, United States of America. The wrapper cannot easily be changed, since it is vital to the perception of quality. The industry, working with a local agricultural university in Santiago de los Caballeros (the municipal centre of the cigar country in the Cibao Valley), made great progress in developing a high-quality, locally produced wrapper. Dominican free trade zones, known for their textile production, began to make boxes and packaging for the cigar industry. To deal with the brand image weakness, the Dominican cluster launched a "cigar country" advertising campaign in the specialized global media.

The lesson is that the cigar cluster centred in the Cibao Valley did not leave its competitiveness to chance, but systematically analysed its weaknesses and then designed and implemented initiatives to improve them, e.g. upgrading supplier inputs, cooperating with local research institutions, and actively managing its global brand image.

Source: World Bank, 2009.

in GDP and regional economic development. Clusters often develop in agricultural towns or on the outskirts of major urban centres of demand for food and raw agricultural products. For agrobased clusters in developing countries, factor conditions such as natural and human resources are fundamentally important to cluster success.

Agrocluster development may have different and more sophisticated characteristics for middle-income countries, as noted in the cases of Chile and Thailand. Increased capital resources and social capital are the main factors of cluster development for these countries but they also include a greater complexity of institutions, research, market linkage development, upgrading of standards for the crop or sector, product differentiation and adding service features to products. A growing set of processed and industrialized products becomes evident with brand name differentiation for the companies producing them. There tend to be denser and more sophisticated connections between agroclusters and their supporting universities, as in the case of the Dominican Republic with the cigar and tobacco industry, noted in Box 23.

3.5 BENEFITS AND CHALLENGES OF AGROCLUSTER INITIATIVES

Benefits of agroclusters

Cluster-based development provides a comprehensive approach to building sustainable and resilient agribusiness value chains that are backed by related and supporting industries. Clusters often spark what is referred to in FAO (2010) as a "virtuous circle of development", advancing industrialization in the sector and facilitating the spread of innovations in agribusiness, thus attracting foreign investors that subsequently bring new technology and business skills to the table. The approach helps to avoid failures in projects that focus too narrowly on farmers or agro-industrial firms, and provide a pathway of coordination among a variety of agricultural actors.

The major benefits of agrocluster initiatives, when implemented appropriately, include the following:

- *Inclusive growth and reduction of poverty.* Agriculture is one of the most poverty-ridden sectors, characterized in many places by low-skilled labour, weak institutions, low margins and farmers as "price-takers", producing undifferentiated commodities and trapping producers in a low-income cycle. Agrocluster development is spurred by rapidly changing technology and competitive transportation costs. Thus, cluster-based approaches, with their emphasis on innovation and the creation of value networks, can help break the poverty cycle (FAO, 2010).
- *Comprehensive approach to improve an agricultural system or region*. Donors and governments, when acting on one segment of a value chain, often improve production but with resulting imbalances downstream, such as the early investments in coffee growing in Viet Nam, which disrupted the global industry and led to severe price declines. Agro-industrial projects have often led to situations of supply imbalance. A comprehensive cluster approach seeks to avoid these imbalances.
- *Enabling change among smaller or less-sophisticated producers.* Clusters allow smaller groups to achieve larger-scale economies and diffuse costs related to skills training, research and knowledge dissemination, certification and quality standards processes, which can be quite expensive and involve a higher risk for farmers acting individually. Farmers and small and medium enterprises

(SMEs) can also adapt more quickly to changes in agribusiness and agro-industrial demands (FAO, 2010).

- *Building social capital and productive public-private dialogue*. A cluster allows stakeholders to discuss key strategic barriers and facilitators of an industry's competitiveness and strategize effective solutions cohesively. In the process, trust is built along the value chain together with the ability to coordinate and cooperate. For example, the Pakistan Dairy Development Company is a PPP established to foster coordination and collective action (e.g. by putting dairy chillers in poor rural villages and organizing a commercial procurement network) among members of the Lahore dairy cluster: farmers, dairy processors, government policy-makers and donor agencies (Walker, 2007). As agro-clusters develop, advantages grow to include the increase and transfer of key skills, knowledge and techniques among a variety of partners; the ability to coordinate activities; social capital improvement brought on by relationships that make agrocommerce work effectively; and a common pool of training providers, research institutes, infrastructure and technology.
- *Facilitating initial entry and subsequent expansion in new global markets*. PPPs such as the Cooperator Program mentioned earlier can give a critical early boost for a private sector to assume ownership of its global competitiveness. This programme led to world class institutions run by various agro-industries. Subsequent success in global markets has dimmed the recognition of the early importance of these important programmes (Vogel, 1985). Principles such as these have motivated similar initiatives in other countries, inluding many agro-export competitiveness initiatives in Latin America, assisted by USAID and IDB.
- *Cross-cluster impacts.* Agroclusters have cross-cluster impacts, often improving the manufacturing base and contributing to the quality of the tourism sector. Examples are agritourism in Romania, cigar tourism in the Dominican Republic and tea tourism in Sri Lanka. They create initial light manufacturing capacity and infrastructure in low-income countries with skills and infrastructure transferable to other light manufacturing industries.

Having described the rationale for agrocluster development and the potential benefits, it is important to consider the challenges and difficulties in their design and implementation.

Challenges of agrobased cluster initiatives

As defined at the beginning of this chapter, agrobased cluster initiatives are largely beneficial forms of economic development but there are *significant challenges and limitations*. For example, scale requirements may put small-scale farmers at a growing disadvantage (FAO, 2010). Other limitations include the following:

- *Keeping up with market demands.* The organizational structure and linkages of firms and clusters in developing countries are often weak, making it difficult for cluster members to adapt continuously and competitively to evolving consumer demands. Continuous training and strengthening at all levels of the cluster are needed to remain competitive. Cluster success, given the current competitive marketplace where product differentiation is essential, also relies

on creating regional/cluster identity and branding, and launching collective communication campaigns in order to establish an international reputation (FAO, 2010).

Agroclusters can facilitate the transition from producing basic commodities to high-value, agricultural products differentiated in terms of quality attributes. The Colombian Coffee Federation, which had achieved a number of successes in value chain coordination and global branding, completely missed the revolution in consumer trends and coffee retailing exemplified by Starbucks. Only recently has the Federation sought to establish its own Juan Valdez brand to capture economic value, brand recognition and market insights. Region/cluster-specific and even plantation-specific coffee procurement completely challenged the generic "Colombian coffee" brand, which had been notably successful prior to that time in capturing value in demanding markets such as France.

Some agroclusters are associated with a geographic indication (GI) that differentiates their products on the basis of unique quality attributes linked to the places where they are produced (cluster area). These clusters have to build up a reputation over time and gain market positioning by associating the GI product with specific values relevant for each consumer segment (e.g. tradition, taste, environmental responsibility or social equity). In this regard, using a GI requires formal identification of authorized users within the cluster that gives the consumer the possibility of recognizing the related values of the products (terroir, origin, cluster) and prefer them (FAO and SINER-GI, 2009–2010).

- *Maintaining pace with foreign competition*. Foreign competitors, particularly from more developed countries, typically have an advantage in intimate access to new information, technology and innovative strategies in the agriculture and agribusiness sectors (they are often the countries developing these strategies and funding research). Developing countries therefore face a challenge to catch up, leapfrog or otherwise insert themselves into global value chains, either by inviting FDI, by encouraging local clusters to pursue export initiatives or by public policies, investments and incentives.
- *Attracting FDI to the agricultural sector.* Despite the recent mobilization of international organization funds for agriculture and cluster development, as little as 5 percent of official development assistance went to agriculture in 2009, and FDI in agriculture was also low (OECD, 2009). According to FAO (2010), there is still room to foster a welcoming environment for FDI in the agricultural sector, although political sensitivities to foreign landownership remain.
- *Clusters are only as good as their institutions*. Agroclusters are only successful insofar as the institutions that support them are strong, free from corruption and from cultural norms such as clientelism that may tempt ulterior motives, and capable of providing the financial and political support needed to foster cluster growth and development. That said, institutions (particularly governmental institutions) should not dominate clusters, as detailed in the Vietnamese case study on coffee clusters in Box 24. Rather, a decentralized approach offers the best balance between support and flexibility to foster cluster growth.
- *Strong internal motivators*. Clusters often lack what is referred to in FAO (2010) as "clusterpreneurs" or champions, whose members are able to articulate the vision and objectives of the cluster clearly, and motivate other mem-

BOX 24

Government-mandated efforts to create clusters: coffee in Viet Nam

[Viet Nam coffee-growing regions]

Viet Nam carried out a major effort to expand coffee production, mainly of robusta varieties (less valued than arabica but still important) in the highland areas of the country. Large tracts of land in the mountainous regions were planted with coffee, resulting in huge harvests several years later that inundated the global market and caused a huge price decline. Coffee farmers in the early years lost money and farmers elsewhere in the world also had a difficult time. The lack of a cluster approach led the government to rethink its policy. Over time, Viet Nam has been able to consolidate its position as one of the major global coffee exporters, in part owing to the promotion of coffee clusters, mostly in the central and southern highlands, namely in the Gia Lai and Dak Lak provinces.

A cluster approach, starting from the market and working back to production, could have avoided several years of painful adjustment. Lessons from this can be applied to Viet Nam's impressive shrimp processing industry in the Mekong delta. Avoiding charges of antidumping and meeting quality, environmental and labour standards require a cluster approach to be successful. Gains will include sustainable success in the processed goods market, while complying with environmentally sound agricultural practice (Anh *et al.*, 2011).

Source: World Bank, 2009.

bers also to be enthusiastic. While foreign donors and cluster competitiveness facilitators have sought to fill this gap, there is no substitute for entrepreneurship and for domestic leadership, which is essential to sustainability.

- *Environmental damage and labour standards*. While clusters can be used strategically to combat harmful environmental practices, they can just as likely contribute to these practices and increase pollution. In efforts to remain competitive, particularly on a larger scale, clusters in developing countries may negatively impact their environments. For example, a livestock industry may well focus on the development of a leather industry that will bring a number of environmental issues in tow. Additionally, it is unclear what effects clusters can have on labour standards or on land tenure by small farmers. Cluster members should be conscious and cautious with regard to cluster impacts on the environmental and social standards of their country (FAO, 2010).
- *Not diversifying.* An overly narrow focus on one or two products can keep a cluster from diversifying, making it more vulnerable to changing market demands. Therefore the focus on innovation and competitiveness is crucial, as is keeping abreast of medium- and long-term product and market trends.

3.6 HOW TO IMPLEMENT SUCCESSFUL AGROCLUSTER INITIATIVES

The remainder of this chapter will focus on how to implement agrocluster initiatives, based on practical experience with over a dozen agroclusters representing various stages of development, cultures, linguistic groups and continents. What follows may be considered a kind of practitioner's manual for those involved with cluster initiatives in the agricultural sector.

Initial stages for launching cluster initiatives

Observe and map the existing cluster network. When agrocluster initiatives are launched by governments or economic development agencies, it is important to observe carefully how the industry is already organized to support its producers, dialogue with government and advocate for improvements. It is much better to build on and reinforce an existing industry leadership network than to create a new or competing one. Unless the existing associations are hopelessly mired in conflict or harnessed to the past in their advocacy of protection, subsidies or special exemptions, experience has shown that many industries are receptive to good diagnostic work and are capable of raising their strategic sights. The associations representing farmers, processors and exporters can often be assembled to work strategically in order to strengthen the entire value chain and this should be attempted before parallel attempts are made. The motto at this stage should be "observe carefully and first of all do no damage".

Convene the cluster and establish the right psychological contract. The first stage of an agrocluster competitiveness initiative is to convene the cluster leadership, including input suppliers, producers, traders, processors, exporters and those involved in research, extension, logistics and finance. The compelling reasons do not just include a current crisis but could be the awareness of new opportunities such as market access under new trade agreements. Opportunities to dialogue with government officials offer another compelling reason to convene and simply not miss out on new initiatives affecting the industry. Access to international technical assistance may provide a compelling reason. At this stage, it is important to craft the appropriate "psychological contract" under which the participants must agree to assemble the entire value chain and adhere to certain conditions such as active leadership of the initiative. Other conditions include an agreement not to focus on protection or subsidies but rather on policies and strategic initiatives that will boost productivity, innovation and growth. If the cluster agrees to these conditions, the process can go ahead.

Cluster diagnostic tools

In follow-up meetings, industry leaders apply a series of diagnostic tools,[20] often aided by local or international experts. A cluster should not be overstudied. If there is a delay of six months to a year while things are being studied, participants may lose interest and the cluster initiative may be seen as too academic and irrelevant. On the other hand, without proper analysis, there is the risk of spending time and money on initiatives that will not succeed. Sometimes, prior studies point the way and validate initiatives that are considered to be "no brainers" or "low-hanging fruit" and the momentum generated by initial productive cooperation in launching initiatives can develop credibility for the facilitators and momentum for the cluster actors. For example, the Pakistani dairy cluster managed to negotiate an immediate

[20] This section is based on the World Bank (2009) publication prepared by M. Shakya, K. Murphy, J. Stokes and K. Kim and peer-reviewed by C. Ketels. Other resources for further reading can be found on the Web site of The Competitiveness Institute, including *The Cluster Initiative Greenbook* (Sölvell, Lindqvist and Ketels, 2003), and the Harvard Institute for Competitiveness and Strategy.

lowering of tariffs on dairy chillers so that these could be put in villages to improve the quality and quantity of milk supply while enhancing village small farmer income. An overview of the diagnostic tools to be discussed can be found in Table 5.

Product/market segmentation. This tool is recommended to be first among those applied so that the cluster and facilitators understand in which segment of the market they are participating (current or aspirational) and with which products. Pakistan, for example, competes in the halal meat export market, although with emphasis on carcasses rather than processed meat where it could have major new opportunities. Careful definition of the product/market segmentation of the cluster is a prerequisite sequentially before moving on to other tools, lest the subsequent diagnostic tools measure the wrong segment or compare apples with oranges (World Bank, 2009, Tool 2, p. 18).

SWOT and GAP analyses. After product/market segmentation come two simple and participative tools. The SWOT analysis is known to most people and will not be dealt with in detail here. It is easy to do and gets cluster participants involved in a relatively fun and straightforward exercise, but it does not in itself prioritize any of the items in the four categories or analyse causality of why these exist. In GAP analysis, the industry identifies the key factors for competitiveness and then rates its industry cluster with regard to the three or four most important competing clusters. This is also a relatively fun and participative exercise and gets cluster participants involved in analysing their industry. It can also point international industry experts and competitiveness analysts in the right direction for more rigorous analysis (see World Bank, 2009, Tools 3 and 4, p. 21).

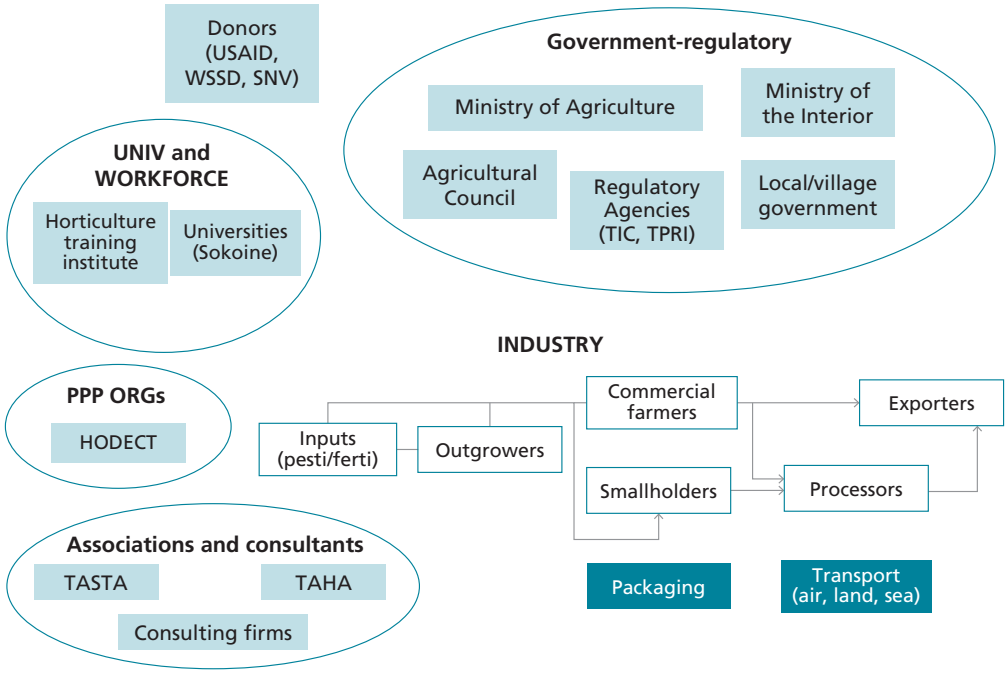
Benchmarking analysis is a more quantitatively rigorous methodology that documents GAP analysis. Tools may include a relatively sophisticated domestic resource cost analysis, which shows the cost of getting a product to the border with regard to competitors. More common is a simple comparison of one cluster with

TABLE 5
Examples of cluster diagnostic tools

1. Product/market segmentation
2. SWOT (strengths, weaknesses, opportunities and threats) analysis
3. GAP analysis
4. Benchmarking analysis
5. Cluster mapping
6. Value chain analysis
7. Cost-price ladders
8. Relative market position
9. Competitive positioning
10. Market trend analysis
11. Competitiveness diamond

Source: World Bank, 2009.

FIGURE 15
Horticulture cluster map of the United Republic of Tanzania



Source: simplified version adapted from Tanzania Private Sector Foundation, 2009.

competing clusters using quantitative analysis such as productivity, cost, market share and other metrics. Agro-industries in emerging economies may be aware of global market standards and of their own costs, but they have nearly always not done rigorous benchmarking of their performance relative to competitor countries (see World Bank, 2009, Tool 4, p. 24).

Cluster maps identify the current and potential actors in a cluster, their inter-relationships and possible cluster gaps. The cluster map illustrated in Figure 15 is an example of a simple cluster mapping exercise.[21] Relative strong and weak points in a cluster (well-developed versus underdeveloped links in a value chain and related and supporting industries) are highlighted with either bold, normal or dotted lines (when in black and white), or green, yellow and red outlined boxes when shown in colour. This visual picture of a cluster can be a guide to investment promotion priorities or indicate opportunities for strengthening the competitiveness of a given

[21] Cluster maps in this context typically illustrate an existing set of actors in a geographically bound area. The map shown in Figure 15 is unusual, and highly conceptual, in depicting the cluster actors in a national context. A more precise mapping could show several regional clusters.

cluster. An example of a simplified version of this third kind of cluster map (and the one normally used for diagnostics) is presented in the figure (see World Bank, 2009, Tool 1, p. 14).

Value chain mapping identifies the different players and maps in the industry, an exercise that often reveals cluster "gaps" and binding constraints. In the process, the useful data gathered can make an appealing case for the importance of the industry in terms of value added, job creation, nutrition and export revenues (World Bank, 2009, Tool 6, p. 31).

Cost-price ladders show the cost buildup from inputs through farm production, transportation and distribution. When cost-price ladders are presented from competing clusters in other countries they can be extremely revealing. They are also revealing in that they show the value added at each stage, and compare ladders from other countries to pinpoint and quantify competitive strengths and weaknesses. They demonstrate the source of an agrocluster's advantages and disadvantages. For example, it may be cheaper to grow flowers in Uganda than in Kenya but transportation costs may be higher. Such an analysis helps a cluster to pinpoint initiatives that can bring their costs in line with the competition. Furthermore, cost-price ladders identify opportunities for forward or backward integration and stimulate brainstorming about how to capture more of the value in a particular value chain. For example, the Colombian cut-flower exporters were able to capture value normally added by supermarket chains by assembling and prepackaging bouquets in Colombia and sending them directly to retailers while innovating in packaging and shipping (World Bank, 2009, Tool 8, p. 40).

Relative market position and competitive positioning are tools showing how an agrocluster competes with other similar agroclusters in cost, quality, product scope, differentiation and other factors. Relative market position is a visual graphic usually showing several features, including value of production and two or more competitive dimensions. The two tools have similar uses and are often used together (World Bank, 2009, Tool 8, p. 40).

Market trend analysis focuses on trends in global demand that may or may not be perceived by the local industry. An intimate and nuanced understanding of markets helps an agrocluster to respond in a timely fashion to newly emerging market opportunities. For example, consumer preference for convenience coupled with higher disposable incomes in many emerging economies has led to an expansion of food processing plants and fast-food restaurants. International market analysis is equally important. The Colombian Coffee Federation woke up very late to the massive changes in coffee retailing brought about by Starbucks and others that eroded the value of generic country branding by creating other differentiators. Quinoa producers in the *altiplano* of the Andean plateau have been able to capitalize on the trend for healthy food. Close observation of end-market trends can create opportunities for agrocluster leaders, resulting in greater value added (World Bank, 2009, Tool 7, p. 35).

Competitiveness diamond. The Porter, or competitiveness, diamond, referred to in the section on cluster theory, is a powerful tool that is commonly misused and not always completely understood by those trying to apply it. In the hands of a skilled facilitator and competitiveness expert, the Porter diamond can help identify competitive strengths and weaknesses and prioritize strategic initiatives. The model

is dynamic, addresses causality and helps prioritize. It explores ways to create linkages with sophisticated and demanding consumers whose signals can help improve quality and innovation. It examines the factors of production and how these can be upgraded. It addresses company and industry strategy in the context of the existing structure of a specific industry. It also analyses the state of cluster development and how it speeds or impedes the competitiveness of the industry in question (World Bank, 2009, Tool 5, p. 26).

Agroclusters: the four steps of implementation

The diagnostic tools described above quickly lead to a strategy resting on a foundation of data and analysis. This strategy in turn leads immediately to the identification of strategic initiatives designed to reposition in the industry in global markets, improve productivity, enhance efficiency or introduce innovations. Strategic initiatives may include market linkage initiatives, product and service innovation, infrastructure, upgrading in product quality, workforce development, adoption or enforcement of new quality standards, improvements in packaging and lower supply chain costs. Examples of illustrative strategic initiatives implemented in agrocluster initiatives can be found in Table 6.

Identifying strategic initiatives. Strategy development begins with commercial opportunities and once these have been identified, the true policy constraints to implementation come into focus. When an industry starts with policy as its focus, there is a tendency to default to the usual laundry list of complaints about government policies, taxes, regulation, red tape and the like. There may also be a tendency to blame the government policy for any ills affecting the industry. Strategy precedes policy dialogue. Only after identifying industry competitiveness opportunities can leaders identify the binding policy constraints. Here, consultants can assist in articulating the case of the industry before the government and providing evidence through a cost-benefit analysis that features the future impacts on jobs, incomes, GDP, foreign exchange and even tax revenues.

Financing agrocluster initiatives and mobilizing investment. Some strategic and policy initiatives will require substantial investment by firms, industry associations, financial institutions, economic development agencies or governments. Facilitating the financing of these initiatives is a skill very different from strategic analysis but just as

TABLE 6
Illustrative strategic initiatives and examples

1. Market linkage initiatives	Colombian cut-flower cluster
2. Policy initiatives	Thailand GlobalGap implementation
3. Raw material supply development	Pakistan dairy cluster
4. Testing of product features	Sri Lankan coir cluster
5. Cluster organization	Viet Nam horticulture cluster
6. Product origin branding	Sri Lankan spice industry

Source: see World Bank (2009), with authors' elaboration based on personal in-country experience in advising these agroclusters.

important. Agrocluster development projects need to keep close track of investments generated in the course of implementing strategic initiatives and policy initiatives.

Monitoring and evaluating results. As initiatives are implemented, it is important to keep track of the investments made and subsequent impacts on industry expansion, jobs, export revenues and other beneficial impacts, including impacts on women and on disadvantaged rural areas. This M&E will help sustain interest in the industry initiatives and will validate prior technical support and policy reform. These indicators may be related to process, actions, investments and results.

Ensuring sustainability. A key step in the process is to ensure the sustainability of these initiatives in the future, since competitiveness is a dynamic and never-ending process. Organizational vehicles vary from informal cluster cooperation to a legally enshrined industry cluster grouping. This may take place through an existing industry association or umbrella association. In cases where the industry competitiveness initiative has benefited from external project finance, it is important to look at what will happen after project termination. The political and social sustainability of these initiatives can be fostered through "media mindset" campaigns that present the policies being undertaken and show how they will benefit the average person. This helps to ensure broad popular support for the economic reform agenda often associated with cluster initiatives and helps prevent it from being reversed by a subsequent government. Involving an opposition party in the agrocluster initiatives, if feasible, or the key economic and agricultural advisors to other political parties contributes to bipartisan support.

3.7 LESSONS LEARNED FROM SUCCESSFUL AGRIFOOD CLUSTERS

What needs to be done

Clusters emerge organically, making it hard for outside actors to induce them. Government leaders sometimes act as though new industry clusters can be created by fiat or by directing public investment in a specific direction. Yet the complexity of cluster development makes it hard to induce clusters. And there are often unintended consequences. Viet Nam's focus on developing coffee regions had unintended consequences of oversupply in global coffee markets.

Cluster development can be successfully facilitated. Governments very often observe an emerging success and then actively help to facilitate it. Cluster cooperation can be extremely important in making significant advances.

Private sector leadership is usually key to dynamic cluster initiatives but examples abound of public initiatives as well. Successful initiatives seem to have "champions" that help mobilize a critical mass of cluster leaders. It is the private sector that understands market opportunities, production constraints and value chain obstacles. Active involvement in strategic initiatives is usually critical.

Cluster initiatives can serve as a catalyst for private sector investment. Where successful, mobilization of private investment dwarfs modest investments in "cluster mustering" and technical assistance. The sustainability of cluster initiatives may come in many organizational forms including associations, Non-governmental Organizations (NGOs) and informal cluster organizations.

Successful cluster initiatives usually require the right "psychological contract", by which the cluster agrees to assemble the entire value chain so as to work for the benefit of all stakeholders, including farmers. Part of this psychological contract

involves an agreement not to seek subsidies or protection from the government. Cluster initiative participants also agree to participate actively in the benchmarking, diagnostic and strategy process and in the implementation of strategic initiatives.

Strategy drives policy. It is important that clusters ground their strategies in commercial market realities and identify economically sustainable ways of generating value in these markets. Once these opportunities have been identified, the policy reforms required to facilitate competitiveness become much clearer. Good strategy reveals the desirable prioritization and sequencing of policy initiatives of investment in social goods.

Effective public-private dialogue happens when an industry speaks as one voice, is informed by evidence, presents a sound value proposition and is willing to take ownership of the process and invest its own resources in the solutions. The counter-example of the Sri Lankan tea industry saw tea producers advocating restrictions on tea imports while the tea processors and traders sought to import a variety of grades to meet different demands in international markets. In such a situation, it is difficult to have a coherent public-private dialogue.

Agrocluster development initiatives in basic staples seem more challenging. While there are many examples of cluster initiatives in horticulture, fisheries, meat and other high-value products, fewer examples exist for commodity staples for domestic consumption such as rice and wheat. However, there are examples even here of creative initiatives related to crop insurance, bonded warehouses, price discovery (often through cell phones) and transportation innovations.

BOX 25

Failure to elicit cluster cooperation in the Colombian leather cluster

Fairbanks and Lindsay (1997) described their failure to achieve cluster cooperation in the Colombian leather industry and used the following anecdote as the antithesis of good cluster cooperation. Seeking to improve the competitive position of the Colombian leather cluster in the United States market, the consultants found that the lack of competitiveness was not so much related to design or pricing, but rather to the poor quality of Colombian leather at that time.

When they tried to focus on this problem in Colombia, they reported in a subsequent publication that the leather manufacturers blamed the tanneries. The tanneries in turn blamed the slaughterhouses which in turn blamed the ranchers. The ranchers in turn were reported to have said that it was the fault of the cows that rubbed their skins against the barbed wire. This created the often-used anecdote about "blaming the cow".

The anecdote may not be representative of the mindsets of the entire industry – the leather industry is much improved and often known for its excellent products. However, it underlines an important lesson. Coming up with the "right answer" is the easy part. Getting a cluster to cooperate and actually implement significant changes is far more challenging.

Source: World Bank, 2009.

What to avoid

Good strategy but failure to elicit cooperation for implementation (lack of trust). Cluster initiatives often enlist industry and strategy experts who may correctly pinpoint the obstacles to competitiveness and even come up with appropriate private sector strategies and government policies to overcome them. However, external consultants may either fail to recognize or lack the unique skills needed to foster cooperation and move successfully to implementation. Strategic brilliance may be important, but perhaps more important is the skill to overcome years of animosity between farmers and traders, or farmers and agro-industry. Cluster cooperation is difficult but not impossible to achieve, especially when there is a sense of urgency (Fairbanks and Lindsay, 1997).

Farmers and processors lacking trust and working at cross purposes. As mentioned earlier, an example of "anticluster" behaviour was witnessed in the Sri Lankan tea industry where manufacturers and exporters sought to position Colombo as a tea-trading hub, importing various blends and providing a better mix of products. Lobbying the government for a reduction in tariffs for the import and re-export of teas, their efforts were contravened by representatives of the tea plantations and farmers who opposed tariff reduction on the grounds that it would be used by manufacturers, traders and exporters to lower the prices paid to Sri Lankan tea producers.

Mistaking "clumps" for "clusters". As noted earlier and further discussed in Chapter 4 (Agroparks), co-location is a relatively easy piece of economic development. Building social infrastructure, connections, trust and cooperation is more complicated (Ffowcs-Williams, 2014). Co-location of lots of farms, enterprises or industry participants does not make a cluster. It is more about fostering cooperation as well as competition within the cluster to achieve closer market linkages, upgraded product offering, increased value added and innovative new products and services.

Mandating clusters. Competitive industry clusters often emerged organically for many different reasons, from cut flowers in the Netherlands to the shrimp industry in Ecuador, and with diverse contributing factors. At one point, the Government of Peru, with its cotton growing and clothes sewing operations, believed it could incentivize investment in the missing yarn and textile cloth industries. However, it underestimated the challenges posed by these industries, in particular the capital-intensive nature of textile manufacturing. Clothing manufacture requires related and supporting industries such as specialized cloth treatment, labels, zippers and buttons. Government leaders often believe in the need for the compelling logic of industry cluster formation in their countries but fail to appreciate the difficulties involved. As will be noted in the conclusions to this chapter, government-mandated clusters need to be treated with great caution. Since clusters usually develop organically, inducing them may create market distortions. Governments are rarely capable of understanding all the nuances of cluster development or of rapidly changing market and competitive conditions. They have at times made major investments in cluster development that has not worked out as planned.

Wrong psychological contract. Related to the difficulty mentioned above, governments, international financial institutions or development agencies sometimes believe they should make the choice about cluster development on the basis of prior external analysis, using criteria such as the potential for growth, exports, job creation or value added, apart from an analysis of market prospects and domestic

assets or an analysis of theoretical comparative or competitive advantages. Cluster initiative facilitators are then instructed about engaging in a particular industry cluster. This establishes the wrong kind of psychological contract. Industry leaders and their associations are approached by those seeking to lead a cluster initiative wanting to know what is on offer and why they should spend time and effort on the initiative. Those working on the initiative must therefore convince the industry cluster leaders to coalesce and cooperate, based on selling perceived benefits. This kind of psychological contract puts the cart before the horse. Unless the industry is at the forefront leading the charge, success is much less likely. In some cases, clusters are convened to take advantage of investment resources made available by a funder with the incentive to disburse these resources, an incentive that does not necessarily guarantee a good outcome.

Poor or incomplete diagnostic analysis. Some cluster initiatives seemed like a good idea but did not benefit from careful cost-benefit analysis, market trend analysis or accurate competitor intelligence, including relative cost positions.

Poorly designed strategic initiatives. It is important that good quantitative analysis and strategic analysis be performed to avoid poorly designed strategic initiatives. Therefore, it is often a good idea to combine industry experts who can "reality test" with competitiveness and financial experts who understand good cost-benefit analysis and can use lateral thinking.

Policy capture by narrow special interests. It is further important to avoid situations where the most powerful or influential groups capture the policy dialogue process and direct an investment in social goods or policy initiatives towards one spectrum of the value chain or one set of interests. For this reason, it is often insisted that cluster initiatives be also represented by producers, traders, processors, suppliers and, when relevant, exporters. Otherwise, policies could be implemented that favour the manufacturers to the detriment of farmers, or favour exporters to the detriment of those serving the domestic market.

Ineffective public-private dialogue. An analysis of public-private dialogue characteristics in many industries in over 30 countries reveals examples of effective versus ineffective dialogue. Effective dialogue tends to be characterized by an industry coming together, conducting sound analysis, taking a strategic view and then taking lead responsibility for the industry's strategic direction. The industry goes to the government with serious and actionable proposals for policy change, regulatory change or government investments in public goods, based on an analysis of binding constraints, with a serious cost-benefit analysis, including the impact on government revenues. Ineffective dialogue is characterized by individual actors in an industry going to the government with ad hoc complaints about operational issues and armed mainly with anecdotal evidence while seeking special consideration. Or, if they come as an industry group, they present a laundry list of grievances with little strategic priority.

Conclusions

Cluster development is a conscious effort to build on existing natural resource advantages by encouraging private sector strategies that create closer market linkages, improve supply chains and foster cooperation among value chain participants and with related and supporting industries. Cluster initiatives and the cluster

development approach bring powerful tools to public, private and academic leaders. Cluster analysis can help policy-makers in the public sector and firms in the private sector make sound strategic and investment choices that contribute to growing, competitive clusters.

Cluster development can lead to more complex and robust sources of competitive advantage while capturing additional value far beyond the farmgate. Cluster initiatives have been successfully implemented in many countries and in many sectors (World Bank, 2009).

The cluster approach is an example of a spatial and regional approach to the development of the agricultural sector since it mirrors the desire of most government and private sector stakeholders in pursuing value addition and greater resiliency. A network of suppliers and supporting institutions, from packaging providers to research institutes, enables an agricultural sector to develop further.

The cluster approach brings together stakeholders whose interests are often seemingly in conflict, such as farmers and processors whose quarrels on pricing seem like a zero-sum game until they step back and address solutions affecting the competitiveness of the entire value chain.

The cluster approach can be of use to regional development officers, economic planners, those designing and implementing development projects, infrastructure planners and also to industry associations and private sector leaders. A clear set of tools can be used to benchmark an industry, diagnose its binding constraints and identify both strategic initiatives (for the private sector) and policy initiatives (for the government sector) that can improve the value added and competitiveness of many locally based agricultural production zones.

Furthermore, there are process tools from cluster development that explain how to convene stakeholders, bring participants together from across the value chain, apply diagnostic tools, develop strategies and implement practical initiatives.

Cluster approaches can readily be combined with some of the other approaches discussed in this book. They fit well into agrocorridor planning. The use of agro-industrial parks would seem to be a powerful driver of cluster development.

However, cluster approaches should be used with caution. While not expensive to implement, they should avoid subsidies. The industry cluster itself should lead the process and it is harder to "induce" cluster development through subsidies or external prodding. Cluster development seems to be more challenging when dealing with basic commodities such as wheat and rice but it may prove catalytic when applied to the dairy industry and to speciality products such as horticulture.

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Chapter 4
Agro-industrial parks

> *"[...] Development programmes like the Mega Food Park [in India] [...] are yielding results and the sector has witnessed increases in the processing level and value addition. Despite the economic slowdown, the food processing industry in India grew at an impressive rate of 14.7 percent in 2008–09."*
>
> Indian Prime Minister's speech on 6 October 2009, New Delhi

This chapter explores efforts to create agro-industrial parks dedicated to the processing and promotion of agrifood chains. These parks seek to drive technological change, value addition and industrialization of the agribusiness sector by offering premises and supporting services on the microeconomic scale.

4.1 CONCEPTS

Definition of an agro-industrial park

An agro-industrial park is a spatially demarcated hard and soft infrastructure platform dedicated to supporting firms and other stakeholders engaged in agroprocessing and related activities. In an agro-industrial park scheme, the following *essential conditions* coexist:

- A well-defined, centrally managed tract of land developed, subdivided and serviced dedicated to agroprocessing. The ownership and management of the park is controlled by a dedicated entity, often public-private.
- Companies engaged in agroprocessing and related activities, called tenants, are co-located within the park premises. There are also providers of ancillary business services, such as finance, human resources, information and communications technology (ICT), knowledge organizations and procurement.
- The park offers infrastructure, logistics and specialized facilities and services (e.g. cold chain facilities and laboratory and certification services) to its tenants.
- The majority of park activities aim to promote agricultural value addition through processing and storage of food, feed and biofuel products. "Non-agricultural" industries in the park are few or non-existent.

An agro-industrial park is much more than its physical assets: it entails a functional community of manufacturing and service agribusinesses located together on a common property, centrally managed by a dedicated entity (public, private or public-private) that usually also owns the land where the park is located (Lowe, 2001). Companies can access park plots through leasing or purchase contracts. The Park Authority (a dedicated entity responsible for planning, constructing

and/or managing the park) coordinates the operations of tenants and other stakeholders. This entity manages the park infrastructure and provides services to firms to help them grow.

There is much fuzziness in the use of this concept around the world. Policymakers and practitioners need to be aware of the dangers associated with lack of clarity on the objectives and criteria for decision-making. The terms agropark, agribusiness park and agrifood park may be used synonymously and usually refer to the concept in general or to its basic conceptualization. On the other hand, terms such as agrotechnopark, agrotechnopole and agrobased science park refer specifically to industrial parks specialized in agro and food processing technology. Some equate an agro-industrial park with an agroprocessing zone or special economic zone (SEZ) (see Chapter 5), but the latter requires the existence of a special regulatory framework.

French-speaking countries prefer to use "agropole" instead of agropark, but the term can be confused with "growth poles" or "poles of excellence", which refer to a grouping of firms or an industry that generates expansion in an economy through agglomeration (Hutchison, 2010). In the latter case, firms are not co-located in a centrally managed physical platform, but may be spread over a broader region.

The term agropark is often wrongly used to describe an agro-industrial estate[22] or an agribusiness export facility, such as the Plaza in Bamako (Mali). However, a sugar factory is not an agropark, nor is the Plaza. One single firm does not make a park. The Plaza is just a modern packing house near the airport, which helps exporters improve their capacities in handling and shipping mangoes. As mentioned above, the concept of a park requires a conglomerate of firms, processing facilities and a number of agro and food products.

There is also some degree of confusion between an agropark and a cluster. Whereas parks are strongly defined by their physical aspect (an industrial estate with high-quality infrastructure), clusters are demarcated by their linkages, networks, interactions and shared strategies (see Chapter 3). The geographic scope of a park (urban area and its hinterland) is smaller than that of clusters (province, department). A park also differs in the number of commodities and value chains involved: several in the case of agro-industrial parks, versus one or a few related commodities/value chains for clusters. While clusters tend to be described in terms of focus products (one, or a close-knit group of commodities such as a horticulture or biotechnology cluster), parks tend to be planned to be multiproduct in nature.[23] Nevertheless, clusters that have evolved organically are quite broad, often overlapping, in terms of product focus. Agro-industrial parks may actually facilitate the development of one or more agrobased clusters, generating substantial spillovers as well as economies of scale and scope for agribusinesses. Clusters are discussed in Chapter 3.

[22] Some attempts to locate individual factories near production to increase value addition have been disasters: the Norwegian-sponsored pineapple plant in northwest Zambia comes to mind. Yet there have also been successful cases, especially in plantation-type activities such as tea.

[23] In fact, clusters are often named after the product or product group they focus on, such as the lemon cluster in Tecomán (Colima, Mexico), the melon cluster in Mossoró (Rio Grande do Norte, Brazil) and the sugar-cane cluster in the Cauca Valley (Colombia).

4.2 RATIONALE AND HISTORY OF AGRO-INDUSTRIAL PARKS

Agro-industrial parks help their tenant firms to achieve two main goals. The first is to *gain competitiveness through co-location*. Companies often group together in industrial districts (Marshall, 1890 [1920]) and industrial parks (Alberti, 2001) to increase their competitive edge. Agroparks facilitate localized competitiveness and growth by attracting agro-industrial and agribusiness firms into a specific territory.

The second goal is to *maximize the efficient use of natural resources* across interconnected urban-rural spaces, according to De Wit's theory of resource use efficiency in agriculture (1992), further elaborated upon by Smeets (2011). This theory holds that resource use efficiency in the production and processing of agricultural products increases with the level of integration and intensity of the controlled factors. According to this notion, the role of the agro-industrial park consists precisely in promoting an integrated approach and applying efficiency measures across the various value chains and agro-ecological systems involved.

The industrial park format has been widely applied across the globe, most notably targeting the textile, clothing, footwear, consumer electronics and motor industries. Over the years, this policy tool has spread in waves, reaching different regions at different times. Industrial parks flourished in the United Kingdom from the 1930s to the 1960s, linked to regional policies to promote crisis areas and to acts to regulate the location of a particular industry in specific districts (Vidová, 2010). Subsequently, they became a common feature of the economic landscape in the United States of America and Canada in the 1960s (Peddle, 1993), and in Germany in the 1980s and 1990s (Vidová, 2010). Industrial parks developed rapidly in the East Asian tiger economies (Hong Kong SAR, Singapore, Republic of Korea and Taiwan Province of China) during the 1980s, and in China from the early 1990s, but also in Latin America and parts of South Asia (notably India).

The timing of these waves has not always been propitious. The economies of East and South Asian countries that adopted this instrument during the 1980s and 1990s benefited from acceleration in the globalization forces that shaped those decades: increased trade, improved logistics and global value chains and production networks (Dinh *et al.*, 2012). Conversely, those who jumped on the bandwagon in the 2000s, such as the Commonwealth of Independent States (CIS) and sub-Saharan African countries, faced increasing global competition and had more problems in achieving success.

The use of *industrial parks as a tool for agricultural value addition and competitiveness* is quite recent in both industrialized and emerging economies. India and China are among the countries that have relied most heavily on this tool. In India, the development of agro-industrial parks dates back to the late 1980s, thanks to a series of financial facilities (such as federal grants for setting up industrial parks in the framework of the Integrated Infrastructure Development scheme), and institutional developments (establishment of the federal Ministry of Food Processing Industries [MoFPI] and of state-level agrifood development authorities) (FAO, 2006). Agro-industrial parks have been promoted, with a view to inciting economic development (especially in the southern states), upgrading product quality and variety and reducing risk to investors by providing a common infrastructure. In the mid- to late 1980s, China also launched a programme to develop national industrial

parks. Almost half the Chinese mixed industrial parks in operation in 2008 hosted companies producing food, beverages and agricultural machinery.[24]

European agropark initiatives date from the 2000s. Two interesting examples are the Danish Agro Food Park in Århus[25] (set up in 2009) and Greenport Venlo[26] (initiated in 2005 and still under development) in Limburg province (bordering Germany and Belgium) in the Netherlands. The Århus Food Park grew from a conscious effort to generate agro-industrial clustering, improve competitiveness and spur innovation in the country's high-value agribusiness sector. The Venlo project puts the accent on minimizing waste flows, while maximizing resource flows across an area that combines a processing and greenhouse zone, a business park for horticultural products and flowers (Fresh Park Venlo), a green technology business park (Green Park Venlo), and collective green areas.

A new wave of initiatives is taking place in the wake of the international food crisis of 2007/2008, which has pushed countries towards self-sufficiency by substituting food imports with local products processed in agro-industrial parks. This is the case in Qatar which, as part of its National Food Security Programme of 2008, combines agricultural development, green energy, water management and food processing via the establishment of food parks (UNCCD, 2011).

The slow uptake of industrial parks in the agribusiness sector has been partly a result of difficulties in adjusting the model to a new industry, new players and settings. Adapting this tool from traditional heavy and light manufacturing industries to food manufacturing and the agro-industry has posed some challenges. Policy-makers have struggled to adapt it to a new environment populated by players that are relatively smaller and more fragmented than in other industries, and that operate in rural and peri-urban spaces. This reflects the traditional divide between agricultural and industrial policies (primary versus secondary sector), with food processing sitting in the uncomfortable middle (Lerner and Eakin, 2011). Industrial parks are typically within the domain of the Ministry of Industry and Trade or similar, and reflect the priorities of that ministry in terms of investment, industrial value addition and job creation. Agriculture is within the domain of the Ministry of Agriculture, and its priorities may lean towards production, food security and rural development. Agropark initiatives should combine agriculture and industry, therefore requiring the alignment of priorities and strategies as well as organizational coordination (e.g. clarification of roles and mandates, designation of focal points and setting up of collaboration mechanisms).

However, increasing levels of urbanization – particularly in the developing world – and the growing sophistication of agricultural value chains are making obsolete the divisions between agriculture and industry, and between rural and urban space. These processes have opened the door to the expansion of light manufacturing parks to include food processing and, from there, the transition to specialized agro-industrial parks has been only natural.

[24] More concretely, 24 of 54 mixed industrial parks. *Source*: http://www.prologis.com/docs/research/asia/China_-_Special_Economic_Zones_National_Industrial_Parks_-_Door_Openers_to_Economic_Reform.pdf

[25] http://www.agrofoodpark.dk

[26] http://www.greenportvenlo.nl

On the other hand, thanks to this time lag, promoters of agro-industrial parks are now able to apply lessons learned by pioneer industrial parks through years of trial and error. Examples are the following:

- Allocation of larger areas to administrative tasks, ICT and recreation (going beyond a narrow focus on manufacturing zones).
- Importance of offering a wider portfolio of services.
- Attraction of a balanced mix of park tenants (not only agroprocessors, but also companies dedicated to science, technologies and service businesses).
- Attaching more importance to international networking and interpark cooperation (Vidová, 2010).
- Increasingly green industrial parks (Lowe, 2001). In the late 1990s and 2000s, several developed and newly industrialized countries (e.g. China, Thailand) transitioned from standard to eco-industrial park (EIP) models with enhanced agro-ecological stewardship. This trend involved both greening existing industrial parks and designing new EIPs according to the principles of industrial ecology, i.e. turning waste into value.
- Cross-pollination between parks and other industrial policy tools. Success in the implementation of a tool can lead to experimenting with others. This is the case of China which, from the late 1970s, adopted the SEZ model as part of a major programme of economic reforms. The successful experiment with SEZs paved the way for industrial parks, which began to proliferate across the country (Dinh *et al*., 2012; Salonen, 2010).

4.3 TYPOLOGY

Agro-industrial parks adopt various formats, according to their industrial activity, space use, development objectives and main driver, as seen in Table 7.

TABLE 7
Types of agropark

Classification	Types of agropark	Characterization
Industry targeting	▪ Specialized agropark ▪ Mixed or hybrid industries park	▪ Focus on agro-industry ▪ Several industries, including agrifood
Premises and services	▪ Intensive agro-industrial parks ▪ Mixed-use parks ▪ Integrated social agroparks	▪ Agro-industrial and logistics ▪ Agro-industrial, commercial and residential uses ▪ Community involvement and other social features
Development objectives	▪ Basic agro-industrial park ▪ Agro techno- or science park ▪ Agro eco-industrial park ▪ Agropark with SEZ status	▪ Agro-industrial competitiveness ▪ Innovation and technology transfer ▪ Green agroprocessing ▪ Special regulatory and fiscal regime
Ownership	▪ Public agroparks ▪ Private agroparks ▪ Public-private agroparks	▪ Mostly public sector driven ▪ Mostly private sector driven ▪ Public-private driven
Starting-point	▪ Brownfield initiative ▪ Greenfield initiative	▪ Based on existing development ▪ Developed from scratch

Source: authors' elaboration.

Classification of agroparks

Industry targeting

- *Specialized agro-industrial parks* are those fully devoted to the agribusiness and agro-industry sectors, such as the Århus and Venlo parks.
- *Mixed or hybrid industrial parks* cater to the agrifood sector among other industries. An example is the Beijing Changping Xiaotangshan Industrial Park, established in 2006, which hosts mainly domestic companies dedicated to new materials (e.g. refractory materials), food processing and machinery.[27]

Offer of premises and supporting services at the microeconomic level

- *Intensive agro-industrial parks* with premises for agro-industrial and logistics uses.
- *Mixed-use parks* that incorporate industrial, commercial and residential spaces.
- Evolving from this mixed-use typology are *integrated social agroparks* that feature community involvement, recreational facilities and educational resources (Baldwin, Ridgway and Rose-Andersen, 2007).

Development objectives[28]

- *Basic agro-industrial park*, which is characterized by industrialized agricultural practices and value addition through processing. This park provides co-located and shared agro-industrial facilities and equipment, alongside ancillary value-added services, in a well-defined, contained area close to farming agglomerations where producers can bring raw materials to process, package, store and transport. These basic elements can be complemented by additional features, as shown in Figure 16, creating new categories of parks.
- *Agrotechnopark or agrobased science parks* mainly aim to promote innovation and science within the agriculture, food processing, bioenergy and environmental technologies. For example, the European Union highlights the value of these parks in interconnecting science and markets, in the framework of the Lisbon Strategy[29] (Vidová, 2010). In essence, they are a specific type of agropark that is managed by "professionals whose main aim is to increase the wealth of its community by promoting the culture of innovation and competitiveness of its associated businesses and knowledge-based institutions" within the agro-industrial sector (Andersson, Formica and Curley, 2010, p. 209).
- *Agro eco-industrial parks* (agro EIPs) give primary attention to fostering a healthy agrobased industrial ecology system, by creating a pivotal space where the flows of agricultural production, consumption and recycling are highly efficient (Broeze and Smeets, 2010). See example in Box 26.
- *Agroparks with SEZ status* have a special regime that is more favourable in terms of tax-related exemptions, investment environment and streamlined

[27] Hong Kong Trade Development Council Research: http://research.hktdc.com/

[28] The development objective(s) will determine the nature of park stakeholders. For example, a park with a focus on innovation will take care to attract academic and research institutions and will invest in training and research facilities, laboratories and demonstration centres.

[29] An agenda to foster a knowledge-based economy, defined by the European Council in Lisbon, 2000.

administration and is more conducive to agribusiness and agro-industrial development than in the rest of the country (Farole and Akinci, 2011; Saleman and Jordan, 2014). This type of agropark is further discussed in Chapter 5.

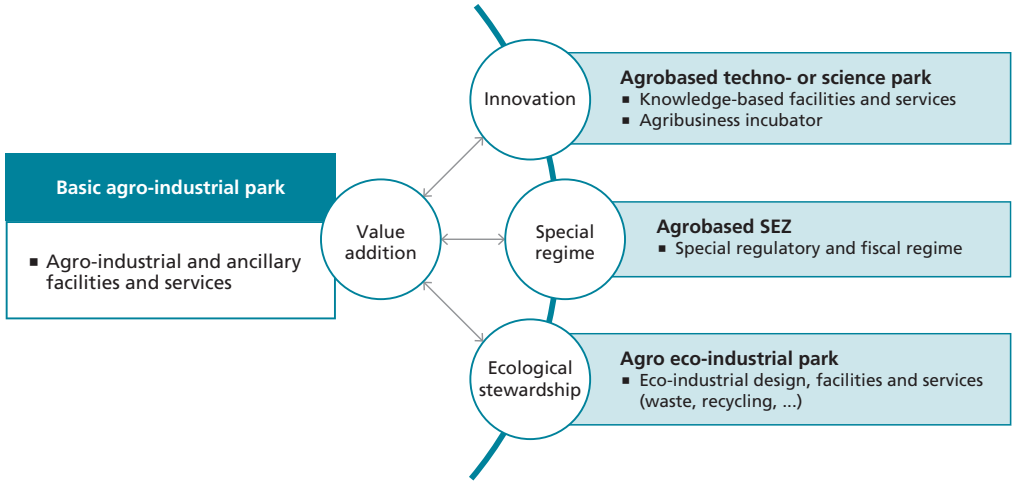
Ownership

Agro-industrial parks range from *fully public-driven* to *fully private-driven* initiatives, with most of them being *public-private driven*. Leadership and role allocation among public institutions, entrepreneurs and other private actors are key issues throughout all the stages of park design and implementation. These include location selection, design and dimensioning, through operation and maintenance, and monitoring and evaluation (M&E). These roles may change over time. For example, the Government of India has gradually transitioned from a food park scheme (as stated in the 8th Five Year Plan of the Planning Commission, 1992–1997) based on the role of state governments in setting up agro-industrial parks, to a new scheme using a public-private partnership (PPP) model (11th and 12th plans, 2006–2011 and 2012–2016) that concentrated on enticing private investment and expertise, while keeping the public stake in the park to less than 26 percent (Aggarwal, 2014). For more details on ownership and financing sources, see section on Financing the park, p. 162.

Starting-point

An agropark is a *brownfield* investment if it is developed on existing but disused facilities of former companies, universities or public agencies. It is *greenfield* if it is established in a new area and does not build on existing ventures.

FIGURE 16
Types of agro-industrial park according to development objectives



Source: authors' elaboration.

BOX 26
Agrósfera: a green park project

Agrósfera is an agropark project currently being developed in Aguascalientes, Mexico. It is characterized by a strong focus on environmental aspects and on value-added export-oriented food products, following the model of the Suiker Unie Agropark, near Dinteloord in the Netherlands. It is a joint project of the Capitalization and Investment Fund for the Rural Sector, Wageningen University (the Netherlands), the Government of Mexico, state government of Aguascalientes and the private sector, as well as several financial institutions.

The scope of the Agrósfera project is to generate sustainable development through the optimization of production and distribution processes – the park comprises processing, collection, packaging and distribution centres. This includes optimizing the use of natural resources. Among the sustainable techniques of production and reuse of waste to be implemented, is a bioreactor to process biomass (40 dry tonnes of biomass per hour) for use in animal breeding. Using an innovative technology, this biomass may also be transformed into a useable fuel that is efficient and environmentally friendly. In addition, more efficient and sustainable water use is encouraged.

Source: De Wilt, van Oosten and Sterrenberg, 2000.

4.4 WHEN TO USE THE AGRO-INDUSTRIAL PARK MODEL

Policy-makers can rely on the agropark model when they:
- seek to add value in agriculture through processing;
- plan to support a multiplicity of agrifood chains; and
- want to develop cities and their agricultural hinterland.

These criteria offer some guidance as to where and when the agropark model is a possible solution, even if it is not a unique or best solution. There are other ways to add value through processing and to support several agrifood chains. There are also other means to facilitate the connection between urban and food production areas: agrocorridors and clusters have the same objective. In fact, the three policy tools are often combined.

Adding value in agriculture through processing

Policy-makers will choose to adopt the park model when their specific goal is to generate or *capture industrialization opportunities in the agrifood system*, creating labour-intensive manufacturing jobs and moving towards higher-value activities – ideally at a realistic pace. Agro-industrial parks increase the efficiency and value-capturing capacity of the firms located in them, while reducing transaction costs. They combine the pursuit of value addition and industrial efficiency with principles of industrial ecology and innovation. Accordingly, agroparks may play a

critical role in the emergence of agribusiness/agro-industry as a leading sector that can propagate growth and linkages to other industries.

Parks can trigger *broad positive impacts on the economy*, including employment creation, foreign direct investment (FDI) and domestic investment, increased exports and domestic sales, additional government earnings, and improved zoning and rationalized production. Agro-industrial parks have the potential to generate the following *sectoral gains*:

- Unlock value through processing that gives the resulting agrifood products an incremental value in the marketplace (e.g. biofuel versus biomass and precooked meat products versus raw meat), possibly in combination with product differentiation strategies based on "specific quality" attributes such as environmental and social stewardship, geographic location, and safety and quality management (organic certification, geographic indication, etc.) (FAO, 2010).
- Reduce post-harvest losses, especially in fruit and vegetables, through primary processing (continuing with the example, various ways of conditioning ranging from in-field packing to precut and bagged horticultural products) and secondary processing (e.g. manufacturing of juices, marmalade, jellies, jams, fruit syrups, canned vegetables), while minimizing occurrence of gluts arising from bumper harvests and improving by-product utilization.
- Generate productivity gains associated with agglomeration externalities, such as knowledge spillovers and close proximity to skilled labour markets and specialized supplies.
- Stimulate the rapid mobilization of contract growers locally to supply raw materials to agro-industrial parks (backward linkages), as well as the development of supply contracts with strategic distribution centres, domestic retailers and exporters (forward linkages). Furthermore, well-designed and managed agro-industrial parks promote the creation not only of forward and backward linkages within the agrifood system, but also of ties with the broader economy.
- Reduce risks, including the certainty of landownership, feasibility of public services, operation permits and quality of infrastructure. In particular, park tenants can take advantage of off-site public infrastructure (roads, railway lines, airports), and on-site common infrastructure, facilities and logistical pooling. Parks not only represent physical points for much-needed infrastructure expansion in infrastructure-poor countries, but are also key entry points for stimulating the growth of support business development services (certification, banking, secretarial and printing, as well as courier and other cargo handling and haulage services).
- Enhance collective economic efficiency through the reduction of overhead costs payable by each park entrepreneur.
- Improve the performance of targeted value chains by enhancing the inclusiveness of small farmers and small and medium enterprises (SMEs). China has been using the industrial park model extensively as a strategy to help small agro-industries grow into medium and larger firms (Dinh *et al*., 2012). Likewise, India supports the establishment of food parks – through MoFPI – with the aim of improving the access of SMEs to infrastructure and facilities such as cold storage, analytical and quality control laboratories, and warehouse facilities (Aggarwal, 2014). Among other things, parks create enough economic

scope for joint supply arrangements to meet large orders and joint purchasing for reducing the cost of inputs, allowing participating SMEs to scale up within a limited time frame.

Supporting a multiplicity of agrifood chains

Agro-industrial parks cater to a combination of agrifood chains with competitive potential that are present in the territory. Careful analysis and planning are required so that the park design fits with the spatial interplay of the different agrifood chains, allowing for the attainment of substantial cross-chain manufacturing, logistics and ecological improvements. A case worth noting is the territorial mosaic of interdependent activities tied to hybrid or mixed industries parks that support interrelated sectors with agrobased raw materials and processes in common, such as food processing, the pharmaceutical sector, agrobiotechnology, the paper industry and bioenergy production.

Parks should host a selection of industries, value chains, subsectors and firms consistent with the comparative advantage of the territory, as determined by its endowment structure (including logistics advances). This means prioritizing chains (crop, livestock or aquaculture production) and agribusiness activities that make the best possible use of abundant factors, e.g. labour, land and water. Agroprocessing is a labour-intensive activity, particularly in the final stages – as in canning and fish processing (McCullough, Pingali and Stamoulis, 2008) – so it is typically a good choice for developing countries where wages are relatively low. Nevertheless, the planning of an agro-industrial park should take into account the significant differences in factor intensity (depending on both the commodity and scale of production) across the agrifood chains served. For instance, greenhouse horticulture and large-scale biodiesel production are very capital intensive, whereas the cocoa value chain is labour intensive, yet they can all coexist in the area surrounding a given agro-industrial park.

Broadly speaking, there are activities or products that lend themselves better to, and benefit more from, the "spatial containment" of an agro-industrial park. For example, processed agro and food products tend to be more commonly linked to agroparks than unprocessed or little-processed foods, as do high-value products rather than bulky commodities, perishable products rather than non-perishable ones and export-oriented products rather than those targeting the domestic market.

Without entering into a liberal interventionism debate (i.e. the government is poor or good at selection), key points include the need for a good and well-balanced feasibility analysis, a focus on market success and fluid public-private dialogue to avoid mistargeting. Another element to take into account is to ensure the alignment of agrifood chains supported by the park with the national priorities stated in sectoral plans and strategies. For instance, Bizerta Park in Tunisia serves five agrifood chains (wine, potatoes, dairy products, seafood and canned fish, and cereals) out of the nine prioritized by the Tunisian agribusiness development strategy.

Adding a dynamic dimension. Agropark initiatives are not static, but move with trends to evolve with regional, national and market developments. A dynamic perspective should be used to compare particular agrifood chains and areas with spatial specificities. Food and agribusiness are becoming a high-technology sector that requires highly skilled employees (Wang and Goldsmith, 2013); agro-industrial

parks can help in this transition from low- to high-tech industry through their ability to attract pools of highly skilled, educated labour, or as a location in which to focus skills development actions. In this fashion, parks can help countries and regions advance in the process of graduating from low-skilled manufacturing jobs and move up the value ladder, as in the cases of China and India (Lin, 2011).

The same dynamic approach is required when comparing the actual, incipient and future potential competitiveness of agrifood chains. The obvious choice for park promoters would be to select firms and agrifood chains that already score high in competitiveness. Yet facilitating the development of new and nascent agribusiness activities/chains consistent with the comparative advantage of the economy is also a good idea (Lin, 2011; Monga, 2011). Agro-industrial parks can be instrumental in the development of chains that have already shown competitiveness potential and, therefore, have developed some human, technological and organizational capabilities that enable upgrading and expansion in the near future. Conversely, park planners should avoid supporting new value chains/companies that are inconsistent with the comparative advantage of the territory or attempting to protect old activities that have lost comparative advantage.

Targeting cities and their agricultural hinterland

The majority of agro-industrial parks are sponsored by and physically linked to towns of various sizes. Through this interface, they contribute to easing the physical and economic connection between metropolitan and rural areas, and linking processing with more distant markets. Agro-industrial parks benefit from the urbanization economies generated by the large pool of consumers living in cities, and cities find in parks an effective tool to ensure food supplies for their citizens. Across the developing world, but particularly in India and China, the emergence of agro-industrial parks was originally attached to megacities and primary cities. However, an expansion has been noted recently towards secondary and third-tier cities where industrialization is gradually shifting (Desmet *et al.*, 2012).

Although municipalities are the most common public "champions" driving the development of parks, parks can also be attached to a district or group of municipalities, and even become a provincial-level initiative. In fact, the extensive interventions in local spatial structures needed to establish agro-industrial parks generally require the proactive engagement of political authorities at various levels – from city to provincial, regional and even central levels (various ministries). These administrative levels should jointly assess the administrative feasibility of agroparks and the possibilities of fitting them into the broader spatial landscape.

Other preconditions

These criteria are only a first step in the decision-making process. If they are not met, then an agropark is probably not a sound instrument to use. If all three criteria are met, then it is time to *assess other conditions,* which can preliminarily indicate whether a park is likely to work and is to be preferred to other territorial tools:

- *There is demand for the type of infrastructure/services offered in an agropark.* The existence of a potentially promising agribusiness sector is a necessary but not sufficient condition for the creation of an agro-industrial park. Once the park is established, firms would have to sustain investment or relocation costs

to locate inside the park. As noted by FAO (2006), the majority of potential tenant firms already have facilities and a plant, and may be reluctant to move to another location. Therefore, if investment or relocation is too difficult, even taking into account possible incentives, an agro-industrial park may not be the best option.

- *Land is available and prices reasonable.* High prices or lack of available land can put an end to a park project. Available land is clearly a specific condition for parks, given that other territorial tools do not necessarily presuppose the acquisition of large tracts of land.
- *Benefits exceed costs.* A careful and detailed cost-benefit analysis, preceded by feasibility studies, is necessary to estimate the potential gains/losses of a park. Ideally, the analysis must evaluate real options comparing the net present value of alternative solutions.
- *There is potentially longstanding political will.* Park pre-operation phases can last decades and require huge investments. Therefore, it is crucial that all the main political parties agree on the project. However, too much political will is not desirable when a park project seems to be not feasible or profitable. When deciding whether to launch an agro-industrial park, policy-makers should rely on sound business plans and not on political considerations.

Concentrating production and access to integrated services (logistics, utilities, certification and packaging) to enhance competitiveness makes sense, but there are trade-offs depending on the nature of the product, activity and economic context. Firms will not grow potatoes or cereals in an agrifood park as raw materials; they will also only build their processing plant in the park if it is close to production basins, to avoid having to transport bulky raw material over long distances. On the other hand, in some agroparks there are areas dedicated to cultivating high-value products such as vegetables or cut flowers. A more detailed assessment of the existing environment at country and local levels from various angles (economic, organizational, industry and value chain assessments) will provide more refined answers as to the suitability of the instrument and its chances of success. These issues are covered in the following section.

4.5 FRAMEWORK FOR MODEL AGRO-INDUSTRIAL PARK

This section describes the framework for a model agropark, in terms of location, size, stakeholder roles, infrastructure and services offered, and links with the surrounding area.

Location and size

There is a *delicate equilibrium between proximity to raw materials and proximity to markets*. Agroprocessing firms depend on abundant agricultural raw materials and orient their location decisions accordingly (Deichmann *et al.*, 2005). However, they also tend to locate near consumers, and hence near centres with a high population. The location of agro-industrial parks reflects this split nature. The "industrial" impulse of the park will cause it to gravitate towards metropolitan areas. Empirical evidence tells us that most industrial parks are located in urban areas. This is consistent with findings emerging from theoretical models for land use that seek to explain

urban-rural social structures. For example, Burgess' model of concentric zones, whereby cities grow in concentric circles from central to fringe suburban areas, suggests that manufacturing industries gravitate towards the "factory ring" creating an industrial area adjacent to the central business district (Park and Burgess, 1925). Contrarily, the "agro" impulse of parks encourages them to locate near production zones in rural or peri-urban settings and, notably, adjacent to existing agrobased clusters. Locating parks in rural or semirural sites with good communications, but at a distance from urban agglomerations, contributes to obtaining land at a reasonable price. This is not always possible in densely populated countries, as in the case of the Netherlands. Greenport Venlo is in the middle of a metropolitan, highly urbanized area with a traditional concentration of agribusiness and agro-industrial activities.

The *location* of the park will depend on several factors:

- *Availability of land for the industrial park*, which implies accessing land suited for industrial uses (i.e. not affected by residential regulations regarding protection from noise and other disturbances) and related production activities (such as production of raw materials to supply the park tenants).
- *The nature of its core activities*. A key requisite for an effective agropark is to have good access to production catchment areas that supply raw materials in a consistent and cost-effective manner. Parks specialized in the industrial processing of land-reliant animal and plant production (e.g. fibre, starch crops, cereals and livestock farming) will generally locate in a rural or peri-urban environment. Clustering of production and processing in the park minimizes the cost of transporting raw materials and semi-manufactures. Inversely, agro-industrial parks dedicated to non-land-reliant agricultural activities, such as greenhouse horticulture and protein production (fish farming, pigs and poultry) will probably grow up around ports and other transport hubs, capitalizing on the proximity to water, rail and road transportation services (de Wilt *et al.*, 2000).
- *Access to gateway infrastructure*. Whenever possible, agro-industrial parks locate strategically near key gateway infrastructure (such as airports and ports on main trade routes). For some parks, this location near trade gateways is paramount: for instance, parks specialized in air-based activities, such as fresh fruit and vegetables or cut-flower exports, will locate near key airports.
- *Other parameters*, such as good natural resource endowment (careful planning to avoid water scarcity); availability of utilities necessary for successful manufacturing and other processes; smooth traffic and transport flow for merchandise and people; existence of thick markets such as growth poles, where there is a critical mass of consumers, suppliers, human resources and education centres; and commitment of local authorities.

The ideal and the reality. Ideally, the feasibility and strategy of a park should be based on a sound business plan rather than on political considerations. Deciding the location of the park should respond to rigorous and transparent selection criteria of economic and business rationale and efficiency, in tune with the strategic focus of the park. Location decisions should be avoided that are made to appease political constituencies or unfounded on economic grounds (such as creating the park in "lagging" or remote regions, isolated geographic enclaves that the govern-

BOX 27

Agro-industrial parks try to locate in an area that maximizes logistical gains

- The agrotechnopark of Bizerta (Tunisia) is strategically located in the vicinity of Tunis, Carthage International Airport, the commercial port of Bizerta and the free zone around Lake Bizerta.
- The Beijing Changping Xiaotangshan Industrial Park (a hybrid park catering to the food processing subsector) is close to a very large consumer centre (Beijing, with a population of over 21 million, and China's second city in terms of gross domestic product [GDP]), 16 km from Beijing International Airport and a 90-minute drive from the port of Tianjin, the main passageway for cargo from Beijing and North and Northwest China entering the Bohai Sea.[30]
- The Kakkanchery Food Park, sponsored by the Kerala Industrial Infrastructure Development Corporation (KINFRA) in the Indian state of Kerala, is located at a vantage point close to farmlands and about 25 km from the city of Kozhikode (or Calicut, with a population of 3 million), granting access to both raw materials and a large pool of consumers. The park has good accessibility to National Highway 17, Kozhikode airport, Kochi port and national railways (FAO, 2006). It is also close to key knowledge actors, such as the Regional Engineering College and the Indian Institute of Management Kozhikode. Other reasons for choosing the location were the availability of land – a site development of over 28 ha acquired for the park from the University of Calicut in 1995 – and the existence of nearby food clusters, such as rice products, flour milling and bakery products, spices, soda water and coconut oil, which could be linked to the food park.

Source: Gálvez-Nogales, 2014.

ment seeks to develop). A common pitfall is to see parks as a policy tool to foster agro-industrial development in unopened or underdeveloped areas, regardless of economic potential. The wrong choice of location will result in augmented production and transaction costs for the few firms willing to relocate to the agro-industrial park. Another dysfunctional temptation for planners is to develop parks for all. Instead of developing a pilot park to demonstrate the proof of concept and then expanding to other locations, some countries try to take shortcuts and move directly to establishing agroparks in multiple regions/areas. Ethiopia, for example, is considering setting up four parks in the country's four major regions (Amhara, Oromia, Tigray and the Southern Nations, Nationalities and Peoples' Region) for the sake of equal treatment.[31] Likewise, the Government of Mali (2013, 2015) is considering setting up 12–19 agroparks/agropoles to cover the different agro-ecological zones of the country, even though there are some conflict-affected areas that will struggle to attract private investors.

[30] Hong Kong Trade Development Council Research: http://research.hktdc.com/

[31] Personal interviews with FAO, UNIDO and UNDP staff during visit to Ethiopia in November 2014.

BOX 28

Location of agro-industrial parks determined by key drivers

An illustrative case of how key drivers influence the park location is the agrotechnopark of Bizerta in Tunisia. An agro-entrepreneur settled in the town of Bizerta and master-minded the park in the 1990s. He managed to get on board key public authorities and local agro-entrepreneurs and eventually, in 2011, the Tunisian Ministry of State Properties and Land Affairs gave land in concession for the construction of the park. In this case, the decision of where to locate the park was "pre-made" because of the involvement of local firms (not the exact point, but the rough location). Nonetheless, the park sponsors conducted prefeasibility studies to corroborate the technical, marketing and strategic potential of the park and its location.

Another example is the Zamorano Food Park,[32] located in Morazán (Honduras) on the premises of Zamorano University, a private international university. Given that the university was the main driver behind the creation of the park, it made sense to locate it physically on campus. There are 9 ha dedicated to the park, accommodating a number of processing and packaging companies and specialized laboratories.

Source: Gálvez-Nogales, 2014.

In practice, the decision of where to locate an agro-industrial park can be substantially influenced by firms already located in an area that play a key role in the creation of the park, or by universities and research centres that lead the establishment of agrotechnoparks.

Sizing a park correctly is as important as getting the right location. The park should be neither too small, offering few economies of scale, nor too large, resulting in scarce occupation and increasing overhead costs for the few tenant companies. This element will weigh critically on the park's financial sustainability. In addition, large-scale parks are more likely to create conflicts between the local population (related to land acquisition and the impact of massive infrastructure works) and the business community (creating incentives for interference and collusion). An approach that allows building in stages is advisable. This obviously requires ensuring land for expansion.

The right size of parks will hinge upon various factors:

- Political economy of the country.
- Forecasts of firm demand, investments and jobs.
- Numbers and degree of development and sophistication of selected value chains and industries.
- Size of expected market.
- Dynamics of rural/industrial land markets that influence the availability and price of land for setting up new parks or expanding existing ones.

[32] https://www.zamorano.edu/en/academic-departments/food-science-and-technology/infrastructure/agroindustrial-park/

- Number of functions and related specialized areas of the park – parks that incorporate industrial and logistics platforms, a research and development (R&D) zone, and green and accommodation areas, etc., will tend to be larger than those with only an agroprocessing estate.
- Caps on public financing of the initiative. For example, in India the cap on the central grant per industrial park ends up restricting the dimensions of the park to 40 ha. In any case, the high correlation between the size and the financial architecture of the initiative is a key issue for consideration when planning an agro-industrial park.
- Standard site dimensions predetermined by the park programme, either by design or in practice. For instance, some industrial park schemes in India have predetermined land provision for parks of 60–100 ha (Saleman and Jordan, 2014). The Indian Mega Food Park Scheme[33] envisages more humble average dimensions, with 20–40 ha of land for central processing (Aggarwal, 2014). The Mega Food Park in Chittoor, with nearly 60 ha, is well above average size.

Park stakeholders

Who is involved in the development and operation of agro-industrial park initiatives?

Agro-industrial parks need to sustain an integrated, multistakeholder and multilevel approach (national, subnational and local levels, transcending sector boundaries) through an extended time horizon (10 to 20 years on average).

Agropark stakeholders can be characterized as follows:

- Public agency and business community stakeholders that have an interest in planning and seeing an agropark implemented.
- Actors involved in developing the park or park developers, either public or private, such as local government units, consulting firms and real estate/businesses.
- Actors engaged in investment promotion, operation and administration of the park, e.g. private tenants, park operator and park authority (or regulator).
- Actors that need to be consulted, such as interprofessional and value chain associations and civil society, that see the benefits of the initiative in terms of job creation, local economy growth, etc., or may be concerned about the negative consequences (e.g. increased environmental pressure and crowding out of local companies).
- Beneficiaries, such as farmers who are linked to the agro-industries located in the park.
- By their very nature, government, the private sector (both domestic and multinational firms), the international community and civil society, as shown in Table 8, may be involved in, and exit, the park project at various stages in its life cycle: from planning and design to implementation and monitoring.

[33] This scheme is the flagship programme of MoFPI. It seeks to facilitate value chain integration, by creating farm-level infrastructure for primary processing, linked to collection centres and agro-industrial parks for further processing.

BOX 29
Varying dimensions of agro-industrial parks

The *Agriworld Agricultural Park* in Suzhou, China extends over 160 ha. Its large size is justified by the various processing facilities for the products in which it deals, together with the substantial number of park tenants it manages to attract. Moreover, the park encompasses a large number of production and demonstration plots, as well as specialized areas for aquaculture activities, including the largest freshwater ornamental fish aquarium in the region (0.12 ha). Similar in dimension are the following.

- *Beijing Changping Xiaotangshan Industrial Park*. The relatively large dimension (120 ha) of the park can be explained partly because of its hybrid nature (it hosts firms from various sectors, not only food processing companies), and partly because of its proximity to Beijing, China's second largest city.
- *Greenport Venlo* in the Netherlands encompasses various integrated solutions including Fresh Park Venlo with a 130-ha Business Park for fresh produce and Green Park Venlo, a 66-ha green tech Business Park and international fair facilities.
- The *Bizerta* food technopark includes a 150-ha industrial estate and a 45-ha area dedicated to innovation and knowledge.

Conversely, the *Troyes Agribusiness Park* (near Paris), dedicated to agrifood activities, extends to only 20 ha, enough to host a platform with business-processing-logistics functions, while the KINFRA Food Processing Park in Kakkanchery, India is approximately 28 ha, of which 12 have been segregated to establish a SEZ.

Sources: Gálvez-Nogales, 2014; http://www.chinaagriworld.com; Hong Kong Trade Development Council Research: http://research.hktdc.com; http://www.greenportvenlo.nl/nl; http://www.aube-developpement.com/en/land-and-buildings/main-business-parks/troyes-agribusiness-park

A detailed analysis of the four categories shown in Table 8 is given in the sections below.

1 Government/public sector

There may be an extensive range of actors in this sector:

- *Line ministries* with related mandates (agriculture, industry, trade and commerce, etc.) that participate in the park initiative according to their specialization.
- *Central government agencies* involved in economic promotion, environment protection, land planning; for example, Tunisia's *Office des Terres Domaniales* [public land office] participated in the development of the Ghazala park, and managed the facilities.
- *Municipal and provincial authorities*, often in coordination with central government bodies. For example, the Pahang State Government in Malaysia supported the Prima Halal Food Park project and helped in developing basic infrastructure.
- *Parastatal or quasi-public corporation*. One case in point is the involvement of the Bahamas Agricultural and Industrial Corporation (BAIC) in the develop-

TABLE 8
Possible stakeholders of an agro-industrial park

Stakeholder type		
1 **Government/ public sector**	▪ Ministries of agriculture, industry, trade and commerce, transport, land planning, education, innovation, etc. ▪ Local and regional governments ▪ Specialized (central) government agencies involved in economic promotion (e.g. investment, export promotion and SME support agencies), land planning and environment protection ▪ Public universities, colleges, vocational training centres and research institutes ▪ Ad hoc government agencies ▪ Chambers of Trade and Commerce (often under public law) ▪ Airport and seaport authority (when the park is developed in the proximity of an airport or seaport)	
2 **Private sector**	▪ Private investor, developer (land/business developer, etc.) ▪ Agro-industries and agribusinesses (small, medium and large; domestic and multinational) ▪ Financial service providers ▪ Logistics and other ancillary service providers ▪ Private universities, colleges and vocational training and research centres ▪ Cooperatives and interprofessional and value chain associations, i.e. value chain stakeholders	
3 **International community**	▪ Bilateral and multilateral donors ▪ International organizations	▪ Private foundations ▪ Multilateral and regional banks
4 **Civil society**	▪ NGOs	▪ Workers' organizations

Source: authors' elaboration.

ment and operation of agro-industrial parks as a tool to stimulate the creation and expansion of domestic SMEs. BAIC is a parastatal in the Bahamas that, as part of its SME development mandate, operates a broad portfolio of industrial parks and incubators, notably in the agrifood sector. One such park is the Gladstone Road Agro-Industrial Park,[34] which comprises 40 ha of land identified for the development of agro-industrial projects and other economic activities targeting the local market: fruit and vegetables, meat products, tropical plants for landscaping, clothes manufacturing, furniture making and heavy equipment operations.

- *Public universities and research centres* are also key agropark stakeholders, notably in agrotechnopark initiatives. Several public research centres and universities are among the main stakeholders of Agrotech,[35] an agrotechnopark located in Agadir, Morocco. These are the *Institut agronomique et vétérinaire Hassan II*, the *Institut National de la Recherche Agronomique*, the *Université Ibn Zohr d'Agadir* and the *Université Mohammed V de Rabat* (FAO, 2011).

[34] http://goo.gl/1VPa5i
[35] http://www.agrotech.ma

- Ad hoc government agencies are occasionally created to support and promote industrial park development. In Algeria, for instance, the Government created the National Agency for the Promotion and Development of Technology Parks (FAO, 2011).

BOX 30

Examples from Malaysia and India of public sector involvement in agroparks

In *Malaysia*, several public bodies are involved in the development of the Prima Halal Food Park (one of several halal parks planned in the country). They all play complementary roles.

- The Office of the Prime Minister has developed a protocol for halal food preparation and provided supervision on practices to be followed.
- The Ministry of Agriculture has established protocols, zoned the park area, provided supervision and accreditation, and facilitated export approvals.
- The Ministry of International Trade and Industry, the Malaysia Investment Development Authority, the Small and Medium Industries (SMI) Development Corporation and the Malaysia External Trade Development Corporation have provided export and investment incentives, manufacturing licences and grants for SMIs, and soft loans.
- The Ministry of Entrepreneur and Cooperative Development identified SMI entrepreneurs, which then received loans from commercial banks.
- The Ministry of Science, Technology and Environment and the Department of Environment have advised on the environmental impact of the project, and on effective methods of treating water effluent and waste.
- The Ministry of Finance has provided financial incentives and support, and funding for international market promotion.

India offers an interesting example of interaction between local and national public entities involved in park development. The central Government of India spearheads the development of agro-industrial parks across the country through MoFPI. MoFPI has developed the so-called Mega Food Park Scheme as a centralized framework for park development, and acts as facilitator and provider of financial assistance. The respective state governments and municipal authorities also play a key role in the development of specific Mega Food Parks. In particular, state governments are expected to assist in the procurement of suitable land for the agro-industrial park; provide all the requisite clearances for setting up the park and its components (e.g. by creating a fast-track single window agency to facilitate clearances and permissions required for the project); and ensure off-site infrastructure (approach roads, power, water, sewage) development or improvement.

The corresponding states can participate in the Mega Food Park Scheme through nodal agencies such as their Industrial Infrastructure Development Corporations. For example, the state of Kerala has subscribed equity in the Mega Food Park at Kakkanchery through KINFRA, its industrial infrastructure agency.

BOX 30
(continued)

This park is one of a series of industrial parks launched by KINFRA targeting the food, clothing, textiles, marine/seafood, rubber, exports, electronics, biotechnology and small-scale industries. There are four other KINFRA Food Parks in Kerala: the Kakkanchery SEZ, the Food Zone in the KINFRA Small Industries Park in Mazhavanoor, the KINFRA Seafood Park and the KINFRA Food Park in Adoor, Pathanamthitta.

Besides KINFRA, other public agencies have been involved in the development of the Kakkanchery Park. These are the Central Food Technological Research Institute and the Defence Food Research Laboratory, both in Mysore; the Regional Research Laboratory in Trivandrum; the Kerala Industrial and Technical Consultancy Organization; and the National Institute of Technology Calicut.

Sources: Government of India, 2012; http://www.primahalal.com; http://www.mofpi.nic.in

2 Private sector

These stakeholders tend to fall within three main categories:

- *Agro-industrial firms* interested in creating a manufacturing platform to increase industrial efficiency, make available food processing technologies and establish backward and forward linkages covering the entire food processing value chain.
- *Agrifood retailers* seeking to diversify by expanding their core business of retailing to food manufacturing: this shift allows them to meet consumer demands for food products better, while opening up a promising new source of revenue.
- *Infrastructure companies* with interests in infrastructure development, often complemented by interests in renewable power generation, logistics and storage of agriculture produce and other hardware-related elements of agribusiness operations.

Infrastructure companies tend to combine the roles of developers-constructors-operators, whereas retailers and agro-industrial firms often enter into partnership with a constructor firm. Involvement of these private actors in an agropark is varied: some actors coinvest and coshare risks, whereas others are mere executors, private contractors working on behalf of the government. Private developers are sometimes the main driver behind the park project and assume much or most of the risk of the venture. Regardless of whether private firms act as coinvestors or non/low-risk-taking government contractors, the business agenda of these companies may drive the development of the park, perhaps to the detriment of other park stakeholders within the industry and local community.

Users or tenant companies. This category features a mix of companies varying in size, market orientation and exposure, and function:

- *Size: from startups and SMEs to large firms*. Many governments knowingly promote a mix of firms of various sizes and encourage them to collaborate

BOX 31
Role of private park developers in India

Some private companies from the agro-industrial, (food) retailing and/or infrastructure development sectors have set up private food parks in India, often with the support and partnership of the public sector. Some examples are given below:

- The Sikaria Mega Food Park, developed by the Sikaria Group, an infrastructure development company.
- The Indus Mega Food Park Private Limited in Khargone (near Indore, Madhya Pradesh) in central India. The Indus Park has been promoted by Vasistha Holdings Ltd, specialized in infrastructure development, and the Ananda Group, which is an agro-industrial conglomerate based in the state of Andhra Pradesh that produces quality rice, poultry, fish, shrimps and prawns for the domestic and international markets. This initiative has been supported and approved by MoFPI, the Government of India and the government of Madhya Pradesh state under the Mega Food Parks Scheme.
- In September 2014, the Future Group launched a 45-ha food park in Tumkur, Karnataka, developed in close partnership with MoFPI, the Government of India and the Government of Karnataka state. The reason why the group, and one of its firms specialized in modern retailing in particular, Future Consumer Enterprise Ltd (FCEL), decided to invest in the park was because they needed to strengthen supply chain linkages back to agricultural producers. By doing this, FCEL could manage to ensure a consistent supply of high-quality, safe, year-round available food products, while at the same time enhancing supply chain efficiency and minimizing costs. In the words of FCEL's chief Executive Officer, Kishore Biyani, the Tumkur Food Park "will substantially enhance FCEL's ability to drive innovation and product development in food products and create a captive production capacity for the company's brands. This integrated food park will help us reduce supply chain costs and wastage across the food value chain in India and improve quality and hygiene to create food products in India that compare favourably with the best in the world".
- The Patanjali Food and Herbal Park, whose major stakeholder is the agro-enterprise Patanjali Ayurved Ltd. Its purpose is to promote Ayurvedic products.

Sources: http://www.tripuramegafoodpark.com/index.php; http://www.indusmfp.com/index.php; http://www.anandagroup.com/about.html; http://www.futuregroup.in; http://www.futuregroup.in/pdf/Integrated_Food_Park_India_Press_Release.pdf; http://patanjaliayurved.org

and support one another (Murray, 2009). For instance, China fosters business models that stimulate the relocation of different sized-businesses to industrial parks and nurture linkages among all the tenants as a way to support business growth and improve overall competitiveness. In India, it has been found that cohesion among park users is essential for self-resilience (Saleman and Jordan, 2014). To achieve this mix of firm size, a "lead-follower" dynamic can be established. With this type of dynamic, the "leader" firms (ordinarily large agribusiness companies) that see the potential of the park for creating collective benefit, exert an attraction force on "follower" firms (mostly SMEs) that decide to set up base in the park, generating win-win results.

- *Market orientation and exposure: domestic versus export*. Some agroparks have a clear export market orientation, whereas others have more of a local market flavour. For instance, the majority of the tenants of the Indian Kakkanchery Food Park target principally the domestic market and some of them only operate in the state of Kerala or in parts of it. The park tenants manufacture a wide array of food products, ranging from edible oils, ice cream, bakery products and honey to spices, nutritional foods, snack products, fruit pulps and concentrates, soft drinks and mineral water, as well as packaging materials for the food industry. In addition, most agroparks feature a mix of domestic and foreign agribusiness investors that have a local, domestic and international base or focus. In this way, a symbiotic relationship can be cultivated – international firms can benefit from a positive exposure to local business practices and culture, whereas domestic firms enjoy spillover effects related to improved access to foreign knowledge and new technologies.
- *Function*. This basically applies to agro-industrial manufacturers and ancillary players that provide non-agro services, such as financial, logistics and other ancillary services, and knowledge-based institutions responsible for innovation and technology transfer, and so on. Private universities and research organizations are often prominent park users. Their role is essential in the case of agrobased techno or science parks, to the point that they are frequently counted among the main drivers of such parks. This has been the case of the Zamorano Food Park in Honduras,[36] where Zamorano University created a small processing park as a training ground for students, while also helping local farmers to add more value to their agricultural production through processing. Similarly, cooperatives, interprofessional associations and other business organizations often have a stake in a park project, or even manage the park itself. In the Republic of Korea, for example, iCOOP – a second-floor cooperative gathering together consumers and primary cooperatives of agricultural producers – participated in the investment made to set up the Gurye Yongbang agro-industrial complex, an ecofriendly agro-industrial park in Gurye, Jeollanam-do province.[37]

3 International community

Developing country agroparks might also receive financial and technical support from donors, international organizations, multilateral and regional banks, and specialized platforms. For example, the United States Agency for International Development (USAID) has financially supported the Zamorano Food Park and the United Nations Industrial Development Organization (UNIDO) has provided technical assistance to the KINFRA Food Park in Kakkanchery, India. The latter has received UNIDO support throughout the life cycle of the project. In the design phase, UNIDO helped to identify promising food processing industries; prepare preinvestment business plans; and engage in dialogue with local authorities and

[36] https://www.zamorano.edu/en/academic-departments/food-science-and-technology/infrastructure/agroindustrial-park/
[37] http://icoopkorea.coop/?page_id=7960499

industry associations. It also collaborated in the marketing of the park and identification of suitable investors throughout Southeast Asia. As part of these efforts, a study tour was undertaken to other industrial parks in the region, and to food parks in particular. UNIDO also contributed to the initial implementation stages by helping to select suitable partners for establishing and operating common infrastructure such as cold stores, warehouses and the quality control laboratory; and provided specialized training, such as hazard analysis and critical control point (HACCP) training, including the preparation of a manual.

FAO, UNIDO and the United Nations Development Programme (UNDP) are assisting the Government of Ethiopia in the preparation of feasibility studies for agroparks. This support includes benchmarking international experiences; agrifood chain assessments; leverage of funds for the park and complementary interventions in infrastructure and upgrading value chain efforts; and recruitment of domestic and international companies through investment agencies or among those collaborating with or benefiting from development projects.[38]

4 Civil society

Civil society can play an active role in agroparks to ensure that tenants adhere to good business, labour and environmental practices.

Agroparks as dynamic communities

The various park stakeholders can play different, ideally complementary roles. A study based on three agroparks in the Netherlands confirms how a large number of stakeholders can be involved in the process of setting up a park. They often follow the leadership of the park champion (which might be a municipality, university, private company, regional government, Ministry of Agriculture, etc.). In the cases selected, key actors included designers and project developers, public sector organizations, member companies, communities, environmental organizations and political parties. These actors played various roles such as initiator, planner, organizer, executor/operator, coordinator, monitor/evaluator, investor, (legal) approver and partner. In many cases, several stakeholders played the same role (Wubben and Isakhanyan, 2011).

Stakeholders' roles evolve according to the park life cycle and may include the following:

1. concept plan for the development of an agro-industrial park;
2. selection of location and identification of potential demand and overall dimensions;
3. procurement of land;
4. masterplanning, including a detailed analysis of spatial organization of economic activities, sectors (for mixed-industry parks) and value chains;
5. financing, financial structuring and resource mobilization;

[38] Personal interviews with FAO, UNIDO and UNDP staff during visit to Ethiopia in November 2014.

6. marketing among potential investors;
7. procurement of infrastructure building and equipment;
8. tenant settlement;
9. park operation and maintenance;
10. M&E.

For example, the park promoter/developer would be involved in the earlier stages, from the definition of the park business model to site development and management, and the development of joint infrastructures and facilities (e.g. supply and waste handling, logistics), and interaction with the public administration. The operator of the park may be the same as the promoter/developer or a different organization, in which case a smooth transition should take place so that the new organization is able to operate the shared infrastructure facilities, support innovation, minimize risks and optimize communication and social networking, among other tasks. For instance, in the Mega Food Park Scheme in India, agro-industrial parks are centrally sponsored by MoFPI, but then a programme management agency provides management, capacity building, coordination and monitoring support.

Stakeholders' interests, expectations and actions may crucially influence the agropark trajectory, accelerating, delaying or even stopping its implementation altogether. Wubben and Isakhanyan (2011), based on their analysis of three agroparks in the Netherlands, came to the following conclusions:

- Stakeholders expecting negative effects from the project (such as environmental organizations concerned with potential water pollution or soil degradation) tend to oppose the initiative, creating delays and unexpected changes in the project. In this respect, obtaining community support is essential.
- Expected/potential future companies, lacking a strong interest in the project, tend not to support it publicly in order to keep their options open.
- Supportive key stakeholders (such as political parties convinced of the park's job creation potential) help and stimulate project completion, while the presence of only one opposed group of stakeholders may obstruct realization of the project.

Stakeholders' interests and perspectives evolve over time. Global trends and new economic developments can magnify this evolution, particularly in the case of a resource curse situation, for example, in which labour costs increase. The ongoing management and governance of agroparks can react to this by introducing some degree of flexibility in governance and operational structures.

Common infrastructure, facilities and services

Agro-industrial parks align connective and specialized infrastructure and agglomeration economies derived from the co-location of agribusinesses and agro-industries. The supply of high-quality infrastructure should be a continuum within the park premises and beyond the park gate. Potential investors will be reluctant to settle in the park if they are confronted with poor roads, port-related delays and little access to social infrastructure. Moreover, target tenants should be consulted as to which infrastructure, facilities and services are crucial, including those off park.

The provision of functional infrastructure is attractive to both participating firms and governments. Agribusiness and agro-industries may perceive parks as an "island of growth" in an otherwise infrastructure-poor environment. Governments, particularly those constrained by delivery, find it much easier to prioritize strategic infrastructure in a geographically limited space such as an industrial park (Saleman and Jordan, 2014). There is, however, no rule as to whether infrastructure has to be prebuilt by the promoter(s) or built by the tenants. This will depend on the country and local economic context, the attractiveness of the initiative to the private sector, and many other factors.

Collective infrastructure and facilities offered by parks

These may include the operation and support of good basic infrastructure (roads, power supply, telecommunications, water and sewers). For example, the provision of basic infrastructure in the Indus Mega Food Park (in Khargone, Madhya Pradesh, India) encompasses roads, water, effluent treatment plants and an electrical substation with a power back-up facility.

Facilities offered by parks may include the following:

- *Affordable industrial land and available buildings* for sale or leasing (under schemes such as shelter, built-to-suit and lease back) and sometimes low-cost standardized factory shells.
- *Areas for agricultural farming, fish farming and animal husbandry*, e.g. greenhouses, and poultry and aquaculture hatcheries. Greenhouses are provided in both the Agriworld Suzhou and the Zamorano Food Park.
- *A range of common specialized and general facilities*, given that agroparks are based upon the philosophy of integration of production and non-production functions (e.g. services, education and research) into an industrial complex.
  - Common, specialized facilities that are configured to suit the needs of agribusinesses and agro-industries, including specific value chains (e.g. organic products, fresh produce). For instance, the Prima Halal Food Park offers common cold storage rooms and a warehouse managed according to the halal protocol. Other facilities include waste collection, recycling and effluent treatment (for example, the IFFCO KISAN agropark offers common facilities for processing of waste and by-products); tool rooms, testing and food laboratories (the Zamorano Park has a food analysis laboratory, a food microbiology laboratory and a sensory evaluation laboratory); refrigerated storage and logistics platforms; educational facilities and managed and serviced workspaces; and exhibition spaces (Agriworld Suzhou provides ad hoc short-term and permanent product exhibitions, Fresh Park Venlo includes auction facilities, and Green Park Venlo contains international fair facilities).
  - Common general facilities may include recreation areas, sport facilities, food courts and residential spaces (for workers, trainees, visitors, etc.). A good illustration of this can be found in the masterplan of the Sikaria Mega

Food Park[39] at Tripura, India, which comprises bank and insurance offices, police and fire stations, a post office, a medical centre, garage and parking facilities.

Plug and play business model

Agro-industrial parks offer integrated facilities and services under the plug and play concept, as opposed to stand-alone facilities. The model provides a ready-to-use, high-quality supply of industrial land and buildings, as well as all basic services and utilities. In doing this, the park ensures an issue-free environment for the tenant and reduces start-up costs and risks for small and medium agribusinesses, allowing them to grow into medium enterprises. The added value of developing a park not as a stand-alone facility but rather as "an integrated industrial, commercial, residential and recreational entity allows developers to diversify their potential sources of

BOX 32

Infrastructure, facilities and services provided by Kakkanchery and Tumkur Food Parks, India

The creation of the Kakkanchery Food Park included the construction of general infrastructure such as internal roads, power supply (substation and distribution system), water reticulation, common facility buildings and offices for park users, communications network, bank, post office and other facilities. The park was also provided with specific support facilities and equipment needed by the food processing industry. These include a water treatment plant (common effluent treatment plant, and hygienic waste disposal system for solid wastes and liquid effluent), a quality control laboratory, a food incubation centre, a weighbridge and a common warehouse run by the Central Warehousing Corporation, and modern cold storage facilities.

The park planners established a single-window clearance facility for obtaining all regulatory licences/registrations from different public agencies in one place. They made available ready-to-use industrial plots with all utilities for investors, so they could have access to common facilities without any need to invest on an individual basis. Other common facilities for commercial and residential uses include a healthcare centre, convention facilities, a marketing and exhibition centre and accommodation for workers and staff.

The Future Group Food Park at Tumkur invested heavily in state-of-the-art specialized processing facilities such as cold chain infrastructure, pulping and individually quick-frozen lines, mechanized sorting and packaging facilities, grain mills and warehouses, and rainwater harvesting facilities. The park has other facilities such as quality testing and R&D centres and a plug and play facility (defined above) for SME entrepreneurs and food producers.

Sources: A public warehouse operator offering storage and other logistics services in India: http://cewacor.nic.in; http://www.agricultureinformation.com/postings/kinfra-2/; http://www.futuregroup.in

[39] http://www.tripuramegafoodpark.com

revenue and offset the potential low profitability of certain activities with higher margins in others" (Monga, 2011, p. 14). To back up this statement, Monga puts forward the example of many industrial parks in East Asia that generate as much as half their total annual revenue from business support and residential services.

Agroparks can offer a wide range of *services*, including the following:

- A whole range of *business services* including market analysis, import and export information, management advice, finance, law consulting, accounting, logistics services and event organization.
- *Specialized agro-industrial services* such as laboratory testing, certification and new product development services.
- *Streamlined public services* through government service centres (e.g. one-stop shops). For example, mixed industrial parks near the Yangtze River delta place a strong emphasis on helping firms to obtain business licences and hire workers (Dinh *et al.*, 2012).
- *Technical or specialized training, technology transfer and R&D services*. Agriworld Suzhou organizes training programmes, as well as technical talks, seminars and conferences. Both the Agricultural High-Tech Park (Viet Nam), and the Zamorano Park (Honduras) have an R&D section that focuses on the preservation and processing of agricultural products.
- *Financial services*. Yes Bank – an Indian commercial bank– was to provide specialized banking solutions for SMEs and rural farmers linked to the IFFCO KISAN agro-industrial park in Nellore, Andhra Pradesh.[40] The bank was one of the main promoters of the park, together with Alterra, the research institute of Wageningen UR in the Netherlands. They were interested in bringing the institute's agropark concept to India. Box 33 shows how the park has had some administrative problems over the last few years and is only now becoming fully operational.
- *Business incubation services.* Incubators (see Chapter 6) may be incorporated in agroparks, particularly when the park is linked with a university or research institute. However, this occurs less frequently with regard to agro-industry as opposed to ICT, for instance. Nonetheless, agroparks that are linked to cities (and especially when linked to clusters) may indeed be interested in incorporating an incubator. One example of park-incubator symbiosis is in the Vietnamese Agricultural High-Tech Park, which features an incubation centre to help entrepreneurs and companies in establishing an agribusiness or agro-industry company.
- *Linkages facilitation.* The success of an agropark further depends on what goes beyond the premises of the park, i.e. links with providers of raw materials. One model that explicitly highlights these links is the Integrated Agro Food Park (IAFP), which links the park to producers in catchment areas via a network of strategically placed rural transformation centres (RTCs). These centres serve as collection points and platforms for primary processing (grading, sorting and packaging), and for supplying agricultural inputs,

[40] http://www.iksez.com/index.html

equipment and banking services. This type of park is far more complex than the basic model in terms of investments (both in the industrial parks and the RTCs), heterogeneity of governance models, diversity of specifications to fit the various value chains that are prioritized in the different catchment areas surrounding the park, and dissimilar logistics and management sophistication levels. IAFPs are usually used in underdeveloped areas where the challenge to upgrade and modernize agrifood value chains is greater and requires marked synchrony.

The park will not necessarily offer these services if they are already available in adjacent areas. The reality is, however, that in most cases agroparks are built where an outstanding gap has been identified in terms of facilities and services for the agrifood sector. The park model is perceived as an effective strategy to fill such a gap by bundling the entire package together in one easy-to-access format. Again, there is no one-size-fits-all answer to the question of what is best – whether to establish all the services in advance (possibly subsidized) or grow in parallel with tenancy operations. Although an organic growth is usually recommended, this decision is highly context-specific and hinges on considerations of efficiency, market demand, and public planning and resource allocation processes.

BOX 33

Integrated Agro Food Parks: from theory to practice

In India, the business model posited by Yes Bank and partners in the IFFCO KISAN agro-park was to link the park firms to a network of RTCs in agricultural production areas, acting as a service provision hub (e.g. agriculture extension services, warehousing and banking) and collection point for raw materials supplied by farmers. This "integral supply linkages" model emphasizes the pivotal role of agroparks, with good organization and modern processing technologies, as the key element granting access to modern retailing and other stringent markets (Miller and Jones, 2010).

However, five years after its launch in 2009, the IAFP was still not fully operational, since the park land had been involved in court litigation. In March 2014, after a long judicial battle, construction works were resumed. In August 2015, IFFCO announced the entry of Coca-Cola as a tenant of the KISAN agropark, with the project of setting up five beverage units that will provide direct employment for 250–300 people.

Ethiopia has also opted for the IAFP model in an effort to modernize agriculture and increase value addition. It is currently preparing, in collaboration with international partners, feasibility studies for an agropark and its integrated networks of RTCs in each of the four main agricultural producing areas of the country. Indian expertise is being transferred to facilitate the smooth development of this initiative. Case 1 at the end of this chapter offers more information on the Ethiopian model.

Sources: The park had become partially operational thanks to a few companies that had started operating and exporting their products from the park before the trial: http://www.indiancooperative.com/iffco/iffco-md-meets-chandra-babu-naidu; http://www.thehindu.com/news/national/andhra-pradesh/state-asked-to-resume-iffco-land/article6142605.ece

4.6 PLANNING AND MANAGEMENT OF AGRO-INDUSTRIAL PARKS

Industrial parks are controversial. As with many good conceptual models, the reality of implementation may fall short of expectations. Some parks fail to reap the promised benefits of greater competitiveness through increased added value, and innovation and technology upgrades. In effect, many park initiatives have been plagued with design and performance failures, ranging from parks that are not built even after many design and promotion efforts, to parks that sit empty or are operated inefficiently mainly as a vehicle to provide hand-outs (Saleman and Jordan, 2014). In other cases, the positive impacts generated by agroparks may be offset by negative spillovers such as tax base erosion, pollution, lessened pressure for reform and crowding out.

Where to start

The three first steps of any park initiative should be to: (i) rally the interest of the main stakeholders in the park, and align their objectives and priorities; (ii) conduct prefeasibility and feasibility studies to provide evidence-based inputs for guiding the decision-making process (yes-no decision, location, targeted industries/value chains); and (iii) secure the land.

Ensuring alignment and leadership

Proper leadership and alignment among public institutions (line ministries, local governments, etc.) and between the public and private sectors are crucial success factors. Without them, park projects are doomed to remain a stack of old papers gathering dust in some government official's drawer. A few years ago, the Government of Ethiopia decided to develop agroparks to support the growth of key agricultural commodities, such as coffee, cereals and oilseeds. In spite of the interest generated, nothing happened for some time. The park project started to move forward only when the Ministry of Industry decided to champion the initiative, bringing on board the Ministry of Agriculture, the Ethiopian Agricultural Transformation Agency, regional governments and other national agencies, as well as a number of international agencies, including FAO.

Preparatory work

Preparatory work is necessary in order to select location, industries and supply chains. Making the right strategic choices in terms of park location and selection of industry/supply chains is key to making a compelling business case for the park. Planners should carry out solid prefeasibility and feasibility studies, which enable sponsors of the park (private companies, international finance institutions and governments) to take a yes-no decision. If the decision is positive, then the analysis performed will inform decisions on the different design elements proposed: site selection, design options, institutional and incentive framework, communication strategy, value chains targeted, and supply/demand assessment of infrastructure and services, etc.

These studies may be in the range of US$350 000 to US$500 000 (and upwards, depending on the scope of the study) according to several experts interviewed, but are worth the investment to avoid "flying blind". Subsequent investments are more substantial and, if the foundations of the park model are not well laid, chances of failure are amplified. The timeline for these studies typically ranges from seven

months to two years, depending on the magnitude of the investment and the complexity of the proposed park model. Average duration of the studies is about one year. Using the experience of international experts in this specific field of work may be advisable to bring down the learning curve and avoid beginners' mistakes. See Case 1 for further information on the scope of these studies.

Regarding the industry/value chain selection, experts carrying out these studies should place emphasis on gaining critical knowledge about the prevailing business and investment climate, and the performance and features of key value chains. They need to ensure that agrifood and other industries attached to the park (in the case of a mixed industrial park) are aligned with the comparative advantage of the location (i.e. suited to its endowment structure). As mentioned earlier, the ideal situation would entail a relocation of labour-intensive activities and subsectors/chains to countries with relatively low labour costs. The study should indicate whether this is so, or otherwise propose a set of protection policies and measures in order to make the park viable.

Fostering an unbiased, evidence-based decision-making process

Based on the outcome of the studies described above, planners should decide on the location of the park, taking the economic considerations highlighted by the feasibility study into account. What often happens, however, is that mixed economic and non-economic considerations end up by influencing the location decision. There is also the risk of having used wrong assumptions regarding demand estimation, regional agricultural output, etc. Choosing a poor location implies facing high transportation and transaction costs, so prospective investors will probably decide against settling in the park. For example, when Ethiopia decided to foster a pilot integrated agro-industrial park (IAIP), the Government sought to select an adequate location from 14 ecological regions, based on their natural resources endowment (selection of agro-ecological zones adequate for value addition through transformation); infrastructure development; degree of business development; and existence of promising agrifood chains. The planners undertook an extensive spatial planning exercise to the level of *woredas* (lowest administrative units) and considered the various agrifood chains present there. However, the Government decided to override the study recommendations and set up a park in each region (regardless of the estimated viability) following a sense of politically correct equal distribution among geographic areas and communities.[41]

Furthermore, planners need to select industries/supply chains based on solid preparatory work and comprehensive feasibility analysis, disregarding their unfounded or personal biases. An alternative to avoid randomness in industry/value chain selection is to leave the selection to the market. For example, in the Chinese context, most parks did not preselect specific industries but instead let market forces drive the formation of specialized clusters, and this was one key factor for success (Dinh *et al*., 2012).

[41] Ibid.

Securing land

Once the green light has been obtained and the location has been chosen, the promoters will need to secure land for the park project. Like most infrastructure projects, agroparks face the key challenge of land acquisition. Precisely, the provision of land – together with key infrastructure – is typically one of the major contributions of the public sector to agropark projects. These inputs can be considered a "capital subsidy" that frees up the resources of tenant firms, enabling them to invest more in product development and market penetration, rather than in land acquisition and buildings. This support is considered necessary to address a market failure that prevents private agro-industrial and agribusiness firms from responding to a "pent-up" demand, i.e. these companies would be willing to move to the targeted location and build facilities at the going price, but they are unable to do so (Coupal, 1997). This is seen as a "lubrication incentive", aiming to speed up eventual free market adjustments by fostering agglomeration economies and minimizing risks and historical and institutional barriers. On the other hand, in the presence of a well-functioning land market, public intervention to secure land for an agropark would eventually introduce distortions, inflating land prices so that non-park businesses and new residents would encounter difficulties in purchasing land. It could also trigger a "subsidy race", i.e. encourage non-park firms to lobby harder for other subsidies or tax breaks for themselves.

Other problems related to land acquisition for agropark development include accusations of land grabbing and other conflicts with local communities, particularly in countries with communal land tenure systems (traditional in Africa); and misalignment between central public authorities (sponsors of agropark programmes or projects) and local authorities (land managers). Many of the Indian Mega Food Park proposals approved by the corresponding central public authorities have never seen the light of day, precisely because of bottlenecks in land acquisition at the local level.[42]

Designing the park

The success of an agro-industrial park depends crucially on its design: poor design may hinder or even block the park project. A solid design process typically combines elements of business, scientific and engineering research that may take the form of feasibility studies (covered in Case 1) and masterplanning, complemented with process evaluations aiming to generate further knowledge. The design of the park encompasses location, physical design and institutional choices. The location issue has been discussed in the previous section, so the following paragraphs will deal only with the physical and institutional dimensions of park design.

Physical features with implications for park performance

- The *basic design of a park needs to be functional*, in terms of both physical layout and buildings, including interior and exterior elements. The layout proposal for an agro-industrial park integrates a set of elements such as site

[42] Business Standard, August 2013: http://www.business-standard.com/article/economy-policy/why-have-food-parks-failed-to-take-off-in-india-113080900871_1.html

TABLE 9
Agropark institutional design: challenges and solutions

Element	Challenges	Solutions
Objectives	▪ Lack of clear objectives ▪ Objectives not consistent with the agropark model ▪ Significant differences between partners in terms of objectives, managerial style and other crucial topics	▪ Conduct multistakeholder meetings to align objectives ▪ Elaborate a park plan or statement clearly stating the mission, vision and objectives of the agropark ▪ Assess whether the park model is the right policy tool to achieve the stated objectives
Enabling environment and rule of Law	▪ Legal framework that does not support the development of agropark (inconsistent, incomplete, inadequate, not enforced) ▪ Wrong policies ▪ Political instability	▪ Revise relevant legal framework to fill gaps, correct inconsistencies and improve enforcement (by developing special/dedicated enforcement arrangements for the park, in line with its "experimental" nature) ▪ Revise policies impacting agroparks ▪ Introduce mechanisms to prevent or cope with political instability, or to isolate agroparks from it
Transparency, equity and inclusiveness	▪ Lack of transparent criteria and processes to select park operators and tenants ▪ Bias against park companies on the basis of their origin (domestic versus foreign) or scale (small versus large)	▪ Elaborate, publish and use transparent criteria for selecting park tenant companies and operators ▪ Generate data disaggregated by origin and scale to be used as decision-making inputs ▪ Introduce a system of checks and balances to avoid discriminating against companies on the basis of their scale/origin ▪ Introduce a system of checks and balances to fight against corruption
Participation and consensus building	▪ Key agropark stakeholders not involved or involved at a later stage ▪ Lack of coordination mechanisms among park stakeholders	▪ Launch multistakeholder consultations at the design/inception phase to align views and objectives and ensure participation and consensus ▪ Favour governance models that ensure the participation of public and private park actors and foster coordination among them, e.g. PPPs ▪ Set up park tenant associations ▪ Ensure representation of farmers and other key stakeholders in the management structure of the agropark ▪ Establish high-level and/or technical coordination arrangements among relevant public sector institutions dealing with agroparks (interministerial committees, focal points liaising with central and decentralized agencies, etc.)
Responsiveness	▪ Bureacratic burden, delays and/or lack of response	▪ Set up agile governance arrangements such as one-stop-shops for streamlined delivery of public services ▪ Privilege private sector involvement in operation and maintenance of agroparks
Scaling-up strategy	▪ Too ambitious a project in relation to the funds available and/or the capacities of stakeholders for funding, building and organizing the park	▪ Develop concept proposal ▪ Demonstrate proof of concept ▪ Design and implement scaling-up strategy

Source: authors' elaboration.

planning for building footprints and an industrial development complex, coupled with extension of infrastructure to the site and permit approvals for industrial, office and residential buildings and uses. Selecting appropriate layout options is not a simple undertaking, given that many agro-industrial users have very particular specifications for their operations. Moreover, many construction firms in developing countries are experienced primarily in commercial and residential development but may not be as knowledgeable about industrial facilities.

- The *right industrial facilities* are vital, especially ensuring the proper implementation of components related to energy efficiency, waste management and pollution prevention.
- *Choosing the right size for the park*. If the park is too small, it may face congestion and waste disposal problems, as well as tensions between existing and potential tenants for space. On the other hand, if the park is too large, a large proportion may remain idle. A way to avoid making mistakes about size is to foster a multistage implementation process in successive phases to allow for the expansion of current and new tenants, or to dedicate (more) space to already existing/new uses (introduce R&D space, residential areas, etc.).
- *Ensuring proper access to good off-site infrastructure*. Some park proposals are too self-centred, emphasizing the provision of top-quality on-site infrastructure, but neglecting to ensure access to adequate trunk infrastructure. When parallel plans for improving both on-site and off-site infrastructure are devised, the funding and implementation of such plans can split at some point, particularly when they depend on different drivers and responsible agencies. What most often happens is that the larger, longer-term investment in trunk infrastructure gets postponed, inexorably hindering the viability of the park project.

Institutional dimensions of park design

As seen in Table 9, a functional institutional design implies the following:

- The objectives of the park are clearly articulated and realistic, and the policy tools for achieving them are consistent (Monga, 2011, p. 8).
- There are clear rules and a predictable, enabling environment. Good agropark governance requires fair legal frameworks enforced by an impartial regulatory body, for the protection of all stakeholders – particularly the weakest links in the agropark project. The creation of an enabling environment means making sure that efforts towards agropark development are not offset by ineffective macro and microeconomic policies that introduce major distortions and lead to failure. It also involves keeping the frequency and intensity of economic policy reversals to a minimum, as they may generate an unpredictable and non-transpartent environment that endangers long-term investments in the agropark. For example, Dinh *et al*. (2012) note that the development of agro-industrial parks in Africa has often been undermined by unstable policies that resulted in year-to-year changes in the fundamental "rules of the game". Conversely, China's stable political regime – coupled with the existence of a highly educated workforce – is frequently highlighted as a critical element in the success of its industrial parks.

- *There is transparency, equity and inclusiveness.*
  - All key actors need to be involved in the design process from an early stage, with clear role allocations (i.e. there should be no unclear or overlapping roles, nor glaring gaps in the division of roles). Moreover, a good coordination system should be in place.
  - Transparent criteria need to be established for qualifying firms (potential tenants of the park). If a pro-international tenant bias is introduced in the park masterplan, for example, the domestic private sector may be disconnected. This might generate a negative perception of the park, which could be seen as a privileged enclave for influential multinational agribusinesses that have good connections with local politicians.
  - Political capture and rent seeking behaviours (Monga, 2011, p. 7) should be minimized by establishing transparent procedures and strong governance mechanisms to avoid creating opportunities for corruption (Monga, 2011, p. 14). Some authors (Rugraff and Hanse, 2011, p. 173; Monga, 2011, p. 13) have expressed concern about the risk of distorting the selection of local and foreign investors in favour of the latter, thus offsetting the ability of the park to generate positive impacts on the local economy. A solution would be to introduce a system of checks and balances to avoid discriminating against domestic (or, by the same token, against foreign) firms. The same logic applies to biases stemming from firm scale and scope.
- *Participation and consensus building.* Participatory design is usually a preferred option. This involves engaging key stakeholders from the very beginning, such as entrepreneurs, knowledge actors and Non-governmental Organizations (NGOs) working on behalf of consumers and producers, as well as government institutions (local, regional and national), including their technical, financial, environmental and regulatory departments. Agroparks, like any agro-industrial initiative, may suffer from poor coordination of agricultural, trade and industrial policies and institutions – sometimes holding conflicting or overlapping mandates. This can be reduced by creating new or strengthening existing high-level and operational-level interinstitutional coordination committees. Another option is to designate focal points for industrial parks, agro-industrial infrastructure projects, etc. It is also important to create strong governance mechanisms that incentivize the participation of stakeholders. For example, PPP management of the park offers opportunities for dialogue, as does the establishment of an association of park residents, as discussed earlier.
- *Responsiveness.* Agropark organizations and their processes need to be designed to serve the best interests of tenant firms and other private investors within a reasonable time frame, with a view to reducing bureaucracy delays.
- *Starting small and scaling up.* When designing an agropark programme, it is often a good idea to start small with a pilot park to prove the concept and then proceed in incremental stages from there. However, replication of the pilot intervention to deliver impacts on a larger scale entails some risks. Planners need to adapt the model to the different types of arrangements required for each type of value chain or commodity selected, and to the competitiveness level of the new region and stakeholder characteristics.

Marketing the park to prospective tenants

Even the most beautifully designed agropark project can fail through poor marketing or inadequate management of an initially good concept. Park sponsors should promote the project on various fronts, sensitizing public opinion and creating a culture of dialogue with civil society and the local business community. Therefore, the marketing process would ideally comprise four elements feeding each other: (i) elaboration of a solid marketing plan for the agropark project; (ii) opinion building and alignment of objectives among stakeholders; (iii) promotion among potential tenants, both locally and internationally; and (iv) dialogue with civil society.

Drafting a well-researched marketing plan for the agropark initiative

Without a clearly outlined marketing plan, park promoters will not stir corporate interest, thus failing to attract the appropriate set of tenants to come forward and locate in the park. Without effective marketing strategy, there is the risk of having half-empty parks or even idle shells with no tenants. Inadequate marketing may also cause the random mushrooming of small companies from very different types of industries (hybrid parks) and subsectors/value chains (specialized agrifood parks). This unsystematic tenancy pattern results in the absence of economies of scale and other positive externalities. Another consequence of poor marketing is an inability to tap additional resources, because potential stakeholders and investors are unaware of the initiative. Some governments trust international organizations to guide them in determining the right profile of prospective operators and tenants by bringing the experience of international companies and benchmarking with global experiences. These organizations can contribute to recruiting domestic firms (SMEs in particular), producer organizations, financial institutions and providers of ancillary services with whom they are in touch via other projects in the host country.

Developing a good marketing plan requires careful research to understand the industry as well as the cultural and business context of the host territory. Lack of in-depth knowledge of the industry may lead to misreading corporate interests and, hence, mistargeting potential corporate takers for the parks. For example, some Indian park promoters tried to entice companies in the "fast-moving consumer goods" industry to invest in a project, without realizing that the trend is for these businesses to increase outsourced production and decrease in-house manufacturing. In theory, it makes sense that an Indian firm operating in the segment of consumer products such as hair oils, coconut and other edible oils, would consider investing in processing facilities in an agropark adjacent to oil crop production areas, but the reality is that in the present economic context the firm would rather invest in marketing.[43]

Aligning objectives and development strategies among the various stakeholders involved

This is a multipronged process that involves reaching a broad consensus among public actors (central and decentralized entities, various line ministries, public knowledge institutions, etc.) and among private stakeholders (international and

[43] Business Standard, August 2013: http://www.business-standard.com/article/economy-policy/why-have-food-parks-failed-to-take-off-in-india-113080900871_1.html

domestic companies that have already expressed interest in locating in the park, farmers and farmer organizations and other local value chain actors, logistics companies, etc.), as well as bridging any potential public-private disconnection. By doing this, the chances of the park project not being implemented or of having a semi-empty park, once built, may be minimized.

The nature of the stakeholders involved in this process will be a function of the type of agropark envisaged. For agrotechnoparks the emphasis should be on opinion building and alignment among stakeholders belonging to the local and national innovation system (or international, depending on the scope of the park) by sharing the park/innovation programme with ministries of agriculture, trade and industry, education, knowledge institutes, private and public R&D centres, social organizations, local government bodies and concerned agribusiness firms. A core part of this multilevel alignment process is to verify that central, state and local authorities are on the same page, have compatible interests and strategies, and agree on their respective responsibilities.

Promoting the park project among potential park users

The project should be promoted particularly among local and international agribusiness firms and agro-industries. As seen earlier, agro-industrial parks are institutional innovations that strive to create a critical mass of interlinked enterprises, services, investment and infrastructure development. This critical mass cannot be achieved without the right promotion. A marketing and promotion plan targeting international and national investors could be created for stand-alone park initiatives or for a package of park programmes/schemes. When competing in the international arena, merely having a good marketing plan for the park is not enough. Strong high-level political commitment is required for successful implementation, coupled with support from pioneer tenants and, possibly, the domestic business community.

The *roll-out of the international dimension of the marketing plan* will ideally include organizing well-prepared, well-targeted (to specific subsectors and value chains) and well-advertised high-level visits to countries and areas with potential investors. This is only possible when government officials and private companies involved in the park development are convinced of the value proposition of agro-industrial parks as major platforms for investment with the potential to become national/regional hubs for specific value chains and subsectors, and agribusiness development in general. Lead companies already settled in the park can play a significant role in bringing new firms to the project to achieve the critical mass needed to compete. For example, activities seeking to engage international investors could include bringing interested entrepreneurs to the park site to see the infrastructure and talk to pioneer firms located there. Another international initiative could be to invest in networking with international associations and networks of industrial and business parks, SEZs, etc.

Active promotion for and dialogue with the *local business community* should complement the above efforts. This is not only necessary to bring more firms to the park, but also to stimulate a healthy dialogue and information sharing among local stakeholders and the public at large. In this way, it is possible to minimize opposition to the project among agro-entrepreneurs, who can be guided for instance by

a wish to avoid increased competition or by the perception that cohesion among park tenants specialized in highly diverse enterprises may undermine their entrepreneurial freedom (De Wilt *et al*., 2010, p. 2).

*Key dissemination points that can be used to advertise agroparks (*either the park programme/scheme or stand-alone initiatives) and engage with prospective investors are explained in Chapter 7. They include the following:

- *Investment Promotion Agencies*, either central or decentralized. For example, the Tatarstan Investment Development Agency in the Russian Federation has recently become involved in the promotion and development of agro-industrial parks and other territorially based tools.[44] Similarly, the Philippine Economic Zone Authority (PEZA), an investment promotion agency attached to the Philippines Department of Trade and Industry is involved in the promotion and development of food parks with SEZ status. PEZA has had an influential role in the development of the CIIF Agro-Industrial Park, Food Terminal Incorporated and Cocochem Agro-Industrial Park.[45]
- *Chambers of Commerce and industry associations*. In Colombia, the Chamber of Commerce of Bogotá is promoting the development of the *Mega Parque Agroindustrial del Centro del País*, in Fusagasugá.[46] Another example is the Dinterloord Agro-industrial Complex, in the Netherlands, which was also promoted by the local Chamber of Commerce (De Wilt, van Oosten and Sterrenberg, 2000).

Ensuring open dialogue with civil society is a powerful means to disseminate the park initiative and avoid image problems among citizens. Such problems may arise when consumers perceive parks to be in conflict with their demand for high-quality and sustainable agrifood production (an issue that arose in parks in the Netherlands), particularly when confronted with the large-scale and industry-like character of certain agroparks (De Wit *et al*., 2010, p. 2). Other sources of opposition derive from land issues, including the ousting of other uses of land (e.g. traditional farming and residential purposes). De Wit *et al*. (2010, p. 3) propose a twofold strategy to avoid or counteract this antagonism: first, to promote the debate about normative considerations and decisions concerning agroparks and, second, to encourage interactive design trajectories culminating in a widely accepted masterplan for the agro-industrial park. The main aim of the debate is to give citizens enough information to enable them to understand the potential boost of agro-industrial parks for the regional economy by both increasing the added value of local products and creating the basis for local and foreign investments. At the same time, risks and preventive measures related to negative impacts of the park, deterioration of the environment, exclusion of local businesses and exploitation of workers and farmers can be debated.

[44] http://invest.tatar.ru
[45] http://www.peza.gov.ph
[46] http://camara.ccb.org.co/portal/default.aspx

Financing the park

Once land for the agropark has been secured, work on the on-site infrastructure and facilities, together with the linkages between the park and trunk infrastructure, can commence.

Raising funds for full coverage of investment costs

There are several options for attracting the necessary financial resources and their corresponding ownership options to create the technical and production infrastructure of agro-industrial parks:

- *Public financing*, using resources from the state budget or the corresponding local authority. Exclusively public sector-funded agropark initiatives are rare because of limited public financial resources – notably in developing countries – to undertake the infrastructure works needed, compounded by a lack of streamlined operational procedures and skills of public sector officials to develop the business potential of the park successfully.
- *Public-public co-financing*, with contributions from the state budget, budgets of administrative territorial units, foreign donors and/or global and regional development/financial institutions. International financial organizations (e.g. the International Finance Corporation, International Fund for Agricultural Development and the World Bank) and regional development banks are often involved in agropark projects in developing countries (Monga, 2011, p. 13), particularly in pioneer projects, i.e. when the agropark model is new to the country/region. According to Lowe (2001), publicly owned industrial parks have several advantages – financing may derive from a variety of public budgets; a property already owned by a public or quasi-public agency can be used for the project site; results obtained from park design may reduce the need for other public investment; and incentives can be offered to companies as part of the attraction strategy (Lowe, 2001). However, public landownership and management may translate into heavy public presence and risk of political interference in park management.
- *Private financing* by a local or foreign private investor acting as park operator. This option implies 100 percent private ownership, with or without government grant assistance. Depending on national legislation, a private company can develop an agropark provided it has the necessary permits, specifically the location and acquisition licence from the local government and any park development permit required by subordinate ministry and other central authorities. This option has several advantages such as freedom of action, ability to make agile decisions and capacity to tap additional financial resources of the private investor *vis-à-vis* the public sector. Yet disadvantages may also be substantial, in particular in contexts where the private investor faces lengthy investment competition processes and bureaucratic obstacles related to codecision procedures (i.e. involving the private investor and administration units or state). Potential investors can also be deterred by perceived risks, such as the likelihood of their contract being declared void (in the event of adverse political changes or wrongful interpretation of established conditions) or uncertainty about the solidity of the business case (failure to sell shares of the park).

- *Private-private co-financing*. One option is to pool the resources of the private investor entitled to operate the park and those of resident park companies, after joint creation of technical and production infrastructure.
- *Public-private co-financing* involves the use of a combination of the funding sources described above to equip fully and service agroparks with purpose-built facilities, which can then be put up for sale or lease. This arrangement implies part of the expenses being covered by (national, foreign) private investors and part coming out of the state or local administration budget. As most developing country governments continue to need substantial private sector financing for agroparks and other agribusiness infrastructure projects, attention should be given to regional capital markets as a potential channel for fund raising (e.g. effective municipal bond markets and other innovative public-private solutions). Ideally, parks could start as PPPs, with public provision of off-site infrastructure such as roads, and public-private funding of on-site facilities (Monga, 2011, p. 12).

Alternatively, governments could provide direct financial support or guarantees to build infrastructure and facilities in the park. The implementation of this financing option may take many forms: a concession agreement, subcontract, fiduciary management agreement, lease agreement or civil society agreement.

Some national laws contemplate the state being the majority shareholder of agroparks set up via PPPs, while others support the government taking a minority share in equity (without counting incentives or initial grant assistance). For instance, the main stakeholder of the Agriworld Suzhou Park in China is WBL Corporation Ltd, a Singapore-based multinational enterprise specialized in the motor industry and the production of agrotechnology products. This private firm has a stake in the project of 83 percent, against the 17 percent of the Government of Suzhou.[47] For further information on PPPs for the development of agroparks and other agricultural market infrastructure, see FAO (2015).

Park investors may attain their investment needs and objectives through a *single investment vehicle* or a *hub-and-spoke model*. The latter is an investment structure in which several investment vehicles pool their assets together by contributing to one central investment vehicle, although each remains individually managed. The central investment vehicle (the agro-industrial park) is the hub, while the smaller investment vehicles (e.g. collection and primary processing centres that feed raw materials and semiprocessed products to the park, and the integrated cold chain network that connects them) are referred to as spokes (Aggarwal, 2014). This model provides integrated infrastructure facilities for agro and food processing units along the value chain and helps in leveraging public incentives for these industries, which makes it preferred by entrepreneurs in related sectors.

Brownfield versus greenfield investments in agropark projects. A low-investment option would be to build the park around existing facilities and firms (brownfield investment), but accommodating them in new park design might prove an unneces-

[47] http://www.chinaagriworld.com/sza-english/index.asp

BOX 34

Examples from China and India of PPP financing of agroparks

In China, industrial parks are often financed through partnerships between local governments and private companies. Local governments usually seek loans to finance these parks, which will subsequently be repaid in part from the stream of additional tax revenues derived from the parks.

In India, MoFPI, as part of the centrally sponsored Mega Food Park Scheme, channels funds to states for implementation. As part of this scheme, the Kakkanchery Food Park has received public investment for co-financing of common infrastructure facilities in excess of US$4.4 million. The private counterparts, i.e. the 28 companies established in the park as of June 2014, have collectively invested US$19.38 million in the park, and have generated over 600 permanent jobs. However, frequent interruptions and delays in the flow of funds from central to state authorities hindered the performance of the scheme in the first few years. In order to address this problem, measures to empower regional and local authorities (both in terms of financial and human resources) have been taken, and a new financing and operational PPP model adopted.

Sources: Dinh *et al*., 2012; Saleman and Jordan, 2014.

sary drain on the overall efficiency of the park (Ravensbergen *et al.*, 2013). Agroparks concerned with the provision of a modern industrial environment equipped with high-capacity public utilities and connective infrastructure as a greenfield investment require a much larger amount of funding. In return, pre-existing players and investments do not restrict the choice of optimal layout and organizational solutions. The preference for either greenfield or brownfield investments should be assessed on a case-by-case basis.

The *adequacy and timing of investments* in park infrastructure and services are essential to convince potential park users to settle in the park. However, the reality is that in certain contexts the investments planned in the blueprint of the agropark do not happen at all or are delayed. According to Dinh *et al*. (2012), insufficient investment in infrastructure has plagued most African industrial parks, with agro-industrial production hindered by water shortages, electricity outages, and health, safety and environmental shortfalls. These investment failures may refer to the provision of industry-specific infrastructure and/or that of connective infrastructure. A patchy provision of services, poor logistics and a weak supply chain, a reflection of limited clustering, are also a matter of concern in many agro-industrial park experiences across the globe, particularly in Africa.

In the case of non-public development and management, state and local government authorities can *offer financial incentives to agroparks* in the form of grants, equity, soft loans and contributions to long-term interest or interest-free bonds (Ravensbergen *et al.*, 2013). Low-cost land and simplified procedures can be considered as incentives available to relocating companies or new establishments to compensate either for disturbance or for extra costs incurred in settling in the park. Subsidized rents for an initial period may be justified, as long as there is a

phasing-out strategy that guarantees comparable rental rates to those prevailing in the area over the medium term. Financial incentives will be discussed extensively in Chapter 7.

Managing the park

Sound park management requires successfully implementing a business strategy that focuses on overall competitiveness and profitability by taking care of site operation, common services and linkages creation so that tenant companies can concentrate on performing efficient manufacturing and logistics processes and further building business relationships. Among other things, managing the park involves the operation and maintenance of on-site infrastructure and facilities; handling the portfolio of support services; commercializing the park project on a profit basis; and taking care of strategic management considerations (e.g. internalization and networking, green growth, human resources development and innovation strategy).

Some parks are managed by the *public sector*, others by *private actors* or via *PPPs*. A case of public sector management is the Kakkanchery Food Park, managed by KINFRA. The decision-making body for KINFRA Park is a board subcommittee of KINFRA, chaired by the Principal Secretary of the Government of Kerala, who looks after the activities of the Department of Industries in that state. The policy-making apex body is the KINFRA board, chaired by the Chief Secretary of the Government of Kerala, the state's highest-ranking official. Although the Managing Director of KINFRA heads the park organization, a general manager is entrusted with project-related activities in the park, and an officer-in-charge looks after day-to-day affairs.

Monga (2011) warns that parks exclusively developed, regulated and operated by public entities may face various challenges, such as issues of lack of expertise and capacity, and inadequate institutional arrangements that lead to conflict of interest situations. He believes that totally privately managed and operated parks should be encouraged. PPP companies are increasingly managing and maintaining agroparks. For example, the Bizerta Park in Tunisia is managed by a PPP company created in 2006, which adopted the legal form of a science park linked to an industrial estate (Gálvez-Nogales, 2014). The park was launched using a bottom-up participative approach that involved consensus building and consultations with leading operators and key institutions, while ensuring coherence with the strategic analysis of the agrifood sector and the orientations of the Ninth Tunisia Plan, which prepared the ground for the establishment of the PPP company.

Agroparks can be operated as a *single managed entity* or as a system with components operated using a *diversity of management options*, purely private, purely public and PPP. All three solutions can coexist within one agropark. For example, commodity-specific facilities within the park could be owned and operated using different options. A further option would be to separate the management of different park elements (e.g. agro-industrial site, logistics platform and business incubation centre).

Managing an agropark involves facilitating park linkages. Consequently, park managers are increasingly incorporating services and efforts aiming to support the creation and strengthening of linkages along the value chain through strategic agreements and other activities. These linkages can be vertical, horizontal or related to innovation and green growth:

- *Vertical linkages* extend both backward with input suppliers and farmers, using support systems such as contract farming and warehouse receipts, and forward with traders, retailers and exporters.
- *Horizontal linkages*, both among park tenants and between park and non-park firms, are also critical to park success. In some parks, a park tenant association is set up to represent common interests and foster economic and environmental performance. The association can eventually supply services to its members, including administrative, market intelligence and research support services (Lowe, 2001). It may also be instrumental in improving tenancy terms (e.g. achieving easy-in and easy-out tenancy agreements, and optimizing tenancy costs). It is a way to alleviate the "invisibility" of users, frequently overlooked or involved only at the later stages of project development (Saleman and Jordan, 2014) in spite of being essential for its success.

BOX 35
Strengthening backward and forward linkages of agroparks

Building backward linkages in Jamaica. As part of its efforts to position agribusiness as a leading sector in the national Economic Reform Programme and the Growth Agenda, the Jamaican Ministry of Agriculture and Fisheries devised a strategy to foster tripartite investments (government, farmer organizations and buyers) in selected territories and agrifood chains (e.g. Irish potato, ginger and turmeric). This strategy follows a three-pronged approach that combines the establishment of agrifood parks with the development of irrigation systems to expand crop yields, and the promotion of supply agreements between irrigated farmers and consortia of park tenants. One of the six agroparks projected by 2015 is Yallahs Park (for processing onion and other crops) in the parish of Saint Thomas, near Kingston. A US$4 million investment in irrigation facility and last-mile infrastructure (farm roads and a packing house) implemented through funding from the Inter-American Development Bank will complement the park. The 300 farmers benefiting from this irrigation scheme (first phase) sell their crops to the agropark firms.

Building backward linkages in India. The IAIP model adopted by Yes Bank and IFFCO Kisan emphasizes how important it is for the performance of the park to develop strong links with producers in catchment areas. In some contexts, without this additional effort to build market linkages between park tenants and producer groups near the park through intermediate structures, park firms would probably endure challenging and inefficient procurement processes that could put their performance and that of the park at risk.

Building forward linkages in Viet Nam through strategic collaboration agreements. Viet Nam's state firm Dong Nai Food Industrial Corporation (DOFICO) and the French Glon Group are collaborating to develop an agropark located in Dong Nai province, dedicated to the production and processing of livestock. The Dong Nai Agropark has entered into a joint venture with the Marubeni Corporation, one of the largest general trading houses in Japan, to supply a fresh food chain store that Marubeni is developing to supply safe, green products to consumers in Ho Chi Minh City and elsewhere in the country.

Source: http://moa.gov.jm/Speeches/2014/20140109_Ministers_Speech_at_Commissioning_of_the_Yallahs_Irrigation_System.php

Several park schemes, such as those in China, go beyond creating cohesion among tenant companies: they favour the formation of linkages between park-based and local firms so that the agroparks provide demonstration effects and activate the local economy. This means, however, finding the right park size and the right mix of tenants. Otherwise, very large parks or parks with very large tenant companies may create distortion in favour of the parks and to the detriment of non-park actors, as well as risks of political capture (Saleman and Jordan, 2014).

- *Innovation linkages.* Agroparks are logical enclaves of innovation and experimentation, both policy-wise and operationally. Therefore, innovation linkages may be established among park tenants and with knowledge institutions that help firms to meet the informational, learning and technological needs required by markets. Such linkages with innovation institutions and networks from within and outside the agropark (including international and South-South innovation networks) are essential to create the nurturing environment required to foster vibrant innovation-based industrial development.
- *Green growth linkages* aiming to reuse, reduce or recycle. These linkages imply building upon opportunities for recycling wastes and/or using rejected products from one processing stream as raw materials for the next. A case in point is in using by-products or rejects from a vegetable packing unit for animal feed production. The design of the WAZ-Holland Park under construction on over 350 ha in Changzhou, China, specified using the waste of reared pigs and deer as inputs for biogas plants and as manure for plants (Smeets, 2011).

4.7 LESSONS LEARNED

This section offers a summary of lessons learned from experiences in developing countries:

1. Policy-makers should consider using agroparks as a tool for agribusiness development when their main goal is to add value through processing across a number of competitive agro and food chains that are present in a territory circumscribed by cities and their hinterland. Agro-industrial parks may help them adopt a sustainable approach to agribusiness development at a lower local level (municipal, provincial) that matches agrochain development and spatial planning priorities.
2. Policy-makers need to appreciate the importance of gathering enough information and of clarifying objectives and principles before making any strategic decisions regarding targeting, location and dimension of the park, as described in Case 1. Diligence in the scoping and preparatory phase can save tremendous time, energy and resources, and will determine the competitiveness of the park. Planners should build parks on existing or potential agro-industrial strengths and local comparative advantage. This means exclusively targeting agrifood value chains for which the country or region has a comparative advantage. Matching the park features to the region's comparative advantage is a complex business that requires carefully executed feasibility studies (for example, on techno-economic issues, market demand and strategic planning) and masterplanning.

In particular, the choice of location for the agropark is a key strategic decision. Planners should weigh up the optimal position by trading off proximity to production catchment areas against closeness to target consumers (depending on the nature of prioritized value chains), availability of land, and access to gateway infrastructure, among other factors. Location decisions not justified on economic grounds (e.g. used for personal or political gains, or for developing lagging regions without addressing the scale-related and connectivity challenges) should be strongly discouraged. The acquisition of land is a critical bottleneck that can derail agropark projects if not properly handled. Determining the right size (*inter alia* via supply-demand analysis) is another essential element for achieving success. Getting the size wrong either way – an agro-industrial park with a semideserted feel or one that has stretched beyond its maximum capacity – takes a toll on profitability. The masterplan of an agropark initiative needs to consider risk mitigation strategies to address potential risks, such as environmental risks and "leakage" of proprietary technologies or techniques.

3. Successful agroparks sustain an integrated, multistakeholder and multilevel approach over the long term. Establishing an agropark is no simple matter, so a fragmented strategy will be unlikely to turn into a business success. Common mistakes are rushing the agropark development process or excluding key stakeholder groups in park planning and implementation, which may disenfranchise or alienate them. For example, the absence of central, regional or local levels in the agropark project will limit its potential. Moreover, a strong role for the public sector seems to be key: the government needs to cover start-up costs and major investments in public goods such as on-site and off-site infrastructure. This does not diminish the importance of private management and operation of the park, nor the increased tendency to favour public-private solutions.
4. There is no one-size-fits-all approach to determining the right mix of infrastructure and facilities. However, it appears that this mix often includes a range of basic infrastructure, industrial land and buildings, as well as common general and specialized facilities (i.e. for agricultural/agro-industrial purposes). The same can be said of services: from business services, to financial, business incubation and public administration services, among others. As mentioned earlier, securing land, water and other resources needed for agro-industrial development for the park, in the right location and magnitude (to satisfy both initial and future land requirements), is indispensable for the success of the agropark initiative. This is particularly critical in developing countries in the context of global land grabs, and in areas where political and social conflicts are regular. It also means that policy-makers need to understand that a park approach that works successfully in country A will probably require adaptation to the specific context of country B in order to yield good results, as seen in Case 2. "Park models" have to be adapted to fit the specific features of the local business environment and investment climate and reflect the strategic choices made regarding location, industries and tenant typology. The categories of agro-industrial parks identified according to industry targeting, premises and

services offered, development objectives, ownership and starting-points are useful to guide decision-makers through a systematic process to design an effective agropark format.

5. When masterplanning an agropark, promoters should take into account lessons learned in the design of generic industrial parks. In particular, agroparks should ensure agro-ecological stewardship and social sustainability, and find tailor-made solutions regarding the portfolio of areas/facilities (e.g. spaces dedicated to manufacturing, administrative tasks, ITC and recreation), services offered and mix of park tenants (agroprocessors, academic and research institutions, logistics companies, financial providers, etc.).
6. No masterplan is cast in stone and, therefore, changes to the original plan may need to be introduced to respond to unforeseen challenges or to take advantage of emerging opportunities. Case 3 offers more information about this.
7. A brilliantly masterplanned agropark project will not be succesful without suitable marketing and promotion efforts. A successful agro-industrial park needs to carry out marketing and investment promotion activities on various fronts (internationally and domestically) using key entry points. What is more, these activities will need to go hand in hand with the sensitization of public opinion and a culture of dialogue with civil society and the local business community.
8. Another critical success factor is careful planning of the incentive package suitable for the situation at hand, and of the type of financing mechanism that can enable stakeholders to pool funds and other resources in a transparent and efficient manner towards the common goal of park development and functioning.
9. Getting institutional design right is critical for park success. Agropark promoters need to attach adequate importance to promoting good institutional practices, such as investing time in coordination and policy dialogue, networking and cooperation. Good institutional design will mean finding workable solutions relating to the provision of clear rules and an enabling environment, and the promotion of transparent, equitable, inclusive, participatory and responsive processes and mechanisms.
10. Equally important is sound management of the agropark, private, public or any combination of the two. This requires successfully implementing a business strategy that focuses on overall competitiveness and profitability, by taking care of on-site infrastructure and facilities, portfolio of support services, park marketing and investment promotion, and the implementation of strategic management considerations pertaining to internalization and networking, green growth, human resources development and innovation strategy. Good management of the park includes strengthening forward, backward, diagonal and innovation-oriented linkages. Synergies among the park stakeholders favour competitiveness and innovation in the agrifood chains served by the park. However, just as important as cooperation among entrepreneurs/tenants is the co-optition (competition plus cooperation) among firms inside and outside the parks.

11. To be sustainable, agroparks have to be profitable, competitive and sound from the business and market perspectives but, beyond this, they should be beneficial – or at least benign – to society and the environment. When successfully run, agroparks can play a key role in the rural-urban economy, providing vital employment and a place for enterprise and innovation to flourish. Unfortunately, they can also be dreary, unfriendly places, that suffer from environmental issues, traffic congestion and pollution, and (un) satisfactory working and living conditions for the workforce. Precisely because of the promises and risks they engender, agroparks need to operationalize their core strategy based on principles of social (*people*) and ecological sustainability (*planet),* and financial and economic viability (*profit*).[48]
    - *People*: inclusion of small-scale actors. Under the right circumstances, industrial parks can become a key ingredient for including farmers and SMEs. They offer an enabling environment that helps small-scale firms to grow, exploit economies of scale through modern technology that facilitates efficiency and gain access to capital, land and a qualified workforce. Dinh *et al.* (2012) have validated this hypothesis in China, where industrial parks have contributed to reducing the shortage of the "missing middle", by helping small-scale park tenants to grow into medium and large firms. Dinh *et al.* (2012) state that Chinese industrial parks have enabled many small- and medium-scale family operations catering to the domestic market to grow into global powerhouses.
    - *Planet*: environmental aspects and greening of agro-industrial processing. Concentrating agricultural and agro-industrial activities in dedicated parks generates environmental impacts that can be seen as two sides of the same coin. On one side, parks may favour the co-location of polluting agro-industries. On the other, the concentration of these activities makes it also possible to strengthen enforcement of environmental requirements, e.g. improving standards and monitoring capacities. For example, park companies can share the cost of calling upon international specialists so that progress is made towards environmentally friendly solutions. By doing so, participating firms can afford the adoption of green technologies that would have been out of reach for individual investors.

      The greening of industrial parks is increasingly becoming a key priority. Environmental values attached to the park project can be woven into the masterplan in multiple ways: green design of infrastructure and facilities, cleaner production (in making green products), pollution prevention, energy efficiency, etc. Developers and tenants can work together to reduce the environmental footprint of the park through green design and joint collaboration to achieve industrial symbiosis, for example by developing a closed-loop biological system that optimizes inputs, processes and the reuse and recycling of surplus products or materials. Accord-

[48] This is often referred to as the triple-P evaluation framework: people, planet and profit.

ingly, M&E protocols can be established to measure key variables, such as energy consumption per unit of production, and treated industrial waste and wastewater. The greening process may present various levels of complexity, ranging from the basic agro-EIP model (characterized by ecologically based husbandry, and the preservation and restoration of land and water) to green-powered agro-EIPs (which use renewable energy, e.g. solar, wind and biomass), and integrated agro-EIPs (encompassing energy cascades, renewable energy and full by-product utilization) (based on Baldwin, Ridgway and Rose-Andersen, 2007).

- *Profit*. Ensuring agro-industrial efficiency, strengthening supply chain linkages and fostering innovation. Agropark operations seek to achieve *efficiency in food, fuel and feed manufacturing*, with a view to adding value to agricultural raw materials. Nevertheless, not all agroparks help build value-added industry: some target import-dependent activities (*maquila*) that perpetuate low-skill activities with low value added. The internal efficiency of the agropark should be paired with *efficiency along the value chain*, notably through the creation of backward linkages as part of an integrated spatial approach, in which an agro-industrial park takes central stage. *Competitiveness gains through innovation* can also generate profits.[49] Agro-industrial parks can act as vehicles for technology transfer, upgrading and innovation (which are essential ingredients for long-term productivity growth) through synergies among tenants, and between tenants and sponsors. Agro-industrial parks encourage inward technology transfer (markedly the adaptation and adoption of known technologies), often channelling foreign expertise (together with capital) into host economies. They can also have a catalytic effect on learning or knowledge spillovers, both in terms of learning from others in the park and from other parks country- and worldwide. To generate these effects, agroparks may follow a twin-track strategy.

  On the one hand, they can act as hubs that catalyse the flow of knowledge and technology between agribusiness companies and knowledge organizations (universities, R&D institutions and technology institutes). For instance, the Bizerta Agrotechnopark in Tunisia combines an industrial estate (150 ha) that is expected to accommodate 170 businesses, and an innovation and knowledge area (45 ha). In the latter are 18 knowledge institutions with 2 300 researchers running demonstration centres, a technology watch unit, an innovation and technology transfer centre and a training centre (Gálvez-Nogales, 2014).

  On the other hand, they can facilitate the creation and growth of innovation-based companies through incubation and spin-off processes (Link and Link, 2009), as appraised in Chapter 6. Academic and research institutions do not have to be necessarily on site (i.e. physically located in the park, although they may have a branch in the park premises),

[49] This process is also the goal of a cluster approach, as seen in Chapter 3.

but they are key components of the park virtual community, as they play a vital role in training park workers and managers, and guiding the research agenda of the park-based agribusiness companies.

12. After sustainability, a reflection on scalability is in order. Favouring seamless upscaling from pilot agropark project to region- or nationwide initiatives is preferable to launching a large-scale programme without "knowing the ropes", testing the institutional capacities and assessing the effectiveness of the policy and regulatory frameworks. The success of a pilot agropark initiative can smooth the way by means of demonstration effects that can overcome political economy constraints to upscale.
13. A final lesson extends an invitation for policy-makers to understand agroparks in a broader context, as part of a package of interventions that address the most binding constraints limiting agricultural production, value addition and trade. Agroparks are not stand-alone entities, but elements of a broader spatial vision, which may embrace various types of spatial planning tools for developing the agribusiness and agro-industry sectors. Hence, parks can be a building block of a wider agrocorridor initiative. They can further support the development of existing or potential agrobased clusters and/or contain an agribusiness incubator. To understand the right combination that works well in a particular context, governments should test a variety of spatial policy instruments before gradually applying them more widely.
    This broader vision further translates into a need to align the park project with sectoral plans, policies and strategies at various levels (from local to central and vice versa). In this exercise, it is always important to consider that parks are not the only instrument available to develop agribusiness, and that they are successful only if certain conditions coexist, as explained earlier in this chapter. Solid feasibility and cost-benefit analysis, together with sound strategies, are the prerequisites to understand whether a park is the best choice among the other alternatives. Policy-makers should not see parks as a shortcut to avoid the constraints facing the agricultural and agribusiness sectors, nor as a panacea to develop agro-industry.

4.8 CASE STUDIES

Case 1 – Designing agroparks in Ethiopia and the Philippines

Prefeasibility and feasibility studies are a critical part of the design of agro-industrial parks, as mentioned in the section on Where to start (p. 153). The content of these studies obviously depends on the specific economic context and overriding objectives of the park promoters, among other factors. However, there are common elements that typically appear in the outline of these analyses. Some insights are offered from ongoing experiences in Ethiopia and the Philippines.

When the Government of Ethiopia become interested in the agropark concept, it asked FAO and UNIDO jointly to develop a feasibility study. The proposed model was that of an integrated agropark linked to a network of rural transformation centres (RTCs), with the double aim of contributing to self-sufficiency in food production and promoting sustainable economic growth. This preparatory work was developed in two phases. The first phase involved a *prefeasibility study* that led to the preparation of a shortlist of potential project sites and product mix, using

a participatory approach and a quick location assessment of the agro-economic potential of the different regions in Ethiopia. The second phase consisted of a *feasibility study* to develop a detailed technical conceptual plan and an in-depth financial plan for the agropark(s) and RTCs. See Table 10 for details. Based on the above, the feasibility study recommended agribusiness development models (contract farming,

TABLE 10
Content of prefeasibility and feasibility studies

PHASE 1. PREFEASIBILITY STUDY	PHASE 2. FEASIBILITY STUDY
▪ Assessment of institutional support from Government of Ethiopia needed at regional and national levels to ensure seamless project implementation. ▪ Review of ongoing development initiatives in the country to build synergy for maximum impact. ▪ Assessment of market potential based on detailed food value chain studies and identification of processed food products that hold market potential (in both domestic and export markets). ▪ Assessment of supply strength to assess the potential feasibility of the park/ RTCs, building on a detailed survey of key production hubs in targeted regions in Ethiopia. ▪ Comprehensive inventory of selected locations in terms of existing businesses and supply infrastructure and estimation of requirements to fill gaps. ▪ Evaluation of available transport and specialized agribusiness infrastructure. ▪ Assessment of the supply of raw materials to the food processing industry. ▪ Estimation of consumer demand for processed foods in the domestic and international markets. ▪ Assessment of the capacity of existing value chain actors that might provide services and technologies.	**A. For agropark(s)** ▪ A project plan (project outlay and proof of concept) report. ▪ Assessment of minimum required facilities and human resources for the park. ▪ Analysis of the political, economic, social and technological factors that would affect the performance of the park, keeping in mind the government's vision, and emerging market opportunities. ▪ Preparation of a conceptual design of the agropark to be scaleable and flexible. ▪ Scale of operation. ▪ Infrastructure assessment. ▪ Requirements of agribusiness infrastructure, such as greenhouses, hydroponics, cold chain, packing houses, cold stores and processing facilities. ▪ Number and size of RTCs to be established in a phased approach. ▪ Basic on-site park infrastructure (buildings, logistic platform, etc.) and utilities (water purification systems, energy) and ancillary services. ▪ Designing and landscaping. ▪ Management arrangements, including the preparation of indicative management structure specifying key responsibilities. ▪ Environmental impact assessment. ▪ Financial plan that details the costs of the project, expected return on investment based on the park and associated RTCs, and support/incentive mechanisms for interested investors (both international and local). ▪ Proposed management system for the park. **B. For RTCS** ▪ Detailed value chain analysis of the crops grown in the area (including cost-benefit analysis for each commodity, production systems structure, agribusiness skills and gaps in farming as a business). ▪ Mapping and assessment of business development services currently existing in the catchment area (services and facilities for post-harvest handling, input procurement, supply and distribution facilities, financing, credit and capital investment products and services, farmer organizations' structure and capacity, and small-scale entrepreneur service providers such as transporters and brokers).

Source: authors' elaboration.

warehouse receipt systems, input-voucher systems, etc.) and proposed infrastructure, facilities and services to be promoted and supported for effective and efficient supply and post-harvest handling.

In the Philippines, the Department of Agriculture through the Philippine Agricultural Development and Commercial Corporation (PADCC) is considering the possibility of setting up an agro-industrial park as a means to develop competitive, modern agrifood value chains that favour the inclusion of small farmers. PADCC, with support from the World Bank, has commissioned a prefeasibility study for the park. The goal of the prefeasibility study is to help determine whether there is sufficient socio-economic, financial and technical justification to undertake the agropark investment. If so, the study should clarify what would be the most technically sound, economically efficient and financially viable design options, backed by an organizational framework based on what the public and private sectors can offer, using PPP arrangements. The prefeasibility study is intended to shed light on:

- the rationale and scope for establishment of the park;
- selection of sites for the park, taking into account production, marketing and logistics flows of agricultural products;
- public policies related to the role of stakeholders, redistribution of gains and costs;
- potential options for organization, management, financing and contractual arrangements (park facilities owned and operated purely private, purely public or PPP);
- an analysis of environmental impacts; and
- methodology applicable for economic and financial analysis and impact assessment of the park project on smallholder farmers.

In both countries, the governments foresee stakeholder consultations to be held during the course of the study, both to favour a co-design process that takes into account the diverse interests and needs of the various stakeholders and to collect and triangulate information.

Table 11 summarizes the questions posed by the Terms of Reference of the studies in Case 1, complemented by tools to collect relevant, factual information. If the park sponsor gives the green light after the findings of the prefeasibility study, the next logical step would be to perform an economic and financial feasibility analysis, using sound technoeconomic and environmental criteria, and "with and without project" scenarios according to the methodology agreed upon in the prefeasibility report. Once undertaken, the financial analysis will inform the decision of potential owners and investors of the agropark, who will be interested in knowing the estimated return on equity/investment, while public authorities will be interested in the economic analysis that reflects the opportunity cost of these inputs to society. Both are important elements in the decision-making process.

Case 2 – Transferring approaches without appropriate adaptation to country context

Park designers should be aware of the risks of extrapolating models from one country to another without tailoring them to suit new environments and sensibilities. This has twice been a stumbling block for China. As a result, the Chinese

TABLE 11
Questions to be resolved by prefeasibility studies, and tools that can be used

Questions	Tools
▪ Rationale for the agropark ▪ Availability of land and its location ▪ Scope of the park in terms of commodities and processing activities (e.g. is the central park facility enough or does it have to be linked to multiple commodity-specific processing facilities in dispersed locations?), services provided ▪ Number and characteristics of tenants – estimated demand ▪ On-park and off-park infrastructure required ▪ Technical design of environmentally friendly solutions ▪ Logistical solutions ▪ Investments and operational costs ▪ Markets to be served and efficiency in serving these markets ▪ Cost-efficiency ▪ Solutions for agropark organization, management and financing ▪ Social and environmental dimensions ▪ Integration of the agropark in the broader, domestic institutional and policy environment	▪ Stakeholder analysis ▪ Demand assessment and consumption patterns for food, fuel and feed products ▪ Value chain mapping and commodity analysis, including the availability of products and raw materials in volumes (relative to proposed park capacity and number of days of operation), followed by a competitiveness analysis ▪ Stocktaking of existing connective and agribusiness infrastructure ▪ Benchmarking with agroprocessing enterprises in operation in the host territory ▪ Logistics system assessment ▪ Initial economic rate of return (ERR) and internal rate of return (IRR) calculations ▪ Market and industry research ▪ Social and environmental assessments ▪ Impact assessment of legal and regulatory frameworks on the agropark ▪ Overview of macrolevel international, regional and national policies and trends that may affect park investments.

Source: authors' elaboration based on Ravensbergen *et al*., 2013.

administration has entered into strategic partnerships with foreign governments to learn from successful international park experiences and test them in its territory. Two such partnerships have been with Singapore (to emulate the ability of its model to attract international companies) and the Netherlands (to learn how to strike a balance between logistical and environmental efficiency).

The Suzhou Future Agriworld Park has piggybacked on the success of the Suzhou Industrial Park, Suzhou New District and the Grand Suzhou area, which have attracted international investment worth US$30 billion. The Suzhou Industrial Park (chronologically the first park) was a landmark joint venture of China and Singapore. In 1994, the Chinese Government and the city state agreed to build an industrial park in the eastern Chinese city of Suzhou to serve as a model for replicating Singapore's capitalist-style efficiency and attractiveness for FDI in mainland China. This park initiative saw the highest level of commitment of the Singapore and Chinese Governments. However, the partnership fell through just five years after it was conceived (Pereira, 2002), with Singapore transferring part of its stake to the Chinese side (central government). This abrupt demise led to much speculation about what went wrong and how feasible a project of this nature was in the first place.

The reasons for this impasse were manifold. Minli (2008) blamed it on lack of consideration of the different working styles and objectives of the parties involved, engendering miscommunication and hesitancy to comply and cooperate. Moreover, the Singapore model was not adapted to suit the prevailing economic climate and

investment patterns in China and the Suzhou region, so that the promoters faced unexpected difficulties when negotiating with foreign investors to recruit into the park. The collaboration also suffered from a lack of alignment between the Chinese Government in Beijing and the Suzhou authorities, to the point that local officials began a rival operation, the Suzhou New District industrial park targeting the same investor profile and riding on the marketing efforts of the pioneer park.

The transfer of the Netherlands model to China also encountered a snag. The first attempt at collaboration between China and the Netherlands was Greenport Shanghai, a joint project developed by the Shanghai Industrial Investment Co., TransForum and the University of Wageningen. The goal of the project was to establish a green agrifood park in Shanghai, exploiting and adopting Netherlands knowledge on circular economy and agropark development. The park was expected to impact positively on food safety, the environment and the well-being of local farmers. However, in 2009, negotiations began to slow down and finally came to a halt during the commercialization phase (van Someren and van Someren-Wang, 2012).

What went wrong? First, the significant cultural differences and lack of alignment of the different visions, goals and selection criteria among the Netherlands and Chinese partners complicated an already delicate situation. Second, while the masterplan of the park was strong from a technical point of view, it was weak from a business and marketing standpoint. With no business case driving it, and plagued by wrong assumptions about market demand, energy prices and waste production, the park project was unsuccessful. When adapting a model for another country, it is crucial to analyse all viable solutions in choosing hardware, software and orgware options that work in a given context. It is important to understand that park models are an "approach", rather than a blueprint that can be copied as is, irrespective of the country in which it is proposed. The process of adaptation to suit the business mentality and sectoral/value chain characteristics in the new host environment is key to success.

Case 3 – Leaving room for course correction in the Kinfra Food Processing Park, Kakkanchery, India

The state of Kerala is home to one of the first agro-industrial parks developed in India – the KINFRA Food Processing Park in Kakkanchery, Malappuram district. This is not surprising since Kerala, a major historical spice trade centre, still accounts for nearly 20 percent of India's food exports. KINFRA – the nodal agency responsible for developing industrial infrastructure in Kerala – initiated the park masterplan in 2000 and soon brought it to execution, managing to have the food park ready for inauguration in September 2003. Rather than having a fully fledged blueprint defining the use of the park area with a predetermined number of plots of varying sizes based on anticipated demands, KINFRA created a basic, dynamic masterplan. It specified: (i) non-allottable areas for common facilities to encourage entrepreneurs to opt for shared infrastructure for cost optimization; and (ii) allottable areas kept open for free allotment to entrepreneurs without restriction on area and based on a first-come-first-served basis. The masterplan identified some key common facilities (a quality assurance laboratory and water effluent treatment facilities) as essential components of the food park.

Since then, the initial plan has been modified to resolve issues that arose unexpectedly during the process of implementation or to capitalize on business opportunities:

- Segregation of 12 ha of land that had been earmarked in 2007 for the creation of a food processing SEZ – the first one specialized in agroprocessing to be established in India. This SEZ was meant for export-oriented units and offers several incentives, such as exemption from import duty on machinery imported (against export commitments), tax advantages and customs formalities completed on-site.
- Realizing that the water supply system had been grossly underdesigned, work took place in 2008 to set up a pumping station at a location about 18 km from the food park to bring water from the nearby Chaliyar River. As a result, the supply capacity increased sevenfold, from 0.50 to 3.5 million litres a day. The management of the park also facilitated the changeover of non-performing units. When five of the initial tenant companies were no longer viable for various reasons, KINFRA helped them to exit by identifying other entrepreneurs that were willing to take over their units.
- Re-scoping of the agrifood business incubation centre. Following advice from experts at the Defence Research and Development Organisation (a national public research organization and technology provider), the scope of the proposed incubation facilities was revised and key technological components were modified. For example, the proposed irradiation centre was replaced by a retort pouch packaging facility for packing ready-to-eat food products. Since regular incubation activity has been slow to pick up (apart from some developmental work in the incubation facility), there have been changes in management and there are ongoing negotiations with an important applicant to relaunch the incubation activities. Finally, hilly areas within the park, excluded from the original allotment plan, were put on the market as undeveloped land at a discounted rate and on the condition that all development costs be borne by the entrepreneurs.

According to the Park Chief Executive Officer, if a "do-over" were actually a possibility, the park would modify its allotment policy from a first-come-first-served allotment of ready-to-use plots to entrepreneurs without restriction of land to a standard design factory model where ready-to-use building space would be provided. Under the latter scheme, only enterprises that could not possibly be accommodated in standard buildings would be encouraged to opt for individual plots. In doing this, the park would have maximized the use of park land in a state where the swift economic development of recent years has put great pressure on land availability and prices. In fact, the unavailability of land is limiting expansion of the park. As a result of the positive response from the entrepreneur community, KINFRA has tried to acquire more land in the adjoining areas to expand its operation, but the University of Calicut (which holds the land) has proved reluctant to part with it.

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Chapter 5

Special economic zones for agro-industry

> *"Special economic zones are demarcated geographic areas contained within a country's national boundaries where the rules of business are different from those that prevail in the national territory. These differential rules principally deal with investment conditions, international trade and customs, taxation, and the regulatory environment; whereby the zone is given a business environment that is intended to be more liberal from a policy perspective and more effective from an administrative perspective than that of the national territory."*
>
> Farole and Akinci, 2011, p. 27

5.1 CONCEPTS AND DEFINITIONS

This chapter focuses on special economic zones (SEZs) as a tool for agro-industrial development. SEZs are policy instruments that aim to attract investment (particularly foreign direct investment [FDI]), create jobs, increase exports, generate hard currency, diversify the economy, act as vehicles for technology upgrading and serve as a pilot for testing new policies and approaches that aim to support a wider reform strategy. They are often, but not always, an instrument of a wider industrial policy.

SEZs are fairly complex policy instruments that encompass a wide diversity of institutional approaches, incentive structures and operational models. Terms and forms included under the SEZ umbrella include free trade zones (FTZs), export processing zones (EPZs), export oriented units (EOUs) as in India, *zonas francas* as in Latin America, free ports, free zones and free economic zones. SEZ status can be granted either to an agglomeration of enterprises or to individual enterprises.

SEZs are not mutually exclusive from industrial parks (see Chapter 4). An SEZ, as a legislative tool, simply affords certain privileges to those that obtain SEZ status. Both industrial parks and SEZs are geographically demarcated areas and often, but not always, have shared premises. They also share the characteristic of horizontal integration of businesses located within the demarcated area. While they may have substantial overlapping purposes, SEZs typically have a strong export focus, while agroparks are often more intimately linked to territorial development strategies. The distinguishing factor that makes an agro-industrial park an SEZ is the legal and regulatory framework governing the fiscal conditions and regulatory administration (particularly customs) of businesses physically located within the park. Clusters differ from both agro-industrial parks and SEZs in that they incorporate a network of vertically integrated supporting industries over a broader geographic area, with an

emphasis on product and service innovation. Agro-industrial clusters can also apply the SEZ policy framework to the network of interrelated businesses.

SEZs have traditionally been thought of as geographically designated, duty-free areas that focus on the industrial assembly of imported components for export. This continues to be the major focus of SEZ activities, although the model has undergone many adaptations to accommodate changing global dynamics, such as regional and international trade agreements, increased integration with domestic and regional economies, and increasingly globalized value chains. Many SEZs today serve agro-industrial investments, either in part or in a dedicated fashion, and many successful SEZs also demonstrate a clustering effect that has fostered specialized skills development, innovation and technological upgrading. Much of the literature on the subject focuses on sector-neutral experience with the SEZ model, with few deep analyses of case studies outside the Asian experience.

Characteristics that make SEZs historically unique from other development models are their export orientation and related regulatory framework, which targets streamlined customs procedures and duty-free import of raw materials and export of finished products. However, the SEZ tool has been adapted in many countries to achieve different development objectives, including those of expanding agro-industry targeted for export, regional and domestic markets (import substitution).

Agro-industrial firms have participated in mixed manufacturing SEZs for decades. However, within the last five years or so, there has been increasing interest in developing agrospecific SEZs or, rather, applying the SEZ model to achieve countries' agricultural and agro-industrial growth strategies. A great deal of innovation is taking place in modifying the SEZ framework to accommodate not only agro-industry but also primary production activities. These nascent initiatives will benefit from the well-documented set of best practices in establishing and managing SEZs, but also require additional considerations specific to agro-industry. Both the broader set of best practices as well as agrospecific considerations are discussed in this chapter.

5.2 HISTORY OF SPECIAL ECONOMIC ZONES

Overview of SEZ use, evolution and impact

SEZs, in some form, have been in existence for centuries. Wong and Chu (1984) suggest that they date back to the Roman Empire, while the World Bank's Foreign Investment Advisory Service (FIAS, 2008) identifies examples along international trade routes and citywide trade zones such as Gibraltar (1704), Singapore (1819), Hong Kong (1848), Hamburg (1888) and Copenhagen (1891). Applying the definition of SEZs for this chapter, however, the most widely acknowledged example of the first modern SEZ was established in 1959 in Shannon, Ireland in the form of an FTZ. India was the first developing country to adopt the approach in 1965 (Stein, 2008).

The growth of SEZs spread regionally, beginning with growth in industrialized countries (predominantly Western Europe) through the 1970s; to East Asia and Latin America in the 1980s, focusing on EPZs; Eastern and Central Europe, the Commonwealth of Independent States (CIS), the Middle East and North Africa in the 1990s; and finally sub-Saharan Africa (SSA) in the 1990s and 2000s (FIAS, 2008). The dramatic growth trajectory experienced in China since its first SEZ in Shenzhen (established in 1979) has inspired many low-income countries to adopt SEZ

models for their own economic development (Farole, 2011). However, as discussed throughout this chapter, the Asian successes are not easily replicated.

A recent World Bank study (Farole and Akinci, 2011) estimated that in 2011 there were approximately 3 000 SEZs in 135 countries. Although widespread, SEZ activity in terms of jobs and export values remains concentrated in fewer than a dozen countries located in Asia and the Pacific (mainly China), Latin America, Central and Eastern Europe and Central Asia (FIAS, 2008). In terms of the number of SEZS, many are single companies licensed individually as free zones (FIAS, 2008). The main activities within these SEZs are light and heavy manufacturing processes such as textiles and clothing in Guatemala and Honduras, electronics and semiconductors in several Asian countries, and motor parts in Mexico and the United States of America, but also service provision such as financial services in the Bahamas, information and communications technology (ICT) in India, and logistics services in Panama. Agroprocessing activities often occur in mixed manufacturing SEZs and are more prevalent in Africa. SEZs exclusively dedicated to agro-industry and agroprocessing are rare, although there is a growing trend in the pursuit of agrospecific SEZs. A list of countries with agroprocessing activities within their SEZs is shown in Table 12.

SEZs began as geographically isolated enclaves with tight government controls of export-oriented regulations and generous incentives packages to attract investment from foreign companies (FIAS, 2008). These early zones were developed and managed exclusively by government entities. The model has evolved substantially over the past 20 years to allow for greater flexibility in terms of:

- geographic designation for SEZs, allowing SEZ permits countrywide and for individual companies;
- prevalence of private sector leadership in zone development, financing and ownership with some private outsourcing of administration duties – the majority (62 percent) of SEZs worldwide are privately owned and operated (FIAS, 2008);
- incentives structures based on competitive factors such as regulatory ease, productive workforce, appropriate infrastructure and supply chain linkages rather than "race to the bottom" tax and labour incentives (Farole, 2011; Woolfrey, 2013);
- greater integration with the domestic economy through contracting arrangements with local firms and linkages with academic and research institutions; and
- greater specialization in industrial estate development tailored to subsector needs and target markets (FIAS, 2008).

Although a widely popular industrial development tool, SEZs have met with only varied success. There is sometimes a reliance on SEZs to circumnavigate poor enabling environments. While SEZs can be used as a catalyst for countrywide policy reform and targeted agro-industrial growth, reliance solely upon SEZs to generate economic growth without addressing other constraints will yield disappointing results (Farole, 2011). Evidence suggests that SEZ success does not necessarily depend upon the attractiveness of the incentives package, but rather upon the broader micro- and macroeconomic and business enabling environments where

SEZs operate (Harrold, Jayawickrama and Bhattasali, 1996; FIAS, 2008; Farole, 2011). With respect to agro-industry, the enabling environment transcends the entire value chain, requiring careful consideration, planning, coordination and targeted action to achieve success.

Typically, SEZs begin to demonstrate momentum five to ten years from inception. In successful zones, this period has been followed by exponential growth, eventually levelling out when it reaches maturity (Farole, 2011). Traditional indicators for judging SEZ success are job creation, and value and volume of exports. SEZs have generally fared well with these indicators (Madani, 1999), but they are limited and do not accurately reflect wider economic and financial impacts. For example, cost-

TABLE 12
Countries with SEZs incorporating agroprocessing and leather activities

Region	Agroprocessing	Leather
Latin America	Peru	
Asia	India	Bangladesh
	Indonesia	India
	Hong Kong SAR	
	Mongolia	
	Philippines	
	Sri Lanka	
Eastern Europe and Central Asia	Bulgaria	
	Kyrgyz Republic	
	Lithuania	
	Poland	
	Serbia	
	Ukraine	
Middle East and North Africa	Egypt	Tunisia
	Kuwait	
	Morocco	
	Turkey	
	United Arab Emirates	
Sub-Saharan Africa	Cameroon	Cameroon
	Ghana	Sierra Leone
	Kenya	Zimbabwe
	Nigeria	
	Malawi	
	Senegal	
	Seychelles	
	South Africa	
	Togo	
	Zimbabwe	

Source: adapted from FIAS, 2008.

benefit analyses of Asian SEZs (China, Indonesia, Malaysia, Republic of Korea and Sri Lanka) point to net positive impacts well beyond the cost (and opportunity cost) of these zones (Jayanthakumaran, 2003). Sinclair (2001), in his evaluation of Asian SEZs, estimated average zone contributions of 0.52 percent towards per capita gross domestic product (GDP) growth rates. Alder, Shao and Zilibotti (2013) estimate that SEZs established in various cities in China generated a 12 percent increase in GDP for each respective city. The glaring exception to successful results in the Asian studies is the Bataan EPZ in the Philippines. Although its job creation performance was positive, its cost-benefit analysis was negative because of high infrastructure costs and subsidized utilities (Warr, 1989). Certainly, not all SEZs worldwide have performed so well, but rigorous evaluations of SEZs outside a few selected Asian countries and government-owned and operated zones are surprisingly rare (FIAS, 2008).

Economists and practitioners also look to the catalytic effect of SEZs to stimulate more dynamic measures of success such as broader business environment reform, diversification, the degree of technology and human capital upgrading, and integration with the domestic economy. China's use of SEZs to pilot the effects of economic liberalization has been central to its remarkable economic success (Ota, 2003; Alder, Shao and Zilibotti, 2013). SEZs, especially if integrated within a broader industrial policy and targeted specific industries, have fostered economic diversification, technological upgrading and backward linkages with the domestic economy (Chandra, 2006; FIAS, 2008). Malaysia, for example, has been able to leapfrog several stages of technological development in the palm oil industry

TABLE 13
Country performance and success indicators of SEZs

	Success indicators						
Country	Job creation	Export growth	Foreign direct investment	Catalyst for policy reform	Diversification	Technical/ human capital upgrades	Integration with domestic economy
China	✓	✓	✓	✓	✓	✓	✓
Malaysia	✓	✓	✓	✓	✓	✓	✓
Philippines	✓	✓	✓	✓	✓	✓	✓
Kenya	✓	✓	✓	unclear	✓	unclear	×
Mauritius	✓	✓	✓	✓	✓	✓	✓
Senegal	✓	×	unclear	×	×	×	×
South Africa	✓	✓	unclear	✓	unclear	unclear	unclear
Tunisia	✓	✓	unclear	unclear	✓	✓	×
Dominican Republic	✓	✓	✓	×	×	unclear	×
Honduras	✓	✓	✓	unclear	unclear	unclear	unclear

Note: ✓ = achieved; × = not achieved
Sources: authors' elaboration; Farole, 2010; Madani, 1999.

through targeted government action at all levels of the value chain to encourage technology adoption (Chandra, 2006). Agro-industrial value chains, because of their integrated and stakeholder inclusive nature, have great potential to create economic multipliers but often encounter significant coordination problems that require coordination among public and private parties to address market failures. Backward linkages are more easily facilitated if the agro-industry reflects a country or region's comparative advantage.

Forms of SEZs

SEZs are often a component of an industrial policy or of agricultural and trade policies, and require a unique legal and regulatory framework. As discussed in the introduction, there are many variations in institutional approaches and operational models for SEZs. A few distinguishing characteristics among the various forms of SEZs are described below and represent evolution from the traditional SEZ model (adapted from FIAS, 2008). In this typology of SEZs, "exclusivity" indicates that only certain types of business activities are permitted within the described forms of SEZs, whether it is export orientation, industry specificity or possibly the achievement of other developmental goals. "Inclusivity" indicates that the forms of SEZ permit a much broader range of business activities.

Location-specific SEZs

- *Free trade zones*. These zones (also known as commercial free zones) are small, geographically demarcated areas focused on trade, logistics and re-export operations services. They are common throughout the world, located around key ports of entry and the preferred model for Middle Eastern and North African countries. Little value addition occurs in these type of zones. Entry and re-export of goods is duty free in the zones.
- *Free ports.* These are typically large demarcated areas encompassing cities and islands such as Hong Kong SAR, Singapore, Iabuan (Malaysia) and Shenzhen (China).
- *Export processing zones.* These zones are geographically demarcated areas that benefit from common infrastructure and regulatory incentives for export-oriented activities. They are usually located close to export gateways such as ports. EPZs are common in Asian countries.

Exclusive SEZs

- *Specialized zones.* These are industrial parks organized around specialized themes such as logistics, science and technology, petrochemical and agroprocessing. Businesses that locate within these zones undertake or supply support services directly to specific business activities.
- *Export processing zones.* Businesses locating within EPZs must export the majority of their products.
- *Single company free zone.* These are individual enterprises that are granted special economic status regardless of location. They benefit from a package of incentives, usually tax benefits. Eligibility requirements may require export orientation, industry specialization or achievement of other development objectives.

TABLE 14
Regional SEZ characteristics in developing countries

Region	Time frame for adoption of SEZs	Approximate number of SEZs	Dominant form of SEZ	Public or private ownership
East and South Asia	1980s	1 100	EPZ	Public and private
Latin America	1980s	540	Hybrid EPZ	Private
Middle East and North Africa	1990s	213	FTZ	Public
Eastern Europe and Central Asia	1990s	443	Hybrid EPZ	Public
Sub-Saharan Africa	1990s and 2000s	114	Single factory free zone	Public and private

Source: FIAS, 2008.

Inclusive SEZs

- *Hybrid export processing zones.* These are recently formed EPZs that designate some portion of the industrial estate to export-oriented enterprises and another portion to all industries, including local enterprises. They are typical of SEZs in Central and Eastern European countries as well as many Latin American countries.
- *Free ports.* Encompassing large, demarcated areas such as cities and islands, free ports permit a wide range of economic activities and a broader set of incentives, representing a more flexible and expansive SEZ model. Access to the local market is encouraged, but taxes are typically applied.

Regional patterns of SEZ development

There are clear regional trends along the lines of adoption time frames, concentration of SEZ activity, dominant forms of SEZs, and public and private ownership models. Table 14 summarizes these characteristics according to region in the developing world.

The traditional EPZ model, adopted first in East and South Asia, has also been widely adopted in other regions, but with mixed success. There are a number of contributing factors for this outcome. Many experts agree that the low-cost, assembly-focused model may have met global economic demands in the 1980s, but liberalized trade regimes and increasingly sophisticated consumer demands require countries and companies to adopt more flexible models and develop more specialized approaches to industrial growth, based on comparative advantage, value-added services and an enabling environment conducive to conducting competitive business.

Latin America, for example, has recently undergone a wave of developing new industrial policies that commonly state the overarching goal of achieving international competitiveness around existing comparative advantages. The policy initiatives discuss the need for infrastructure development, value chain targeting and innovation. There is a strong emphasis on the role of the private sector, a deviation from the policies of the 1980s (Devlin and Moguillansky, 2012). Latin

American SEZs in Central America and the Caribbean are typically characterized as "enclaves" that operate largely independently from the local economy (FIAS, 2008). The new industrial policies in the region may lead to much-needed revisions of the traditional EPZ enclaves to foster greater linkages with the domestic economy. They could also very well foster economic growth in parallel with the mostly private SEZs, begging the question of their relevance.

East Asia, on the other hand, has arguably achieved its success through consistent and progressive government use of industrial policy (Stiglitz *et al*., 2013). However, the competitiveness factors that attract enterprises to East Asia have changed over time. Initially, very low labour costs brought assembly-based manufacturing activities to the region. Now, with rising labour costs, competitiveness factors emphasize location-driven strategies that secure access to regional markets including those of multinational companies such as Caterpillar, L'Oreal and Tesco ([The] Economist, 2014). In China, however, government efforts to support domestic industry are complicating the landscape for foreign companies, forcing them to consider moving their operations elsewhere ([The] Economist, 2014). Once again, these older SEZs find themselves at a crossroads, needing possible revisions to their models.

An excellent example of effective model revision in East Asia is demonstrated by the Philippines case study (discussed in this chapter and in Chapter 7). Since 2000, the country has extended its SEZ legal framework towards fostering sector-specific economic zones, including information technology, tourism, medical tourism and agro-industry (PEZA, 2014). Agro-industry is the most recent sector to be targeted with official guidelines issued in 2006 for SEZ eligibility. This coincides with a policy shift towards applying SEZ status more selectively in an effort to stimulate economic growth in poorer areas of the country (interview with Coté, 2014). The Rocky Mountain Arabica Coffee Company (RMACC) case study described later in this chapter is an example of the types of activities the private sector is pursuing in response to the expansion of the SEZ framework. It illustrates the potential contributions that the SEZ development approach affords towards achieving inclusive agricultural growth objectives through the establishment of strong backward linkages with the supply chain and the provision of infrastructure enabling market access. The case also raises challenges that are unique to agro-industry, which tell a cautionary tale to other countries and investors pursuing similar endeavours, notably access to land for primary production.

Sub-Saharan Africa SEZs have had mixed results, aside from Mauritius, Kenya and Ghana. Various governments are expressing interest in developing agrofocused SEZs as a means to increase value addition and stimulate multiplier effects through backward linkages with producers. However, most of these SEZs remain at the conceptual and feasibility stages and many lack the proper legal framework from the start. Most SSA countries have only recently launched mixed-manufacturing SEZs, which makes them too young to be categorically declared successes or failures. What is clear from the case study on African SEZs is that the region's comparative advantages, poor enabling environment and infrastructure conditions necessitate a slightly different design and orientation of the SEZ model in order to be successful in the African context.

5.3 FRAMEWORK FOR SPECIAL ECONOMIC ZONE MODEL

When to use the SEZ model to foster agro-industrial growth

This section discusses when to use the SEZ model and which forms are most appropriate for agro-industry, common SEZ design factors and key stakeholders throughout the SEZ development and implementation process.

The main benefits of applying an SEZ framework to achieve agro-industrial growth goals are largely the same as for other industrial growth goals, depending on the country context. In other words, SEZs embody streamlined regulatory environments that are simpler and quicker than provided elsewhere in the economy, duty-free imports and/or exports, secure land tenure, dedicated infrastructure, access to specialized services and the potential for clustering effects. However, there are many alternative tools that could be pursued depending on the key constraints within a country context. To assist those policy-makers considering developing SEZs, the World Bank is developing a methodological guide (Farole, Baissac and Gauthier, 2013). In this guide, a series of questions are posed that aim to provide policy options tailored to country contexts. The first question is simply, "Is an SEZ the right instrument for us"? The authors conclude that SEZs may be an appropriate tool if several significant constraints to investment are the main barrier to achieving national economic objectives, and there is little confidence that the government can resolve them through a countrywide campaign. If, after conducting an extensive analysis, the country feels that an SEZ merits further consideration, policy-makers move to the second question, and so forth. However if, for example, the country concludes that the major impediment to growth is merely access to land and quality infrastructure, an alternative solution might be an industrial park that would not require the cumbersome steps of establishing an entirely new legal and regulatory regime.

A country's level of development also factors into why SEZ frameworks might be applied to achieve developmental objectives. For developing countries, SEZs are

BOX 36

Botswana agroprocessing initiatives

Currently on the drawing board in Botswana, the national government and established agribusinesses are contemplating the creation of SEZs to foster agricultural and agro-industrial growth to meet growing domestic, regional and wider market demand in the following areas:

- value addition to wheat and tomato products in northeastern Botswana;
- horticultural production in southeastern Botswana; and
- meat (beef), leather and biomass production in southeastern Botswana.

Applying an SEZ framework to these initiatives aims to reduce transaction costs associated with obtaining government permissions, facilitate investment in specific public goods in specific geographic areas and foster policy reforms to support the development of specific geographies and industries.

Source: interview with Gauthier, 2014.

typically a vehicle to apply policy packages that aim to attract FDI, generate hard currency through export growth, create jobs, diversify the economy and serve as vehicles for technology transfer and technology upgrading. In infrastructure-poor developing countries, SEZs also represent a physical focal point for much-needed infrastructure expansion (FIAS, 2008). As illustrated in Box 36, an SEZ framework is being considered for agricultural and agro-industrial development because of its infrastructure concentration as well as its streamlined regulatory benefits. As with agroparks, promoters of SEZs will seek to provide demand-pull for agricultural production that provides inputs to the processors within an SEZ.

An added benefit to acquiring SEZ status in the Philippines is protection from politicization of projects and graft. As a result of the country context, companies bypass local tax authorities by coordinating with the zone authority's central point of contact ("one-stop-shop") for streamlined tax payments (PEZA, 2007). Such a benefit is country specific and dependent upon the ability of zone authorities to effectively act as "one-stop-shops" (discussed in greater detail in the section on Institutional arrangements on p. 203).

For developed countries, the motivation for applying an SEZ model is varied but tends to focus on the primary objective of enhancing industry competitiveness through lower operational costs and increased trade efficiency. Formal job crea-

BOX 37

China's Going Global strategy and investments in African SEZs

As part of the Chinese Government's "Go Out" or "Going Global" strategy, launched in 1999, collaboration with four SSA countries (Ethiopia, Nigeria, Zambia and Mauritius) was targeted for the establishment of SEZs modelled on China's own successful SEZ initiatives. Chinese-African collaboration has grown significantly in the last few years, fostering strong bilateral trade, which grew from US$10.6 billion in 2000 to US$166 billion in 2011. Efforts to strengthen the bilateral trade relationship have made China the top trade partner with the region. Although exports from Africa to China are dominated by mineral extraction, China is encouraging its companies to seek new markets and become globally competitive. Agro-industry is certainly on the radar, as are other manufacturing activities. However, early indications point to a bias towards mineral extraction, as in Zambia; and importation of Chinese products on a duty-free basis, as in the Chinese-operated SEZ in Sierra Leone.

The development of SEZs by China is said to create wins for both parties (China and the host country), by meeting the following objectives:

- increasing demand for Chinese machinery and equipment and post-sales product support;
- avoiding trade barriers to third country markets;
- assisting with China's efforts to expand Chinese companies, particularly small and medium enterprises (SMEs); and
- transferring knowledge of China's successful economic model overseas.

Sources: Africa Research Institute, 2012; World Bank, 2011a.

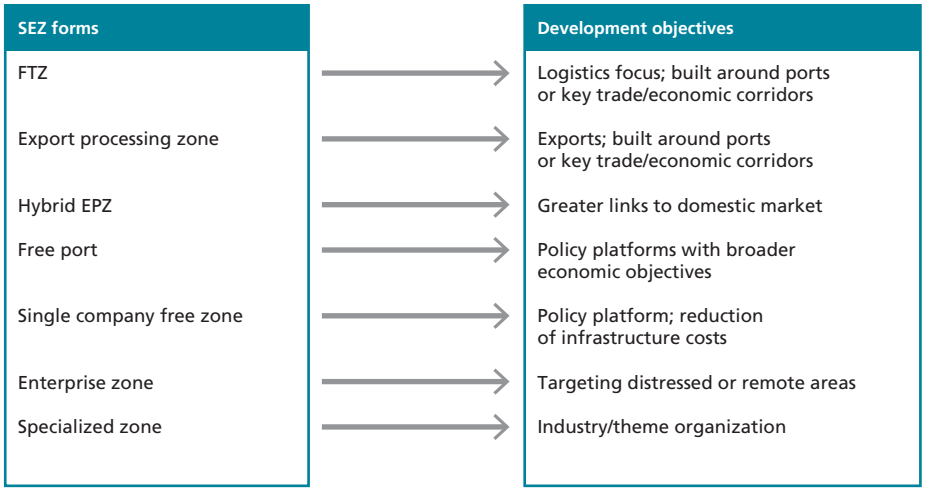
tion tends to be the driving rationale for the development of enterprise zones in economically distressed areas (FIAS, 2008).

There are also a few examples where SEZs have been developed to foster closer ties with partner countries such as Chinese and Indian investments in African SEZs (see Box 37).

The significant variation in SEZ forms makes it apparent that not all are appropriate for agro-industrial development. Agro-industry requires strong supply chain linkages with proximate location to raw materials that are seasonal, perishable and variable (Austin, 1992). Given the perishable and largely rural nature of agro-industrial supply chains, it is beneficial to include production, processing and related service businesses in the SEZ framework to take full advantage of value chain integration. Therefore, SEZ forms best suited to achieving agro-industrial growth objectives are those that encompass larger footprints such as free ports and enterprise zones, or those that permit a sectoral focus such as single company free zones and specialized zones (Figure 17).

Some experts suggest a minimum size of 1 000 ha for agrofocused zones (interview with Gauthier, 2014). These forms have two key advantages over the others: (i) they permit greater forward and backward linkages to the domestic economy; and (ii) they facilitate a focus on sector-specific development goals that requires specialized legal and regulatory frameworks, specialized infrastructure designs and access to specialized services such as finance, certification and logistics. However, experts warn against the application of single company free zone regimes, particularly for countries that have not yet developed reliable and streamlined zone authority regulatory procedures (see Box 38 for discussion).

FIGURE 17
SEZ forms and development objectives



Source: adapted from FIAS, 2008.

Selection of one of the four types of zones best suited to achieving agro-industrial growth objectives (free ports, enterprise zones, single company free zones and specialized zones) is thus dependent on the characteristics of the country, agriculture sector, labour availability, land availability, capacity of the zone authority and development objectives. An emphasis on exported agricultural commodities in an infrastructure-poor country may point towards a free port, enterprise zone or specialized zone model that would facilitate the construction of concentrated infrastructure and permit the creation of shared facilities such as cold storage, warehousing and drying facilities. For example, Monga (2011) argues that specialized, cluster-based industrial parks focused on industries with comparative advantage are the most appropriate SEZ model for the African context, given the region's high factor costs and high transaction costs. Evidence suggests that (agri)businesses demonstrating comparative advantage are able to "make good use of low-skilled labour, are competitive, and quickly establish effective backwards linkages with the

BOX 38

Caution against use of single company free zones regime

Single company free zones became popular in the 1980s and continue to be a popular form of SEZs today. These regimes can be a policy tool to promote exports by extending customs benefits for imports and exports to companies located outside industrial zones. They are much less costly to implement because of limited investments in shared infrastructure, but generally do not benefit from other typical advantages of SEZs, and attractive tax breaks can be used for political purposes. Farole, Baissac and Gauthier (2013) conclude that single factory regimes can be appropriate strategies for countries focused on adding value to natural resources, but require good national infrastructure, a competitive business environment, efficient real estate markets and trade preferences for key markets.

The geographic dispersion of single company zones is challenging for customs authorities to manage, often requiring effective customs regulators to become intrusive in business operations, which leads to inefficiencies and higher transaction costs. Single company zone regimes provide no incentive to co-locate, thereby preventing economies of scale through shared public infrastructure and the provision of both public and private services. Ineffective customs regulators also lead to greater "leakage" out of the zones, compounding the issue of foregone losses of government revenues.

There are a few circumstances where single company SEZs have been successful, namely in Mauritius where its island geography may have been a contributing factor to success. Both single company and agglomeration SEZs coexist in the Philippines, and their success is largely driven by the effectiveness of the zone authority to regulate and provide services to several SEZs – now over 300 nationwide.

Failures of single company SEZ regimes are more common, including the near 100 single company zones in Egypt and the experience in Senegal with "point franc", closely associated with the SEZ concept.

Sources: Farole, Baissac and Gauthier, 2013, and Interviews with experts.

rest of the domestic economy", thereby reducing factor costs (Monga, 2011, p. 7). Clustering of such businesses reduces transaction costs by achieving economies of scale, knowledge spillovers, and forward and backward linkages (Monga, 2011).

Again, it is noted that the SEZ model can and should be applied within a broader (and coordinated) set of policy reform, agricultural and industrial development frameworks. The establishment of an SEZ alone cannot address all constraints to economic growth in a given economy. With agro-industry in particular, policy-makers need to evaluate carefully the comparative advantage in agroprocessing activities as well as ensure strong linkages to market demand. Furthermore, the integrated nature of agricultural value chains requires policy-makers to take a value chain approach to improving the competitiveness of these chains. Agro-industrial SEZs should not be established in isolation from other supply chain competitiveness factors. A close examination of strengths and weaknesses at each link of the value chain is advised, as the competitiveness of the zone is inextricably linked to the strength of local value chains.

Common design factors

Most SEZs have policy, institutional and physical dimensions. The delineation of a geographic area serves as the basis for applying the policy, institutional and infrastructure components. Unique to agro-industrial activities, agrofocused SEZs require additional considerations with respect to policy and physical factors as well as access to strong supply chains. Note, however, that agro-industrial firms have long been operating within mixed sector SEZs that have not, necessarily, provided or required any unique treatment.

Policy framework

First and foremost, a clear and transparent legal and regulatory framework establishes the "rules of the game" for all stakeholders and states project goals. This framework typically includes:

BOX 39

Factors to consider when evaluating comparative advantages of agro-industry

- Market demand
- Market access
- Cost competitiveness *vis-à-vis* competitors
- Economies of scale (volume)
- Product characteristics such as quality, uniqueness (taste profile, certification that meets a niche)
- Seasonality and ability to meet demand
- Qualified labour
- Coordination of supply chain

Source: author's elaboration.

- permissions for the types of businesses and activities that can benefit from SEZ incentives, including permissions for the domestic sector;
- institutional arrangements (both public and private) describing the rights, responsibilities and obligations for ownership, financing, management and regulation of the SEZ;
- details of the incentive package, which commonly includes import and/or export duty exemptions; streamlined customs procedures; foreign exchange policies; expedited procedures to obtain business licences, visas and work permits; and income tax incentives; and
- zone designation criteria including physical development standards and guidelines for new zone development (FIAS, 2008; Farole, 2010, 2011).

BOX 40

Fiscal incentive packages: a note to policy-makers

The fiscal incentive package most often offered to SEZ businesses includes a combination of "corporate income tax reductions or holidays, exemptions from most indirect and local taxes, unrestricted repatriation of capital and profits, and unrestricted management of foreign exchange earnings" (FIAS, 2008, p. 48). Some people believe that these incentives lead to a race to the bottom. However, they have become part of the standard package for attracting investment through the SEZ model and, therefore, necessary.

A more important consideration is how the fiscal incentive package for SEZ businesses compares with the fiscal policies applied to the rest of the national economy. Madani (1999) and FIAS (2008) find fiscal incentives to be distortionary to the domestic economy and non-competitive because of the growing similarity of fiscal incentives for all SEZs around the world. Madani (1999) argues for harmonizing tax and fiscal regulations among SEZ and non-SEZ firms to reduce distortions to the domestic economy and stimulate greater economic growth as a result of policy reforms. Particularly for single factor SEZ schemes, companies may decide to "opt in" or "opt out" based on these incentives – resulting in no new investment from these firms and creating a net loss to the economy by reducing tax revenues (FIAS, 2008). Similarly, the same argument holds true for other policy reforms initiated for SEZs but which could have a much wider economic impact if applied to the broader economy, such as expedited customs clearance and fast-track permissions.

Globally, FIAS (2008) notes a move away from pure fiscal incentives to differentiation of SEZs by investment climate and industry-specific value-added services. Of course, the traditional competitiveness factors of market access, skilled labour pools and low factor costs remain part of businesses' primary investment considerations.

Investors select location based on a number of factors. Fiscal incentives should reflect international norms, but anything beyond these norms is unnecessary and can even be harmful to the domestic economy.

Refer to Box 45 for guidance on key policy considerations to develop fiscally positive tax regimes.

These four policy components are common to all SEZs. Labour and environmental policies are also critical to SEZ success and long-term sustainability but are not always unique to, or explicit in, SEZ policy frameworks.

In additional to the standard policies associated with most SEZs worldwide, there are a number of policy considerations specific to agro-industry. As there are not many long-standing, tested examples of agrofocused SEZs, there is no authoritative body of "best practices" that can be derived. Rather, the following are considerations for policy-makers as they embark upon extending the SEZ framework to accommodate agricultural and agro-industrial enterprises.

Incentivize domestic sourcing of raw material. A core assumption about SEZs that target agro-industrial and agricultural value-added investment is that the value-added operations will source most of their raw materials domestically and/or regionally. This fairly unique aspect of agro-industry (versus assembly manufacturing) necessitates a policy framework that encourages (market-based) domestic sourcing of raw material and strong supply chain linkages. Therefore, the policy regime must, at a minimum, explicitly allow for duty-free access to such materials into SEZs and/or directly include production enterprises in the SEZ framework. The Filipino coffee case study (in section 5.5) illustrates the latter mechanism to encourage backward linkages by extending SEZ benefits to suppliers, also called "constructive exports". The zone authority can play a facilitation role in connecting SEZ enterprises with local suppliers.

SEZs are often left to perform on their own with no additional state programmes or support for domestic integration (Monga, 2011). However, successful examples of fostering backward linkages indicate the high value of strategic government action. For example, strategic incentives offered by the Republic of Korea raised domestic supply of raw materials and intermediate goods from 3.3 percent in 1971 to 52 percent in 1979, creating positive spillovers and greater value added to the country (Farole and Akinci, 2011).

It should also be noted that raw materials for agroprocessing are frequently imported to address a number of factors, including occasional domestic shortfalls in production, cost competitiveness of products, expanding scale of operations, and extending the season. In some contexts, products such as specialized packaging cannot be competitively produced locally and must be imported. This phenomenon can be a disappointment to host governments, but can also be seen as an opportunity for domestic enterprise growth. Resident companies need to be permitted to import these inputs, as they are often core to their business model, operational efficiency and profitability.

Improve primary production through targeted efforts. Agro-industries need their supply of raw materials to be of consistent quality, adequate quantity and cost effective. Reliable supply requires strong relationships with primary producers, clearly defined product specifications, quality-differentiated price incentives and enforceable contractual arrangements. This assumes that producers apply the right technology to primary production, including farm management practices, agricultural inputs, post-harvest handling practices and, in regions dominated by smallholder farmers, work collaboratively through producer organizations. Furthermore, on-farm investment (and often financing) are required for the purchase of inputs, labour and other necessary implements. Ensuring that all of these conditions are in place is

often challenging, particularly in developing countries characterized by geographically dispersed and numerous farmers.

Agroprocessors in developing countries often complain about the challenges of accessing adequate raw materials. Some (predominantly larger operations) are able to work effectively with agricultural producers to address these weaknesses through farmer training programmes, credit in kind, and win-win purchasing contracts. Many, however, find the extra effort to be too costly and time consuming, causing them to operate below capacity and/or invest directly in production operations to increase the reliability of the raw material supply.

Targeted, public-sponsored efforts are needed to address supply chain weaknesses that will further hone the competitiveness of agrofocused SEZs. Such efforts may include training in production techniques, improving access to input and equipment technologies through strengthening agrodealer networks, improving access to finance for on-farm investments and working capital, and training in producer group organization and improved management.

Allow unrestricted sales to domestic and regional markets. Increasingly, the SEZ platform is being adopted and tailored to achieve various developmental objectives aside from increasing exports. One such modification is the shift from traditional export orientation towards targeting domestic and regional markets. This trend is emerging in response to the growing urban middle-class of developing countries.

Agricultural products (both raw and processed) are typically burdened with a limited shelf-life, low margins and relatively low value. These characteristics become even more pronounced in developing countries with poor road and power infrastructure and limited cold chains. Therefore, the most accessible markets for most agricultural products are the domestic or regional markets. Local and regional markets may also be important as secondary markets for unused inputs or by-products. Exports of agricultural products are limited to high-value products or highly traded commodities.

Some countries have relaxed their export quotas to permit sales to the domestic economy. For example, the Philippines' guidelines for agro-economic zones (PEZA Resolution No. 07-232) make the following activities eligible for SEZ status: import-substituting production and processing of agricultural crops, and the production of biotechnology products to be used as agricultural inputs. Note that this does not permit all agricultural and agroprocessing activities to obtain SEZ benefits, but rather a subset of prioritized activities. Countries can craft laws and regulations to suit their developmental priorities, but also to respond to market dynamics and business needs.

Streamline processes to secure land tenure. The topic of land emerges not only for greenfield industrial site development, but also for agricultural land to source raw materials for agroprocessing. Land-use planning efforts need to incorporate the zone's proximity to the raw material supply whereby zone planning authorities may need to facilitate access to agricultural land and/or outgrowers, whether or not production activities are directly granted SEZ status. Land acquisition and leasing processes can be extremely cumbersome in developing countries that have not yet established clear land tenure rights or where there are multiple levels of ownership and approvals, such as in customary patterns in many African countries (Farole, 2011; Monga, 2011; MCC, 2012). There may also be foreign ownership restrictions associated with agricultural land.

BOX 41

International trade law compliance factors for SEZs

To bring SEZs in conformity with international law, host states have begun to redirect their investment incentives from direct taxes to the types of indirect taxes that may be exempted.

SEZ incentive regimes must be designed to comply with international law, specifically the Kyoto Convention negotiated under the auspices of the World Customs Organization (WCO), the World Trade Organization (WTO) Agreement on Subsidies and Countervailing Measures (ASCM) and the WTO General Agreement on Trade in Services (GATS). With these three legal documents and subsequent WTO Dispute Settlement Body decisions and opinions, the following points give some guidance on permissible tax and subsidy measures.

Prohibited measures

- Aggressive subsidies that cause adverse effects on other member states (e.g. subsidy for a competitive product).
- Subsidies that are conditional on export performance.
- Disincentives for zone products that are imported to the domestic economy (duties on imported goods may be levied but not taxes on zone value added).
- Discriminatory practices in the admittance procedure of zone investor candidates, such as the systematic and biased licensing in favour of firms that are known as exporters.
- SEZ services: limitations on the number of services suppliers, value of services sector transactions or assets, or total quantity of services output.
- Export subsidies in transport and freight, including taxes and preferential customs processing charges.

Permissible measures

- Relief of value added tax (VAT) or remission or drawback of import charges on goods incorporated into an export product.
- Repackaging, preshipment preparations, sorting and grading, storage and shipping may be exempted from duties and taxes.
- Lower stamp tax on products consumed within the zone.
- Cuts in indirect taxes for services provided in the zone (e.g. telecommunications, power and water).
- All investors, regardless of their nationality, are granted the same incentives as regards services investments.
- More favourable treatment than that accorded to similar suppliers in any other country.

Note that least developed countries (LDCs) with a per capita of less than US$1 000 are exempt from many of these export subsidy provisions.

Sources: interview with Gauthier, 2014; Pettersson, 2003.

SEZ policy and institutional frameworks should, at the very minimum, require zone authorities to coordinate with land management entities to streamline land acquisition and leasing procedures; and with agricultural bodies to create model contract farming arrangements to facilitate investment and, ultimately, the success of agro-industries. Similarly, central authorities and subnational administrations need to coordinate objectives and procedures to assure seamless access to land. Ideally, land or raw material access becomes part of the services provided by the zone authority's one-stop-shop.

Furthermore, zone development and related agricultural production can trigger involuntary resettlement issues, which are concerns for foreign investors and their shareholders. Fortunately, best practices in land governance and resettlement planning are available to guide policies in these areas (IFC, 2002; World Bank, 2004; FAO, 2012).

Safeguard national food security concerns. Understandably, there are sensitivities around national food security concerns with respect to food exports, particularly in countries or regions that have faced food shortages in the past. There is growing interest from foreign investors in primary production and processing of food staples, primarily for export to the investors' host country. For example, Persian Gulf investors are targeting wheat and maize in the Sudan, sugar and rice in Ethiopia and other crops and livestock in other parts of Africa (COMCEC, 2013). Some of these may be developed within an "economic zone" framework. In these cases, there may be a need for host governments to build in safeguards to prohibit export during domestic food shortages, require some portion of production to be sold domestically, or require a portion to be acquired by the government to establish national reserves. Building in adequate safeguards can reduce not only the political sensitivities around such investments, but also help the country to mitigate weather, disease or pest risk. But such arrangements can also introduce an additional element of uncertainty for investors.

Customize regulatory policies and procedures for the import of agricultural and agro-industrial inputs. Technology upgrading in the agricultural and agro-industrial sectors often means, at least initially, importing improved technologies, some of which may be biological materials that require specialized and expedited handling (e.g. seeds, vaccines, pest treatments, seed coatings and various additives). Such technologies may not yet have been registered through the customs and line ministries and therefore could get caught up in bureaucratic red tape or, worse, not be permitted to enter the country at all. There is a need for zone authorities to work with the private sector to establish regulatory protocols for the importation of such specialized materials.

Standardize environmental policies and incentivize by-product utilization. All industrial sites trigger environmental issues, including pollution control, water use and compliance with sanitary and phytosanitary standards. Compliance with environmental standards is weak in many SEZs, particularly in Africa (Farole, 2011). Efforts to improve capacity to meet environmental standards are not only necessary to meet increasingly rigorous customer preferences, but also to capitalize on the "sustainable sourcing" movement within global supply chains (UNCTAD, 2013).

Agro-industrial processes are unique in that they typically disaggregate raw material rather than aggregate several raw materials as in other manufacturing

procedures. The disaggregation of raw material produces by-products that often have other productive uses such as animal feed, fuel/biogas, fertilizer or other industrial uses (Austin, 1992). Agribusinesses often include the production and sale of by-products in their business plans. Alternative uses for agro-industrial by-products should be encouraged since they reduce the amount of waste to be disposed of and/or treated. Encouraging such activities requires provisions within the legal framework that permits sales of by-products in local markets (e.g. biofuel and animal feed).

Agro-industries are also some of the greatest industrial users of water, raising issues of water quality, user rights, sustainable usage and wastewater treatment. Establishing norms and enforcing compliance with standards require coordination with environmental ministries that are notoriously weak in developing countries.

End markets for food products often require certification that sanitary and phytosanitary standards have been met. These require careful control procedures and often specialized infrastructure and equipment. Some certification entities lie within the government, while there is an increasing trend for fee-based private service providers. In whatever way these certification and control services are provided, they should be co-located within the SEZ to minimize transaction costs and increase the integrity of product quality.

Finally, increasingly volatile rainfall and temperatures caused by climate change present unique challenges for agro-industrial supply chains. Mitigating these risks is an important business consideration and may require policy interventions by governments to reduce risk impacts, particularly at the level of production. Devlin and Moguillansky (2012) argue that climate change can also be perceived as an opportunity for creating new products or establishing a "sustainable" niche in the marketplace.

Labour conditions. No discussion of SEZs would be complete without addressing labour issues. The majority (60 to 70 percent) of the global SEZ labour force are women, concentrated in assembly-oriented light manufacturing (FIAS, 2008). This dynamic has raised concerns over women's rights in some countries as well as "sweatshop" (health and safety) working conditions. However, evidence suggests that labour wages and standards are generally higher within SEZs than they are outside. This trend is especially pronounced in privately run SEZs, with most poor labour conditions occurring within state-run SEZs (FIAS, 2008). There is a trend towards compliance with the 1998 International Labour Organization Declaration on Fundamental Principles and Rights at Work (FIAS, 2008; Farole, 2011; Monga, 2011).

Institutional arrangements

Institutional arrangements for SEZ creation and management are critical to zone success. Three elements that have great influence in institutional effectiveness are:

- establishing clear and balanced institutional structures from the outset that empower the zone authority with sufficient autonomy and authority;
- effective zone management that adopts a customer and results orientation; and
- ensuring financial planning and financing are undertaken in partnership with the private sector.

These three institutional features are discussed in greater detail below. Institutional arrangements are further discussed in Chapter 8.

Clear and balanced institutional structures. There are clear roles and responsibilities for zone development planning, promotion, financing, design, regulation, management and administration. In recent years, countries have moved from a state-dominated model with one government entity responsible for development, operation and regulation, to a model that leverages the expertise and efficiency of the private sector. The FIAS report (2008, p. 20) states: "With the entry of the private sector into zone development, most countries have either set up specialized public sector zone development and management agencies [or corporations], or increasingly divested the physical project development function to the private sector, and transformed their zone authorities into purely regulatory, planning, and promotional bodies". A variety of institutional structures exist, as demonstrated in Box 42. Most important, the institutional structure should adhere to the guiding principles of autonomy, authority and inclusivity. Moreover, to avoid conflicts of interest, regulatory roles of owner, developer and operator should be separated as far as possible (Farole and Kweka, 2011).

Effective zone management. Good professional SEZ management is an important factor in zone success, both for the management of the SEZ development process and the ongoing SEZ operation once established. Key factors influencing management effectiveness in both instances are institutional structure, institutional capacity and responsiveness, and cost-effectiveness. Again, the delineation of roles and responsibilities for the major functions of SEZ management should be clearly outlined in the policy framework. Growing private sector participation in zone development and designation of zone authorities as regulators, planners and promotional bodies have increased institutional efficiency and reduced conflicts of interest (FIAS, 2008). For example, empirical evidence from India's 40 years of SEZ experience illustrates the positive economic gains that switching from a tightly controlled, government-run SEZ regime to a privately led EOU regime can bring to an economy, whereby EOUs make up more than 8 percent of exports as compared with 2–3 percent of SEZs (Cheesman, 2012).

The regulatory function is also vital, since it sets the pace for the business efficiency that directly influences the competitiveness of enterprises within SEZs. If poorly managed, company operations can be impeded by lengthy and cumbersome bureaucratic processes, adding days and expenses that erode profit margins (see Senegal example in Box 43). As the Operations Manager for the First Step SEZ in Sierra Leone attests (interview with Grudda, 2014): "In order to obtain duty-free status for exports, every shipment requires its own document signed by various officials, few of whom are regularly in their offices". Adopting a customer and results orientation is critical. Expediting permits and authorizations can be facilitated by housing all authorizations within the zone management body (a "one-stop-shop") or establishing offices in each SEZ (FIAS, 2008). Establishing one-stop-shops for all regulatory functions (e.g. business start-up registration, land acquisition, construction and labour permits, and customs approvals) is considered best practice if done effectively but, again, requires a certain degree of authority over staff across various agencies. Regulatory functions should be simpler and faster than in the rest of the country. To enforce their authority further, zone authorities can develop

BOX 42

Institutional structures for SEZ management and guiding principles

Separation of regulatory roles

Poor practice. Lesotho's public zone authority is responsible not only for the development of industrial parks, but also acts as the promoter, regulator and administrator for the provision of licences, land and factory shells. Such concentration of roles in the public entity has resulted in shortages of industrial facilities. The regulator is not independent from individual zones, which raises potential conflicts of interest, as well as crowding out private investment in factory shells customized to their business needs.

Good practice. The Ghana Free Zones Board (GFZB) is responsible for planning, regulation and promotion of free zones and packaging of development sites for leasing to private developers, but is restricted from direct involvement in zone development or management. These functions are clearly separate, which keeps GFZB independent from individual zones so that it may effectively perform its duties.

Instilling authority in the zone administrator

Poor practice. The United Republic of Tanzania's Export Processing Zone Authority (EPZA) is an independent agency that reports directly to the Ministry of Industry, Trade, and Marketing (MITM). Although it operates as a unique and autonomous agency, its ties with MITM undermine its authority to coordinate with other ministries within the government.

Good practice. Given the need for regulators to be granted sufficient authority to coordinate across agencies and obtain expedient approvals, reporting to a higher level of government such as the Prime Minister's Office or the Presidency, or to a central ministry such as the Ministry of Finance is a more effective reporting arrangement. For example, the SEZ administrators in the Dominican Republic, Kenya and Senegal report directly to the President.

Inclusivity of board composition

Poor practice. The United Republic of Tanzania's EPZA board is comprised predominantly of government officials, accounting for 9 of the 12 members. Such a board composition minimizes the dialogue and meaningful contribution that could emerge from the private sector, and relies on leadership that may lack the capacity to understand investor and operator requirements.

Good practice. Ghana's nine-person GFZB is comprised of four members from the private sector. Ideally, the private sector should comprise the majority (or at least a significant number) of board members as well as interministerial representation. Most boards have fewer than 13 members, although there is the possibility of having non-voting members as well, which fosters formal links with collaborating organizations. At least two members of the GFZB board must be women, an important consideration, particularly for the agriculture sector.

Source: Farole and Kweka, 2011.

memoranda of understanding with collaborating agencies to establish clear lines of reporting and delegation of staff (Farole and Kweka, 2011). Regulators may also reduce time and costs through automating and streamlining forms and authorization procedures (FIAS, 2008).

Regulatory bodies require secure and adequate funding, and autonomy from political pressures (FIAS, 2008). There are a few lessons for achieving these goals through institutional arrangements. One is to establish zone authorities in the form of corporate entities in order to avoid civil service restrictions such as recruitment, hiring, firing, staff compensation, procurement procedures and budget management (Farole and Kweka, 2011). Another is to link some portion of the annual operating budget to SEZ performance through dedicating a portion of tax revenues from zone businesses to the zone authority. Policy-makers should also weigh the benefits and drawbacks of subsidizing utilities, land and building leases and sales. SEZs that do subsidize such services often operate at a loss, diverting scarce resources and jeopardizing long-term maintenance of the infrastructure (FIAS, 2008). Subsidizing utilities also has the perverse effect of overconsumption, thereby exacerbating the drain on national resources (Madani, 1999). However, the cost and quality of utilities feature as the number one criteria for selecting an investment location for firms operating in African SEZs (Farole, 2011). This preference may reflect more the importance of dependencies and risk associated with availability of power, water and ICT services rather than purely cost. The dynamic probably differs by country and requires careful consideration.

BOX 43
Senegal's SEZ experience

Senegal created the Dakar Free Zone (in the form of an EPZ) in 1974, but had to terminate the project in 1999 because of poor performance, largely attributed to poor management and restrictive investment obligations. At the time of closure, 14 enterprises were active in the zone. Issues included:

- cumbersome and lengthy procedures to secure licences, permits and customs clearance;
- highly restrictive obligations imposed on potential investors, including employment of at least 150 people per enterprise and high minimum investment requirements;
- rigid and constraining labour regulations; and
- elevated cost of labour, energy, water and communications.

Today, the majority of Senegal's 300 SEZ firms operate as single factory zones with a minimum export requirement of 80 percent of their activities. Most of these exports are destined for the European Union (EU). A slight majority of firms are locally owned (as of 2009), with foreign ownership dominated by EU countries. The companies are invested in various economic activities, including agroprocessing, textiles and clothing. The International Labour Organization (ILO) has made note of issues with labour working conditions in these facilities.

Sources: Cling and Letilly, 2001; FIAS, 2008; Farole, 2011.

Shared financial planning and financing. Financial planning is an important task that is increasingly undertaken in partnership with the private sector during the zone promotion and design phase. Investment in greenfield zone development, particularly in infrastructure-poor developing countries, is very expensive and often weighs heavily on financially stressed national budgets. Infrastructure investments of agro-industries are often large capital expenditures that, because of their cost and customization, require a long-term view. Public-private partnerships (PPPs) are increasingly being used for financing and development of new zones, with several partnership variations. The FIAS report (2008) catalogued the following variations of PPPs for SEZs:

- Public provision of off-site infrastructure and facilities (utilities connections, roads) as an incentive for private funding of on-site infrastructure and facilities.
- Assembly of land parcels with secure title and development rights by the government for lease to private zone development groups, development of better land-use/ownership laws and regulations and adoption of enforceable zoning and land-use plans.
- Build-operate-transfer and build-own-operate approaches to on-site and off-site zone infrastructure and facilities, with government guarantees and/or financial support.
- Contracting private management for government-owned zones or lease of government zone assets by a private operator.
- Equity-shifting arrangements whereby a private contract manager of a government zone can exercise a purchase option once predefined performance levels have been reached.

PPP arrangements are able to raise much-needed investment capital and free up public funding that can be used in a more targeted and efficient manner. Privately owned and operated SEZs have proved to be more cost effective, market oriented and profitable than publicly run SEZs, supporting the consensus that they should be encouraged (FIAS, 2008; Monga, 2011; Madani, 1999). However, private SEZs tend to attract "higher-end" activities that can command higher leasing prices (FIAS, 2008). As discussed in the Africa case study, higher-end activities may not conform to a country's comparative advantage. Establishing clear objectives for zonal development will help to guide PPP arrangements in a manner that will expand nascent agroprocessing industries while also preserving cost effectiveness. Both private zone development and PPPs require explicit clauses in the policy framework.

Physical features

Footprint. Agro-industry often requires a larger footprint than non-agricultural industry, given the geographic dispersion of production, consolidation and other services supporting the value-addition process. As mentioned, Gauthier (interview, 2014) recommends a minimum size of 1 000 ha for agrofocused zones in order to justify investments in capital equipment, achieve economies of scale and acceptable returns, have the inclusiveness of backward and forward linked businesses, and achieve greater impact. However, there are many examples of agro-industrial, single factor SEZs that are much smaller in size. Policy-makers need to identify the best approach to achieve results.

Location and external infrastructure. The success of SEZs, regardless of industry focus, depends greatly on their physical design and location (FIAS, 2008). Considering the importance of forward and backward linkages to agro-industry and the customization required for processing of perishable goods, these factors carry even more weight for agro-industrial SEZ success. Since market access is an important decision-making factor for enterprises. SEZs need to be able to access ports or transfer points (e.g. airports, seaports, border crossings) easily to get their products to market quickly. This requires either location of SEZs in close proximity to transfer points and/or well-developed transportation corridors to access these points. Agro-industry also needs access to raw materials that are often produced over many hectares. Access to consolidation points for these raw materials and, in some cases, relevant infrastructure, is also required. Ensuring adequate infrastructure connectivity (e.g. roads, electricity, water and ICT) for these forward and backward linkages critical to agro-industrial success is often the financial burden of the state. Poorly developed infrastructure external to SEZs adds transaction costs to enterprises, which reduces SEZ attractiveness to investors and/or renders them uncompetitive. For example, First Step SEZ in Sierra Leone got off to a problematic start because of issues with unreliable power and poor road access to raw materials (see Box 44).

BOX 44

Costly power deters investors from Sierra Leone's First Step SEZ

Established in 2009 through a stand-alone agreement with the Government, the First Step Economic Opportunity Zone (or SEZ) was granted 22 ha of property (on a 99-year lease, rent free) located 21 km from the port on the main highway, just outside Freetown. First Step is the owner and operator of the SEZ. The Government provided road access, as well as investment incentives including perpetual duty exemption, three years' corporate tax breaks and on-site customs processing expediting, even though the latter has never materialized. First Step, a corporate subsidiary of World Hope International, launched its operations in 2011 with co-investment in its first (anchor) tenant, Africa Felix Juice LLP.

First Step and the anchor tenant invested their own private funds in the infrastructure, including securing potable water through drilling two on-site wells that tap into underground aquifers, and power sources. Weaknesses in the national power grid have prevented investment in a substation to deliver power to tenants. Instead, the factory relies on generators and the administration buildings run off solar power. The high cost of running the generators undermines business efficiency. Despite efforts to attract investment from other agribusinesses, unreliable power from the national grid has proved a major impediment to investment. In fact, power issues as well as supply chain constraints such as poor road access and poor organization of farming cooperatives, have also placed operational strains on the anchor tenant. Addressing the energy problem has become the number one priority, whereby Africa Felix Juice LLP is considering investing in additional sources of power.

Source: interview with Grudda, 2014.

Site design, internal infrastructure and related services. SEZs typically provide a focal point for infrastructure development, ensuring access to industrial/manufacturing facilities, utilities (water, power, sewerage and telecommunications), waste management, logistics and customs facilities and transport infrastructure. Water and power especially are often cited as problematic and may require SEZs to incorporate infrastructure to generate their own sources of power and water. Some SEZs also include ancillary infrastructure such as training facilities, maintenance and repair centres and product exhibition areas, among others. Transportation and trade infrastructure linking SEZs to markets are also important, but sometimes overlooked by policy-makers. Enterprises within SEZs also require common service provision such as utilities, certifications, logistics and warehousing, and specialized services. These are commonly provided by the domestic private sector and represent important backward and forward linkages.

Designation criteria and land-use planning guidelines included in the regulatory framework serve as parameters for physical design, but typically allow a great deal of flexibility as well. The physical design of SEZs has become increasingly specialized, tailored to the needs of an agglomeration of similar industries with the explicit purpose of making SEZ enterprises more competitive (FIAS, 2008). The design should accommodate needs specific to agro-industry – including larger waste management facilities, cold storage, possibly warehouses including larger waste management facilities, cold storage, more warehouses. Of course, customization of SEZ infrastructure is only appropriate if developed in partnership with participating enterprises and consistent with the country's comparative advantage. Infrastructure design and land-use planning should address the unique operational needs of enterprises. For example, infrastructure design and plant layout for fresh mango exports and mango juicing are different from palm oil processing. By-product management and waste treatment are key considerations for agro-industrial facility design.

Some experts argue that agro-industry has a unique advantage in achieving economies of scale through establishment-shared facilities. Warehousing, cold storage, certain drying facilities and waste treatment are a few examples of facilities or services that could be shared by a variety of agro-industrial enterprises.

Finally, SEZ designs need to accommodate service providers – businesses that include utilities, warehousing and logistics, customs clearing, product certification and other specialized services. Allowing these types of enterprises to co-locate within SEZs has become a common provision within SEZ policy frameworks (FIAS, 2008). There is also a trend to allow private zone developers to supply utility services to SEZ enterprises (Monga, 2011).

Workforce development

The education levels, entrepreneurship, skill sets and labour availability of a region's workforce influence investment decisions and growth potential. Low-skilled, poorly educated and relatively larger populations have a greater comparative advantage for labour-intensive, low-technology industry (Farole, 2011). However, an educated and skilled labour force is critical for long-term economic growth, needing the attention of policy-makers (Harrold, Jayawickrama and Bhattasali, 1996; Stiglitz *et al.*, 2013).

Evidence suggests that SEZs have been a powerful vehicle for workforce skills development, particularly as countries climb the technology ladder (FIAS, 2008).

However, Chandra (2006), in the evaluation of ten case studies, concludes that workforce development past basic assembly-oriented tasks requires strategic efforts by the state to foster learning and knowledge spillovers. In low-skilled contexts, private enterprises mostly undertake on-the-job training, often limited to industrial routine and operations of site-specific technologies (Harrold, Jayawickrama and Bhattasali, 1996).

In some contexts, such as in several East Asian examples, private enterprises are willing to invest more in workforce training programmes because they perceive greater economic gain. State-led policies and programmes have also greatly encouraged workforce training in East Asia. Examples of public initiatives include:

- public programmes of technical assistance to build enterprise capacities;
- tax incentives/deductions for training programmes, although these have not proved to be very effective;
- encouragement of industry associations to undertake workforce training; and
- use of payroll taxes to finance training.

Workforce development has also taken place at the supervisory and managerial levels, focused on organizational and managerial techniques, negotiation, foreign contracts and marketing skills (Madani, 1999). However, in many developing countries, particularly in SSA, skilled technicians and managers are difficult to find. In these cases, countries need to hire expatriate staff to fill the void, while at the same time encouraging indigenous accumulation of skills and experience. It should be noted, however, that overreliance on an expatriate workforce, as in the case of some Chinese investments, reduces the benefits to the country by limiting knowledge acquisition, household income and related multipliers.

Given the importance of a productive workforce for enterprise success, SEZ development efforts should also account for social infrastructure needs such as housing, transportation, education, health care, child care and nutrition for working families (World Bank, 2011; Farole, 2011). Not all of these need to be built into SEZs or provided by their service providers, but they should be accounted for and coordinated with relevant public and private organizations. Access to health care and child care are particularly important for female-dominated workforces (World Bank, 2011b).

> *"There is […] wide acceptance of a new rationale for industrial policy. Economic development is the process of technological diffusion and industrial upgrading. It involves making knowledge available to the largest number possible of economic agents and fostering constant learning … If economic development is essentially about the diffusion of knowledge among the broadest segments of society, then it is inevitable that there be, or there ought to be, a role for government intervention. It follows that industrial policy should also be about facilitating the generation and acquisition of new knowledge that empowers households and firms"*
>
> Stiglitz et al., 2013, p. 7. (About the role of industrial policy in knowledge diffusion)

Finally, workforce training in the context of agro-industry also extends to the supply chain whereby the farming and post-harvest techniques have a direct impact on the quality and quantity of raw material used for transformation activities at agro-industrial facilities. The need for publicly sponsored efforts to train supply chain participants was discussed earlier in the section on Common design factors.

Key stakeholders

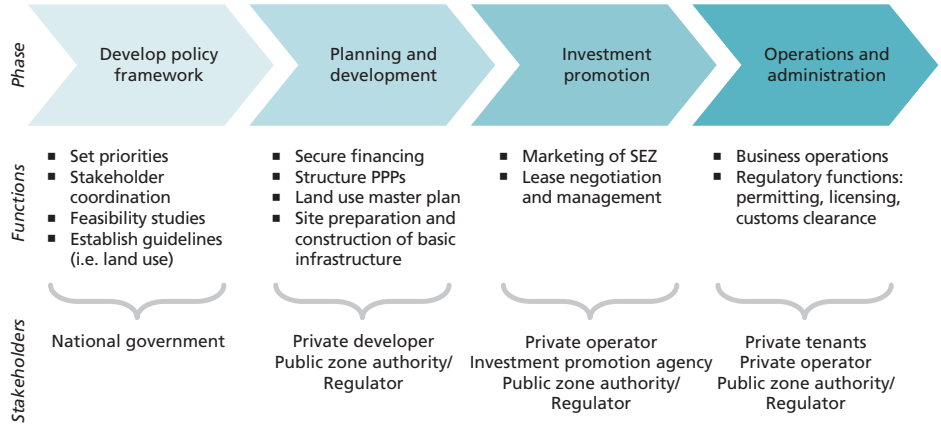
SEZs require active participation and coordination of a number of different stakeholders from both the public and private sectors. Initially, public sector leadership is required to establish the policy framework for SEZ development, set development priorities and coordinate with related government ministries including those that govern industry, agriculture, roads, power, water, environment and finance. Establishing an interministerial committee headed by a strong political leader is recommended to secure buy-in, establish credibility and progress through the initial phases of zone programme design (Farole, 2011; Monga, 2011). Engagement of the business community and local populations is also important in the process. To solicit input and secure buy-in from these stakeholders, policy-makers may construct public-private dialogue fora and organize a series of stakeholder consultations. Local communities have particular interest in SEZs as they provide sources of employment and impact the environment through land development, transport services and industrial processes.

For countries that aim to stimulate agro-industrial growth in their SEZs, streamlining of policy frameworks with those of the agriculture sector is of paramount importance because of the reliance upon domestic supply chains for raw materials. Establishing a common framework and shared objectives among public sector stakeholders is a first step towards establishing a clear and transparent policy framework to facilitate SEZ development. Consultation with the private sector is also advised to ensure that policies are well received by both domestic and foreign enterprises.

Stakeholders implicated in the SEZ development and implementation phases vary according to the institutional arrangements set forth in the policy framework, typically requiring close collaboration between public and private sector actors. Figure 18 illustrates the typical involvement of key stakeholders at different phases of SEZ development and implementation. These phases are not necessarily linear, so there are many overlapping functions, such as the investment promotion process that may take years.

Based on a national economic growth strategy, the *national government* usually initiates the SEZ process by developing the policy framework, establishing various land-use and regulatory guidelines, conducting feasibility studies and, in some cases, selecting sites and land packages for SEZ development (Farole and Kweka, 2011). Typically, the government then issues a tender to bring in the private sector for development and planning of the zone. This usually lends itself to some variation of a PPP. The PPP can be structured in many ways. The private company could for, instance, simply take on a management contract issued by the government; there could be a time-bound concession whereby various pooled assets remain each party's individual property for a (relatively lengthy) period but where everything is ultimately transferred to government ownership; or there could be some mixed

FIGURE 18
SEZ design and implementation process



Source: adapted from Farole and Kweka, 2011.

equity-based ownership formula, whereby a special purpose vehicle is created, in which both public and private funding and assets are vested (interview with Gauthier, 2014).

The *developer* is charged with creating a land-use masterplan and, once approved by the designated regulator, prepares the land accordingly for preconstruction readiness as well as developing the basic infrastructure within the area, including roads, drainage and sewerage, and utilities connections. The private developer very often becomes the owner and operator of the SEZ, but the operator may also be a different private company contracted by the owner/developer of the zone (Farole and Kweka, 2011).

The *operator*'s primary responsibilities are to manage the lease agreements with the zone tenants and ensure the provision of services to the zone, including utilities, maintenance, security and other value-added services as needed. The operator also plays an important role in marketing the SEZ, coordinating closely with the government's investment promotion agency and the zone authority/regulator.

The *zone authority* is the SEZ regulator (administrator). It is responsible for the official designation of zone land and for authorizing SEZ developers and operators. It also facilitates government approvals for licensing, registration, environmental concerns, construction and work permits, and customs clearance. The zone authority is further charged with enforcing compliance with all legal and regulatory policies. A key success factor of SEZs over time is the effectiveness of zone administration in providing streamlined regulatory functions (FIAS, 2008).

The *public sector*, which could be national, provincial or local governments, is responsible for the provision of off-site infrastructure such as farm-to-market roads, integrity of the power grid and port facilities.

Monitoring and evaluation

Despite political pressure for SEZs to demonstrate results, zone authorities often do a poor job of monitoring and evaluating their performance. This has caused frustration with governments and planners (as well as researchers) that seek to evaluate definitively the effectiveness of the SEZ model as a development tool and can contribute to the dearth of impact evaluations for SEZs.

The establishment of key performance indicators as well as data collection mechanisms should be incorporated in the zone authority's mandate, with statistics compiled and disseminated on an annual basis to foster discussion and decision-making with the zone authority's board of directors and, more widely, with the government and business community. The availability of such data can serve as both promotional and performance-enhancing purposes for zones as well as regulators.

Given the five- to ten-year gestation period for SEZs to generate momentum and ultimately private investment, accountability can be instilled through the establishment of a clear results framework that identifies interim indicators (such as institutional development and physical infrastructure milestones). Greater accountability is also dependent on the composition of the board/boards with more private sector representatives are deemed to be more results oriented than those comprised primarily of politically appointed government ministers (Farole, 2011). However, conflicts of interest arise when SEZ operators are also responsible for monitoring performance.

5.4 POLICY, LEGISLATION AND REGULATION: CHALLENGES AND GOOD PRACTICE

Policy challenges

As discussed earlier in this chapter, establishing a regulatory framework is the first step in the SEZ development process. There are many challenges inherent in the process since it requires leadership, coordination of government ministries and thoughtful crafting of the legal and regulatory framework to ensure clarity and transparency, and flexibility to allow for meaningful private sector participation and a variety of institutional arrangements. Exogenous factors such as the increasingly open global trade regime and climate change pose both opportunities and threats to the SEZ model that policy-makers must understand and act upon in order to maintain relevance and competitiveness.

Abuse of SEZ arrangements

A factor contributing to zone failure is the strength of vested interests that are able to influence SEZ policy formulation and implementation to their advantage (Baissac, 2011). Two actions can mitigate "policy hijacking": (i) empowering catalytic leadership to champion the SEZ development process; and (ii) encouraging stakeholder involvement through transparent consultations and policy vetting. If existing institutions are sources of corruption, then it should be within the zone authority's mandate and authority to work with the entity to eliminate corrupt practices or simply take over their regulatory functions (Farole and Kweka, 2011).

In many countries, a common grievance is the abuse of liberal tax and other incentives by well-connected business people and the dichotomy it creates between SEZ enterprises and non-SEZ enterprises (Monga, 2011). This particular challenge

can be addressed through legal frameworks that create "equal footing" for enterprises within and outside SEZs (FIAS, 2008; Monga, 2011). On the other hand, SEZ status can also serve to protect businesses from local politics and graft, as in the Philippines where local tax authorities are relieved from their role of tax collector and replaced by the centralized zone authority. The SEZ legal and regulatory framework serves as a tool that can aid or deter such rent-seeking abuses.

Policy enforcement

Establishing an excellent policy framework on paper is not the same as enforcing the rules and regulations. Irrespective of policy, zone administration can suffer from poor management, inadequate financing and political meddling. There can be other inefficiencies at play within related governmental agencies that slow down permits and approvals. FIAS (2008) recommends a number of solutions to address the weak capacity of administrative bodies, including the establishment of autonomous bodies (governed by a public-private board of directors) that serve as one-stop-shops for permits and authorizations. Where possible, procedures should be automated to hasten fast-track approvals and create transparency. The internal management efficiency of zone authorities can be enhanced by outsourcing and delegating functions that are peripheral to the entity's core purpose. When technical expertise is not available in-house, as is the case with reviewing masterplans developed by private developers, authorities should seek outside expertise, either through contracts or by establishing a review committee (Farole and Kweka, 2011). Zone authorities must of course be resourced with sufficient operating budgets to enable them to fulfil their mandates.

Coordination, leadership and links to the broader policy framework

The types of challenges that arise in the policy framework for SEZ governance illustrate the cross-sectoral nature of agro-industrial SEZs, once again pointing to the critical importance of strong leadership and coordination among many stakeholders, particularly among different government ministries. Harmonizing national policy objectives and incorporating SEZs into a broader and longer-term policy reform and economic growth agenda, with strong leadership at the highest levels of government, have proved to be the most effective strategy for achieving successful SEZs. Political cycles and the desire to demonstrate quick wins do not correspond with the results time line of most SEZs, which commonly require at least five to ten years from inception before they begin to build momentum, as mentioned previously (Farole and Akinci, 2011). Policy reversals resulting from political turnover can be detrimental to SEZ development by adding significant risk to investors (Monga, 2011).

Net positive fiscal regime

As discussed, fiscal incentives have become ubiquitous with SEZs and, given competition with other countries, a necessary part of the policy framework. However, there are a few principles that can help policy-makers to ensure that SEZs do not become instruments of "fiscal wars" that trigger a "race to the bottom" among countries and region. Box 45 describes approaches that ensure SEZs are fiscally net positive policy instruments, including application of the right types of taxes at the right transaction points.

BOX 45

Guidance on how to develop net positive fiscal regimes

To ensure SEZs are not a "net fiscally negative" proposition for governments, they should be taxed. However, taxes should primarily be in the form of direct taxes (e.g. corporate income tax and individual income tax from salaried employees within the zone). Select indirect taxes (primarily VAT) should only be paid on the finished product if sold and consumed domestically. Intermediary products sold to SEZs should be "zero-rated" (rather than exempt) for tax purposes. Other forms of indirect taxation are generally to be avoided altogether, so as to reduce production point costs and streamline the regulatory compliance burden of SEZ enterprises. As a general fiscal economics rule, exports (whether or not they emanate from SEZs) should never be subject to indirect taxation.

In the case of agro-industry where much of the intermediary raw material (e.g. feedstock, high-yield seed varieties, chemicals, fertilizers and capital equipment) is sourced from abroad, these "imports" into the zone should be duty free. Because SEZs are a policy tool designed to generate incremental new investment, there is no revenue loss from this duty waiver. Neither is there a duty opportunity cost, given that SEZs typically displace investment targeting new markets that would otherwise have been drawn to a "duty drawback" or "manufacturing in bond" regime. In the end, because investment in SEZs overwhelmingly tends to be incremental new investment, the new income tax they generate for their host governments will ensure a revenue-positive and socially responsible policy.

Source: interview with Gauthier, 2014.

Good practice with respect to legislation and regulation

This subsection summarizes several good practice elements.

1. **Legislation provides broad guidelines for SEZ regimes, while regulation provides detailed specifications on how legislation is enforced**
   SEZ law(s) should:
   - articulate the primary objective(s) of the SEZ regime;
   - define the respective rights, responsibilities and obligations of the government and the private sector;
   - explicitly allow private zone development and enable PPPs for zone development;
   - clearly designate the zone administration entity, describe its accountability mechanisms (i.e. lines of reporting and board composition), as well as its powers of authority to carry out its responsibilities, particularly as it pertains effectively to implementing a "one-stop-shop" to streamline regulatory functions (i.e. business start-up registration, land acquisition, construction and labour permits, and customs approvals); and
   - adhere to the concept of "extraterritoriality" as defined by the Revised Kyoto Convention, whereby SEZs are treated differently by customs functions from non-SEZ businesses (FIAS, 2008).

2. **Regulations should provide a clear set of rules and procedures for all steps in the SEZ development, investment and operations process**
   These include the following:
   - *Eligibility of businesses*. State the types of businesses and activities that can benefit from SEZ status.
   - *Equal treatment*. Remove any ownership restrictions and ensure equal treatment of foreign and domestic investments.
   - *Backward linkages*. Extend indirect exporter benefits and privileges to firms in the domestic customs territory that supply goods and services to zone-based enterprises.
   - *Zone designation criteria*. Provide criteria for the designation of new zones as well as physical development standards for physical design, environmental standards and land-use planning guidelines.
   - *Resettlement*. Ensure involuntary resettlement concerns are addressed through best practices in land governance and resettlement planning.
   - *Development/investment*. Provide minimum equity requirements for the zone developer and other criteria such as financial and technical track records.

3. **The institutional structure should be included in the broader SEZ legislation**
   This should include the following elements:
   - *Clarity and transparency*. Ensure that the institutional structure clearly defines roles and responsibilities.
   - *Avoidance of conflicts of interest*. Separate the regulatory roles of owner, developer and operator as much as possible.
   - *Zone administration*. Embody the guiding principles of autonomy and authority. Associating the zone administrator with a central ministry or a higher government office (e.g. Prime Minister or Presidency) can provide authority to coordinate across ministries and local authorities, and effectively perform its role as a "one-stop-shop" for regulatory functions.
   - *Autonomy (political and operational)*. Zone authorities should be able to conduct their business with a high degree of autonomy. Depending on the national context, establishing zone authorities in the form of corporate entities can avoid cumbersome civil service restrictions such as recruitment, hiring, firing, staff compensation, procurement procedures and budget management.
   - *Autonomy (budget)*. Zone authorities should manage their own budgets. One mechanism to improve budgetary autonomy (from government budget cycles, deliberations, etc.) is to dedicate a portion of tax revenues from zone businesses to the zone authority, thereby providing a performance-based incentive structure for zone authorities.
   - *Inclusiveness of private sector*. Carve out a meaningful role for the private sector.
   - *Zone administrator board composition*. Boards should be independent, comprising fewer than 13 members, with the majority (or at least a significant portion) representing the private sector.

4. **Legislation and regulation should articulate fiscal and incentive arrangements that are harmonious with existing regimes and retain net fiscal benefits for the economy**
   - *Tax incentives*. SEZ businesses should be taxed to ensure they are fiscally net positive undertakings for the government. It is best to apply direct taxes in the form of corporate income tax and individual income tax from salaried employees. Governments should provide the same incentives as the competition, trying not to engage in a "race to the bottom" tax structure but rather to focus on other aspects of competitiveness to attract investors.
   - *Harmonize tax regimes*. Apply the same corporate income taxation policies to SEZ businesses as to those outside the zone regime. The only difference in fiscal policy should be tax exemptions on imports of economic goods for SEZ businesses that add value to these goods.
   - *WTO compliance*. Ensure that the incentive framework is WTO compliant.
   - *Taxation of intermediary products*. Intermediary products sold to SEZs should be "zero rated" or "duty free" (rather than exempt) for tax purposes.
   - *Taxation of exports*. Exports should not be subject to indirect taxation (VAT).

5.5 CASE STUDIES

The two case studies profiled here highlight agrospecific considerations for SEZ development. The coffee case study in the Philippines summarizes an example of how the well-established and successful SEZ framework in the country has been expanded to target agro-industrial growth. However, adopting the country's single company free zone policy to cover an operational footprint inclusive of outgrower schemes with smallholder farming communities has proved to be the greatest challenge for the private operator. The owner has carefully designed the "hub and spoke" business model to address supply chain challenges.

The second case study discusses how the SEZ model has been applied and implemented in Africa and highlights driving factors behind successes and failures, with a particular focus on agro-industry. This regional assessment of the relatively recent experience with SEZs illustrates how SEZs operate within existing policy frameworks and core infrastructure conditions and provides policy-makers with considerations for improving the SEZ experience in the future. Unique to agro-industry is the need for a policy framework that encourages market-based domestic sourcing of raw material and strong supply chain linkages. Linkages and access to domestic and regional markets are discussed in both cases.

Case 1 – Philippines: the Philippine Economic Zone Authority and the Rocky Mountain Arabica Coffee Company

Coffee-focused agro-industrial SEZ in the Philippines

This case study illustrates a unique agribusiness model emerging in the Philippines that is both shaped and strengthened by the SEZ framework in the country. It demonstrates the need to customize SEZ approaches according to value chain characteristics. The nuances of the case reflect the particularities of the coffee industry in the Philippines as well as the vision and persistence of the company's entrepreneurial leader. Arguably, the model would not fare so well if it were not for the capable services provided by the country's zone authority. Countries and businesses aiming to expand their agro-industry will find aspects in this model that they may be able to replicate in their own country contexts.

Key concepts discussed in the case include:

- success of private versus publicly led SEZ development;
- adaptation of the traditional SEZ model to fit the specific needs of agro-industry;
- vertical integration of the SEZ footprint as a means to address value chain constraints systematically;
- access to the domestic market as a springboard for export expansion; and
- business benefits of the SEZ model.

Background to Filipino SEZs. Renowned success with SEZs in the Philippines over the past 40 years has led to innovation and adaptation of the model to suit the needs of agricultural and agro-industrial growth in the country's rural areas. Governed by the Special Economic Zone Act of 1995, SEZs in the Philippines benefit from a business-friendly policy and incentive framework (see Box 46) and a service-oriented zone authority, the Philippine Economic Zone Authority (PEZA). PEZA serves effectively as a one-stop-shop for issuing various permits (e.g. building, occupancy, import, and export and work visas), expediting customs processes and environmental clearances, and simplifying tax procedures for businesses operating within designated economic zones.

PEZA is structured as an independent agency attached to the Department of Trade and Industry. Its Board is chaired by the Secretary of the Department; the Vice-Chair is the Director-General of PEZA; and the remaining nine Board members are Undersecretaries of nine government agencies. Composition of the Board is aimed at coordination among various government departments. PEZA also promotes client orientation by assigning one PEZA officer to each economic zone (with the exception of ITC companies). PEZA's three primary development goals are investment promotion, employment creation and export generation.

The SEZ Act of 1995 embodied a policy shift from a predominantly state-led process of developing economic zones to one that encouraged greater private sector initiative in zone development. Since 1995, PEZA has ceased to develop economic zones. The policy shift paid huge dividends to the country, attracting nearly 2 trillion dollars of investment between 1995 and 2011, exponentially more than the country could attract prior to the policy shift. In 1994, the Philippines had 16 SEZs in the country. As of 2012, PEZA oversees 271 economic zones nationwide, including 16 agro-industrial economic zones (PEZA, 2012).

BOX 46
SEZ investment incentives in the Philippines

1. Four-year Income Tax Holiday (ITH).
2. Special 5 percent tax on gross income in lieu of all national and local taxes after ITH.
3. Tax- and duty-free importation of production equipment and machinery, breeding stocks, farm implements including spare parts, and supplies of equipment and machinery.
4. Exemption from export taxes, wharfage dues, imposts and fees.
5. Exemption from payment of local government fees such as Mayor's Permit, Business Permit, Permit on the Exercise of Profession/Occupation/Calling, Health Certificate Fee, Sanitary Inspection Fee and Refuse Fee.
6. Zero VAT rate on local purchases, to include telecommunications, power and water bills.
7. Special investor's visa.
8. Employment of foreign nationals.
9. Simplified import and export procedures.

Source: PEZA presentation, 2008.

Beginning in 2006, the Government issued a series of resolutions elaborating on the SEZ Act of 1995 that outlined regulations for specialized economic zones, including manufacturing, information technology, tourism and agro-industrial economic zones. In May 2007, the Government issued Resolution No. 07-232 that outlines the eligibility requirements for agro-industrial zones. It defines agro-industrial economic zones as "A selected area with highly developed or which have the potential to be developed into agro-industrial estate whose metes and bounds are fixed or delimited by Presidential Proclamation. The agro-industrial economic zone shall be planned and designed to have support facilities and services required for processing and agrobased manufacturing activities, utilizing local agricultural and marine products as basic raw materials (e.g. post-harvest treatment, packaging, printing, cold storage, blast freezing, by-product and waste management and other facilities and services). Similar agricultural products may be brought into the zone to be stored, sold, exhibited, broken up, repacked, distributed, sorted, graded, cleaned, mixed with foreign or domestic merchandise, or otherwise manipulated or manufactured and exported" (PEZA, 2007, p. 2).

This expansion of the SEZ model for agro-industrial purposes dovetailed with a broader policy shift within the government to prioritize business development in the country's rural and most impoverished areas, primarily through the acceleration of agro-industrial activities by the private sector. The objectives of agro-industrial economic zones, as stated in Resolution No. 07-232, are to:

- serve as locations for the operations of agro-industrial enterprises in order to accelerate the growth and development of the Philippine agro-industrial sector;
- promote linkages through the production of high value added and better-quality agricultural and marine products geared primarily for the export market;
- increase the agricultural share in export earnings and employment;

- encourage the private sector to participate more actively in agro-industrial development;
- accelerate agribusiness development in the countryside;
- promote and support the Government's national biofuels programme to lessen the country's dependence on imported fuels; and
- help increase the income of farmers resulting from the activities of registered agro-enterprises.

RMACC's business model. Responding to attractive SEZ investment incentives, the government's prioritization of rural development and, most important, the economic opportunity of sizeable Filipino demand for coffee, Pierre Yves Coté took steps to expand his Rocky Mountain coffee distribution business to support the development of a local coffee industry in the Philippines mountains through the establishment of RMACC as an agro-industrial enterprise. RMACC is currently registered as an enterprise within the Baguio SEZ with 60 ha of arabica coffee plantation, and plans to develop an additional 100 production ha, a coffee mill, ecotourism attractions and company headquarters for Asia. This initial step of establishing operations within an existing SEZ is intended to prove the concept and pave the way for future RMACC single commodity SEZs, whose business case and operational model are outlined herein.

The Philippines is a net importer of coffee beans with relatively little production. In 2013/14, the Philippines consumed 237 000 tonnes (USDA, 2014) and produced just short of 90 000 tonnes (FAOSTAT, 2014). RMACC believes that natural competitive advantages position the Philippines to displace imports for the domestic coffee market. Moreover, the Philippines used to be the world's third largest coffee-producing nation some 50 years ago. Its elevation, climate and water resources are ideal for arabica coffee production and coffee can be produced locally at a fraction of the cost of imports. There is also growing potential for exports of coffee, particularly speciality organic and fairtrade coffee, originating from the Philippines.

PEZA allows domestic market sales for SEZ products that are imported in large quantities. Coffee complies with this condition, but is also a highly traded commodity. The Government of the Philippines aims eventually to export domestically produced coffee. In the short to medium term, however, it understands that it must allow its domestic companies to access the domestic market as an initial step towards building export competitiveness.

Despite natural competitive advantages in coffee production, there are constraining factors in the coffee value chain that hinder the Philippines' ability to capture both domestic and international coffee markets, including the following:

- cumbersome processes to access land;
- limited access to coffee plant seedlings;
- limited on-farm technical knowledge and pest and disease control, leading to poor production quality;
- low production volumes;
- limited market access;
- limited access to finance;
- limited access to processing technologies; and
- graft.

Pierre Yves Coté has designed RMACC to address these value chain constraints. Future RMACC investments will be organized around a hub and spoke investment model that provides investment services to initiate coffee production, quality single-origin-certified planting material, fertilizers adapted to the coffee industry, technical assistance to assure production quality, training for small farmers and market access. SEZ status provides tax benefits for agroprocessing and production activities, prioritization of national infrastructure investments such as farm-to-market roads, and ease of regulatory procedures and permits through PEZA's one-stop-shop.

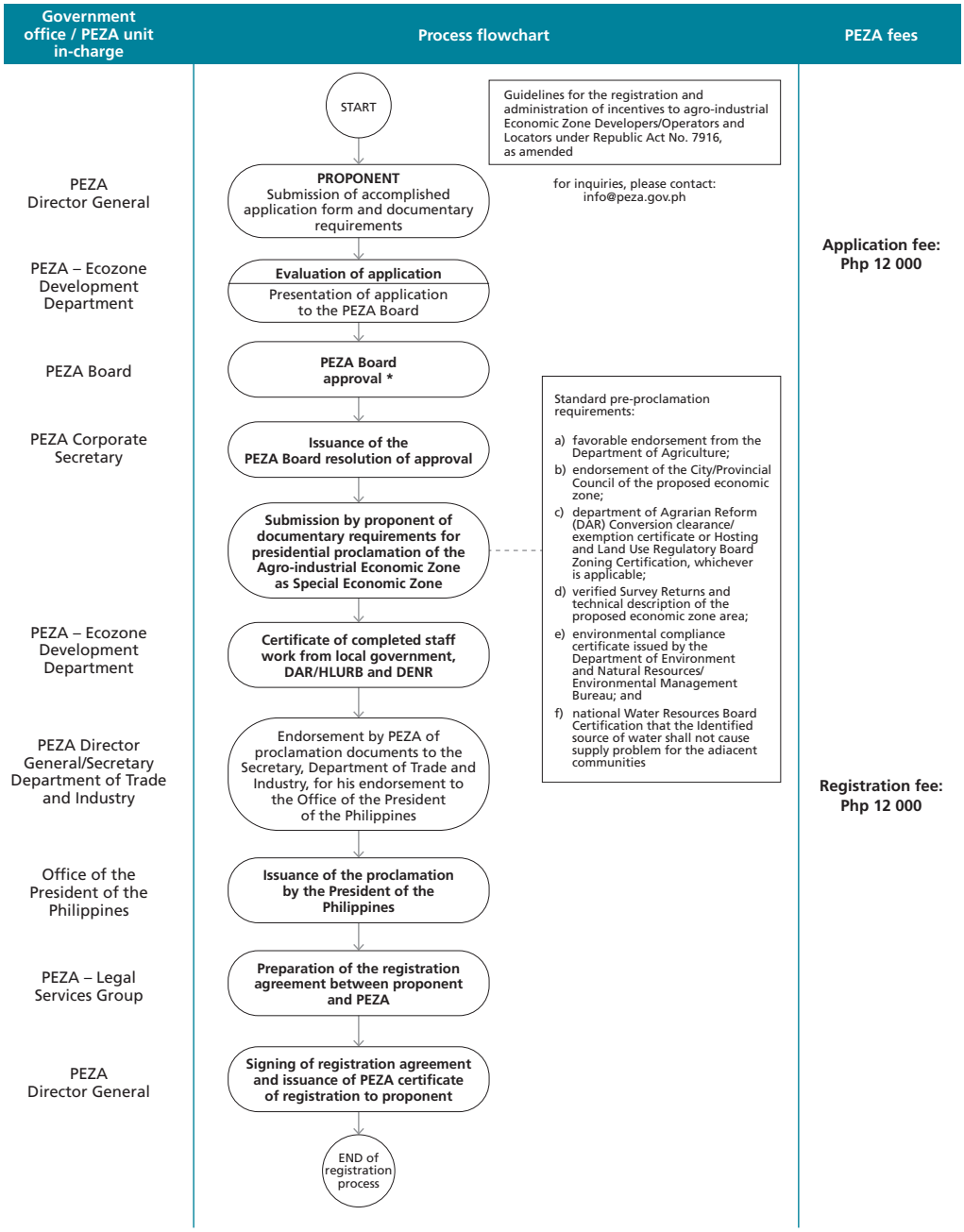
RMACC serves as the SEZ developer and operator, as well as the anchor investor through its "hub" activities, which ensures market access for coffee producers, requiring all production to be sold to its coffee mills. It is then processed and sent to urban markets where it is roasted and distributed to retail outlets. RMACC facilitates outgrower investment in coffee production by securing production rights to non-contiguous land around its coffee mills (typically 100 ha at a time), providing access to quality planting material through nursery sales, and improving quality and quantity produced through training of workers in farm management techniques and investments in laboratories for pest and disease control. Collectively, the RMACC "hub" activities and production "spokes" of outgrower coffee producers comprise one agro-industrial economic zone.

In the challenging business environment of the Philippines (ranked in the 30th percentile in the Control of Corruption index of the World Bank's Worldwide Governance Indicators), SEZs also provide the benefit of avoiding local politiciza-

FIGURE 19
Rocky Mountain hub and spoke SEZ model

Source: author's elaboration from interview with Coté, 2014.

FIGURE 20
Procedure for the registration of an agro-industrial economic zone



* PEZA Board meets at least twice a month.
Applications received within three (3) days prior to a scheduled PEZA Board meeting will be presented in the Board meeting.

Source: PEZA, 2014.

tion of business. This benefit is purposefully written into SEZ legal framework by requiring businesses operating within SEZs to coordinate directly with PEZA for streamlined tax payments, which effectively bypasses local tax authorities and the potential for graft (see points 2 and 5 in Box 46).

Agro-industrial economic zone establishment process. The PEZA process for agro-industrial economic zone establishment is clearly outlined on the PEZA Web site (see steps below). It is also remarkably inexpensive, requiring less than US$600 in total.

Perhaps the most daunting task is to secure the number of documents to be submitted for the application process, requiring interaction with nine different government agencies:

1. Favourable endorsement from the Department of Agriculture.
2. Notarized PEZA application form and anti-graft certificate.
3. Board Resolution authorizing the filing of the application with PEZA and designating representative(s) authorized to transact the registration with PEZA.
4. Securities and Exchange Commission registration, including articles of incorporation and by-laws.
5. Proof of ownership of or right to use the land that is the subject of the proposed agro-industrial economic zone.
6. Foreshore Lease Agreement from the Department of Environment and Natural Resources (DENR), if applicable.
7. Certification from the Housing and Land Use Regulatory Board (HLURM) specifying that the proposed land use is in accordance with the land-use plan duly approved by the Legislative Council (*Sanggunian*) of the host city/municipality.
8. Environmental Compliance Certificate issued by the Environmental Management Bureau/DENR.
9. National Water Resource Board certification that the identified source of water will not cause a water supply problem for adjacent communities.
10. Endorsement by the concerned local government units (LGUs).
11. Site development plan.
12. Technical description of the area(s) sought to be proclaimed as an agro-industrial economic zone, including survey returns duly approved and verified by the Land Management Bureau of DENR.

Fortunately, PEZA has a reputation for being efficient and professional and has proved helpful in working with other government agencies when its clients are hindered by bureaucratic bottlenecks. RMACC registered as a business within the Baguio SEZ in October 2013. The process for registering an agribusiness within an existing SEZ is more streamlined than establishing a new SEZ, requiring touch points with only five government agencies rather than nine. The entire registration process for RMACC was completed in three months. The RMACC business concept was well received by the Department of Agriculture, PEZA and the local community as it makes productive use of underutilized mountainous and protected land and creates jobs for poor communities. This investment is intended to pave the way for stand-alone SEZs developed by RMACC currently under development, organized around its hub and spoke, single commodity investment concept. For example, RMACC

is currently outlining, in coordination with the management team of Baguio SEZ, environment monitoring protocols that will be applied to future investments.

A particularity of PEZA's approvals process is that RMACC has to begin its operations prior to obtaining SEZ status. This means securing land rights and planting the coffee plantations. Given that land scarcity is a major constraint in the Philippines, obtaining land agreements for coffee plantations is a critical first step in the agro-industrial economic zone registration process. The most difficult hurdle to overcome is that RMACC has to negotiate land-use agreements with local indigenous tribes. Land tenure in the mountainous areas of the Philippines is characterized by usufruct rights whereby land is managed by local communities or indigenous people's organizations. RMACC successfully navigated the multistep negotiation process governed by a specific legal framework and overseen either by DENR (for the Community-Based Forest Management Agreement), the National Commission on Indigenous Peoples (for the Certificate of Ancestral Domain Title) or the Department of Agrarian Reform (DAR) (for Agrarian Reform Communities). The lengthy process results in an Agroforestry Management Agreement (AFMA) which, once approved by DENR, the National Commission on Indigenous Peoples and the local government units, is valid for 25 years, and may be renewed for another 25 years.

RMACC has successfully negotiated a first AFMA for 60 ha with the Camp John Hay Development Corporation (a subsidiary of the Bases Conversion and Development Authority), and a second AFMA for 100 ha with the John Hay Development Corporation in the Baguio SEZ, and has established an arabica coffee plantation in these areas. The trees planted were expected to bear fruit in 2015, at which time RMACC would build milling facilities. Other RMACC investments are under way, discussed in greater detail in the next sections, beginning with the land agreement process.

RMACC investment proposition. RMACC plans to make the negotiated land management agreements available to single firm or multifirm investors in 100-ha packages. On this land, the investor must agree to plant arabica coffee trees from the RMACC nursery and sell the harvest to RMACC for processing. Total investment requirement per 100 ha is about US$1 million, which includes US$340 000 capital investment for initial plantation development and US$660 000 for plantation maintenance for the first five years. Tenants pay a rental fee for the land based on the amount (in kg) of green beans produced. For every 1 000 ha of production, RMACC invests US$385 000 in a coffee mill, nursery, laboratory and office. It also trains local workers and facilitates access to finance for the investors, if necessary, by guaranteeing purchases and using the coffee trees themselves as collateral rather than land (see Box 47).

Thus far, RMACC has secured usufruct rights to develop five company-owned and managed plantations in five areas of 100 ha each (500 ha in total) in various locations in northern Luzon, Visayas, and Mindanao, and the company is in the process of developing five new areas of 100 ha each before the end of 2015 (another 500 ha) for a total of 1 000 ha, increasing national coffee production by 1.5 million kg annually. By granting an SEZ status to RMACC plantations and processing centres, RMACC believes it can easily double national coffee production to 3 million kg by sharing RMACC technology and market access through the single commodity SEZ concept. Dozens of small and large investors have expressed interest in producing

coffee in partnership with RMACC in various locations nationwide. The single commodity SEZ could prove a very effective way not only of channelling local investment but also attracting foreign investment in the agriculture sector that has been traditionally neglected because of too many perceived risks.

RMACC physical design. Plantation land is selected based on its suitability for arabica coffee production, taking into account factors such as elevation (at least 1 000 m above sea level), climate and water availability for gravity-fed irrigation. Approximately 1 000 non-contiguous ha are dedicated to primary production; 1 ha for the nursery; 1 ha for the mill to process export grade green coffee beans, a laboratory for soil and leaf analysis, pest and disease control, and coffee cupping, and a main office for the management team with a meeting room and training room. Production areas are clustered around the coffee mills that are strategically located within 200 km from the nearest seaport or urban market. For example, Baguio SEZ is 59 km from the Poro Point seaport. RMACC and its partners are currently developing five other SEZ locations: Piddig, Ilocos Norte (1 000 ha); Alfonso Castaneda, Nueva Vizcaya (500 ha); Libona, Bukidnon (1 000 ha); Malaybalay, Bukidnon (1 000 ha); and Kiamba, Sarangani (1 000 ha).

The national government prioritizes the construction of cemented roads connecting processing centres, generating economic activities with the nearest seaport. Construction of farm-to-market roads within mountainous production areas might theoretically pose a problem, but RMACC has found that various national government departments (Department of Agriculture, Department of Tourism, Department of Public Works and Highways) and local government units (municipalities and provinces) have been willing to develop and maintain these roads themselves, most of whom have their own construction equipment and skills to build these tertiary networks. RMACC provides some nominal financial assistance to facilitate construction such as paying for the fuel and the salary of the operator of the equipment while the LGU provides the equipment free of charge in order to facilitate project implementation.

BOX 47

Facilitating access to rural finance

Land has generally been the only acceptable collateral for rural loans, which significantly limits access to financing, particularly for those that operate within tribal areas located in high elevation mountains. RMACC has played a pioneering role in changing the perceptions of banks to allow coffee trees to be used as collateral for loans. This is a first in the history of the Philippines, and the model can now be applied to other perennial trees that have a productive life of more than 20 years. In order to turn the trees into an asset, each coffee tree is tagged with a barcode and georeferenced by GPS (global positioning system). A third party is periodically hired to do an audit of the tree count, which allows for third party certification. The International Finance Corporation is also interested in developing Rocky Mountain Finance to help smallholders and tribes access loans.

Source: interview with Coté, 2014.

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Case 2 – Sub-Saharan Africa case study

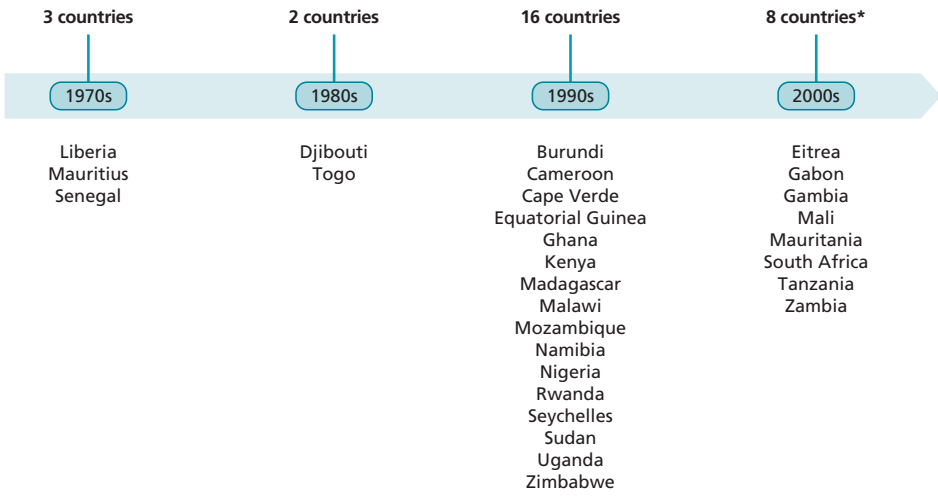
Many SSA countries have attempted to emulate the Mauritius SEZ and Asian economic growth success by creating SEZs within their borders. The primary objectives of these SEZs are to diversify the economy, create non-farm employment, attract investment and benefit from skills and technology transfer. Their efforts have met with mixed results and have on the whole underperformed with regard to their Asian predecessors. This case discusses how the SEZ model has been applied and implemented in Africa and highlights the driving factors behind successes and failures, with a particular focus on agro-industry.

Application of SEZs in Africa

SSA is a relative newcomer to the application of the SEZ industrial development model. By 1990, only eight SSA countries had SEZs; by 1996, six other countries had also created SEZs; and by 2006, 20 countries had 114 SEZs, excluding single factory free zones (Stein, 2008; Farole, 2011). As of 2006, these SEZs employed more than a million workers, although South Africa accounts for half of this figure (Farole, 2011). On average, African SEZs have approximately 35 enterprises operating within their geographic borders, excluding the single company zones, totalling approximately 4 000 firms operating within SEZs in Africa (Farole, 2011).

Most of these SEZs were established in the 1990s and 2000s, with a handful created in the 1970s, notably Liberia (1970), Mauritius (1971) and Senegal (1974) (Farole, 2011). Most African SEZs were initially designed to fit the traditional EPZ model of labour-intensive assembly manufacturing, although agro-industry has long been a significant sector within Kenyan zones. The current SEZ landscape in Africa reflects various forms of SEZs, including a continued reliance on EPZs, but

FIGURE 21
Time line of establishment of SEZs in sub-Saharan Africa



* 20 countries total with 114 zones excluding Single Factory Zones.
Source: Farole, 2011.

also a growing number of single factory free zones. For example, Ghana, the United Republic of Tanzania, Kenya and Senegal have actively encouraged single factory free zones in recent years (Farole, 2011).

Aside from single factory free zones, there remains a heavy emphasis on government-owned and operated SEZs. Ghana and Kenya are the exceptions with mostly private sector zones (FIAS, 2008).

Investment and operations in the zones reflect a wide variety of activity, dominated by clothing, textiles and food processing (Farole, 2011). SEZ-based agroprocessing activities take place in many countries, including Kenya, the United Republic of Tanzania, South Africa, Nigeria and Senegal, and are the dominant activity in Ghana. For example, in western Kenya horticultural and floricultural activities are taking place in EPZs around Lake Victoria where military airports have been converted to facilitate overnight exports to the Netherlands.

Assembly-focused activities are much less important in African SEZs than they are in other regions of the world. Indeed, several countries that initially set out to attract FDI in assembly-based and ICT activities did not succeed in doing so. For example, Ghana established its SEZ programme in the 1990s with a pilot free zone in Tema. The Government aimed to attract FDI in textiles and ICT manufacturing and logistics services for regional trade. These types of investments never came to fruition. Instead, agroprocessing companies that could see Ghana's potential and reliable sourcing of raw materials invested in cocoa, timber and fish processing activities.

TABLE 15
Summary of SEZs in selected African countries

Country	SEZ model	Type of activity
Ghana	Single factory free zone, EPZs	Agroprocessing (cocoa and timber), clothing, textiles, printing
Kenya	Mostly private EPZs, industrial parks	Clothing, textiles, agroprocessing (tea, coffee, fertilizer, meat, fish, horticulture, flowers)
Mauritius	Single factory, EPZ, FTZ	Clothing, textiles
Nigeria	Mostly public EPZs and single factory	Wood processing, food processing, clothing, textiles, oil and gas
Senegal	EPZ and single factory	Food processing, call centre, pharmaceuticals
South Africa	Hybrid EPZ moving towards allowing various models	Motor, agroprocessing, aluminium

Sources: FIAS, 2008; Stein, 2008; Farole, 2011; Deloitte and Touche, 2013.

Another deviation from initial design intentions is the shift to regional end markets versus global trade. For example, Nigeria's Calabar Free Trade Zone hosts companies that have become market leaders of products destined for domestic and regional markets. Similarly, the United Republic of Tanzania has benefited from its strategic position between two regional trading blocs, the Common Market for Eastern and Southern Africa (COMESA) and the Southern African Development Community (SADC). Where there is FDI, it comes mainly from the EU, with a growing number of companies originating from East Asia and South Asia (Farole, 2011). Botswana is considering the creation of SEZs to meet South African and EU demands for horticulture and beef products (interview with Gauthier, 2014).

Factors driving success and failure

Very little empirical research has been conducted on the performance of Africa's SEZs, with the exception of Mauritius. In an attempt to fill this void, Farole (2011) studied six countries in SSA and drew a number of conclusions that shed light on their performance. On average, African SEZs show low levels of investment, exports and employment, and have not necessarily resulted in structural changes in the economy (e.g. shifting away from basic agricultural production to manufacturing). Farole and others (Stein, 2008; Monga, 2011; Stiglitz *et al*., 2013) insist that it is still too early to pronounce whether these efforts are categorically successes or failures. Some show great potential, while others have already course corrected. Countries such as Mauritius, Kenya, Ghana and Madagascar (before the recent political turmoil) have been more successful than countries such as Nigeria, Senegal, Malawi, Namibia and Mali. Farole (2011) and Monga (2011) point to a number of factors that have contributed to relative underperformance of African SEZs. These include the following:

- Designs that do not correlate with comparative advantage.
- Weak governance.
- Challenges with traditional factors of competitiveness.
- Lack of integration into a wider policy reform agenda.

Another contributing factor to Africa's underperformance, Farole argues, is the *inopportune timing of Africa's entry into the SEZ global marketplace*. He states: "With [a few exceptions]…, the African programmes in the study were only operationalized well into the 1990s – probably too late to take advantage of the massive globalization of manufacturing that accelerated during the 1980s and 1990s" (Farole, 2011, p. 89). The traditional EPZ models largely adopted in African countries (at least initially) reflected a dying global trade paradigm and were in need of restructuring at the outset.

Design for comparative advantage. Most African SEZs began with a narrow export-oriented focus that was remarkably divorced from domestic economies and inherent comparative advantages. Except for a few countries (e.g. Kenya and Mauritius) that were able to capitalize on textile and clothing manufacturing before the termination of the Multifibre Arrangement in 2004, most countries failed to attract the levels of FDI in assembly manufacturing for which they had hoped. Therefore, the traditional EPZ models may not have been the most appropriate form of SEZ, given the region's comparative advantages and timing of entering the global marketplace.

It is widely recognized that Africa is well positioned to produce crop, livestock, forestry and agroforestry products given its diversity of climatic zones, land availability and water resources. Local and regional markets present significant opportunities for African agribusinesses, whereby food demand on the continent is expected to reach US$100 billion by 2015, representing a doubling of its demand since 2000 (Yumkella *et al*., 2011). A growing portion of this demand is packaged or processed food, increasing by an annual rate of 7 percent in upper-middle income countries, 28 percent in lower-middle and 13 percent in low-income countries (Yumkella *et al*., 2011). Such growth in demand is expected to continue for reasons such as increasing populations, urbanization, increased per capita consumption through changing diets, a growing middle class with high purchasing power, and increasing female participation in labour markets (Yumkella *et al*., 2008).

There is also a growing trend in exports of both primary and processed agricultural products from African countries to other developing countries (led by China and India at US$2 billion and US$1.4 billion respectively, overwhelmingly unprocessed goods) as well as niche and speciality products to developed countries. Unprocessed agricultural commodity exports from Africa increased by 5 percent per year from 1996 to 2002 and processed agricultural products grew at a rate of 7.2 percent annually during that period (although starting from a low base), rising from US$14 billion in 1990 to US$51 billion by 2008. Exports of unprocessed agricultural goods continue to be the majority of exported agricultural products from Africa (Yumkella *et al*., 2011).

These positive trends highlight *opportunities for African countries to apply SEZ policy frameworks and concentrated, specialized infrastructure to continue to increase market share and add value to their primary products*. Depending on the target market, the SEZ platform can be customized either to access regional markets and/or access regional supply chains. The former would place an emphasis on duty-free exports to regional markets, while the latter would place an emphasis on duty-free access to raw materials. With appropriate policies and incentive structures, agro-industrial SEZs can serve as a platform for growth in diversification and value addition of the continent's natural resources.

Weak governance and wider policy reform. African SEZs often have pronounced governance problems, largely associated with the limited capacity of zone authorities. Underlying reasons such as inadequate budgets, lack of accountability and results orientation, and lack of interagency coordination impact the effectiveness of zone authorities to enforce the legal and regulatory framework (Farole, 2011). Studies show that regulatory ease within zones is better than outside the zones. For example, customs clearance is 30 percent faster in the zones (Farole, 2011). However, such gains in performance may still not be very competitive globally.

Some African countries have not yet created either SEZ legal frameworks to serve as cornerstones towards establishing clear and transparent guidance for private development of SEZs (e.g. Ethiopia, Botswana, Sierra Leone), or have poorly designed institutional structures with compromised autonomy, authority, insufficient budgets and capacity (e.g. the United Republic of Tanzania). This chapter also argues for *targeted agricultural policies and regulations to address specific bottlenecks* for growth in the targeted subsectors. Such policies become mute without the basic legal and institutional guidelines for SEZ development.

Challenges with traditional factors of competitiveness. The *poor infrastructure networks* in SSA are frequently cited as constraints to growth. Poor road conditions add to transport costs and time and, in many cases, leave parts of the region inaccessible during parts of the year. Underdeveloped and weak power grids cause frequent power outages (as seen in Sierra Leone, Box 44), thereby causing factories to work below capacity, threatening cold chain integrity and adding cost to raw materials because of post-harvest losses. Poor access to potable water and sanitation causes health issues that erode labour productivity, and poor ICT connectivity reduces the ease and extent of knowledge diffusion. Lack of irrigation in areas with an unreliable supply of rainwater causes production risks leading to underinvestment in productivity enhancing technologies and higher-value cropping patterns. All of these add transaction costs to doing business in the region, reduce productivity and increase risk.

The creation of SEZs (excluding the single factory zones) is a *means to direct financial resources towards building supportive infrastructure*, regardless of conditions in the rest of the country. In some respects, this strategy has worked. African SEZs report an average of 50 percent less downtime resulting from electricity outages than enterprises outside the zones (Farole, 2011). However, not all SEZs have reportedly succeeded in supplying sufficient "internal" infrastructure; many SEZs continue to face significant costs because of poor "external" infrastructure such as port facilities, access roads and waste management (Farole, 2011).

Finally, Farole (2011) concludes that *public and private zones have been equally troubled* in the subcontinent. This is in contrast to the better performance of private zones in other regions of the world and implies that there are more fundamental competitiveness issues plaguing SSA. For example, Box 43 cites the elevated cost of labour, energy, water and communications as part of the reason for the failure of the Dakar Free Zone in Senegal.

The recent emphasis on single factory zones may also be misguided. Following the lead of Mauritius, many countries pursued a single factory free zone scheme. In countries such as Madagascar, Seychelles and Mauritius, this approach has been successful in creating jobs and generating exports (FIAS, 2008). Single factory zones

benefit from fiscal and trade (duty-free) incentives. However, they do not necessarily benefit from investments in supportive infrastructure and expedited administrative services, and therefore may not be reaching their potential. There is also some question as to whether single factory zones are ripe for nepotism and rent seeking, as not all companies may have access to preferential treatment (Farole, 2011). See Box 38 for more discussion on single factory zones.

The small scale of SEZs (averaging 35 firms per SEZ), the diverse nature of economic activities and the geographic dispersion of single factory SEZs render management of these zones cost inefficient. There is a reduced capacity to catalyse dynamic benefits through programmes such as broader business environment reform, diversification, technology upgrading, workforce development, integration with the domestic economy and economies of scale through industry clustering (Farole, 2011). Concerns of favouritism to access zone status and preferential treatment within zones remain prevalent throughout Africa.

Integration into a wider policy reform agenda. The broader investment climate outside the SEZ framework also factors into SEZ success (Farole, 2010). Baissac (2011, p. 16) states: "There is likely to be a strong correlation between state strength and zone success. The notion that zones would represent an achievable policy option in states where 'everything else has failed' is thus problematic". Investors consider policy topics such as contract enforcement, labour laws, land tenure, access to finance, corruption, utilities costs and management, value chain integration (particularly for the agricultural sector), quality and availability of support services, and political stability. Many African countries do not fare well with these broader indicators that influence national competitiveness and often weaken the allure of SEZs that only partially work around some of these issues.

Looking forward

Many African SEZs have stumbled since their establishment, but they are relatively young and show some promising results. Recent interest in developing specialized zones for agro-industry could lead to further innovations in the SEZ model that more closely align with inherent comparative advantages. If policy-makers learn from their experience to date and reorient their programmes, they may be very well placed for growth. Economic trends such as increasing globalization of food

> *"The Export Processing Zone models that were at the heart of the success of traditional zone programmes in East Asia and Latin America during the 1970s through the 1990s are no longer relevant in the post-crisis world; they are likely to fail in Africa. But by focusing on comparative advantage and on integration – with national industrial policies, among government institutions and the private sector, and between zones and domestic markets – SEZs have the potential to contribute to improving Africa's competitiveness and its integration with the global economy, thereby helping to create jobs and raising incomes"*
>
> Farole, 2011, p. xiv

systems, greater urbanization and a growing middle class in the region present opportunities for agroprocessing firms wanting to expand into new markets. African countries often have comparative advantages in some agricultural production and can harness this more and more to add value to products within their borders. Those responsible for the design and promotion of African SEZs would do well to understand these trends as they relate to their countries and craft their strategic action accordingly.

Recommendations for aligning economic development strategies of African SEZs with broader economic trends are consistent with the lessons learned in this chapter, although the challenges incurred by many African SEZs are often more pronounced than in other regions of the world. For instance, many countries face

BOX 48
Revised SEZ strategy for South Africa

South Africa launched its Industrial Development Zone programme in 2001 with the primary objective of attracting FDI in export-oriented activities. The programme had limited success, prompting the Department of Trade and Industry (DTI) to conduct a performance review. DTI identified the underlying causes of poor performance as: (i) a lack of strategic focus; (ii) an unclear policy framework; (iii) poor long-term planning; and (iv) lack of clarity and coordination between the respective responsibilities of government agencies and private sector stakeholders.

The performance review resulted in a revision of the policy framework (currently under review by other members of government), moving from a narrow focus on customs duties to a more comprehensive and industry- and location-specific development strategy, inclusive of a broader incentive package (e.g. 15 percent corporate tax rate and accelerated depreciation on buildings within the zone), business support services, cluster development and expedited regulatory enforcement. The draft bill also articulates a deviation from targeting purely export-based industries to ones that could service local and regional markets. It allows for various forms of SEZs to be developed, including free ports, FTZs, industrial development zones and sector development zones. There is reportedly ongoing debate about the role of the private sector in development, financing, operation and ownership of SEZs.

The revised strategy aims to customize each SEZ to the development potential of the region in which it is located. For example, it suggests that the KwaZulu-Natal (KZN) Northern Growth Corridor has a comparative advantage in agroprocessing of sugar cane, rice, coffee, cotton and subtropical fruits, whereas other areas such as the proposed SEZ at Dube TradePort would focus on air logistics services, possibly with an agribusiness focus.

The revised policy seems to account for many of the lessons learned from South Africa's experience with SEZs as well as from global experience. For zones with proposed agroprocessing emphasis, there will need to be alignment with policies impacting targeted supply chains and possibly investment in external infrastructure to facilitate access to raw materials and trade partners.

Source: Deloitte and Touche, 2013.

acute infrastructure challenges (both in the lack thereof and/or poor conditions of infrastructure and exorbitant construction costs), poor business environments, and low-technology and underproductive agriculture sectors. SEZs focused on agro-industrial activities require targeted action throughout the value chain to address these issues in order to succeed. With the right leadership, SEZs can be used as a catalyst to organize action around these critical issues. A case in point is the revised policy framework for SEZs in South Africa (see Box 48).

Reform initiatives from countries with relatively longer SEZ experience such as South Africa's strategic retooling of its SEZ policy framework and Kenya's targeting of the horticulture and floriculture subsectors in the Lake Victoria region, as well as recent interest in creating new agrofocused SEZs such as those in Botswana, Ethiopia and Sierra Leone, point to positive and growing trends. The SEZ model can be a useful development tool for African countries if tailored to enhance comparative advantage and integrated into a wider policy reform and value-chain strengthening agenda. It cannot be effective, however, without strong leadership, political will and adequate resources.

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Chapter 6
Agribusiness incubators

"We were out on the road a lot of the time, trying to interest investors and attract companies to the [incubation] centre [...] and in a joking way, because of all the chickens [of one of the tenant companies], we started calling it 'the incubator'."

Joseph Mancuso, founder of the first business incubator,
in an interview with the National Business Incubation Association (NBIA) Review

Entrepreneurs are crucial drivers of economic and social progress, as they represent key sources of employment, innovation and productivity growth. Consequently, governments are actively promoting entrepreneurship through various forms of support, including business incubators that provide mentor and advisory services to startups. In developing and emerging countries where agriculture is particularly important, some incubators focus on the agricultural and agribusiness sectors.

The objective of agribusiness incubators is to help agro-entrepreneurs to create and expand their businesses, not to give handouts. They discipline and guide agribusiness startups with high growth potential until their ventures are up and running. In doing this, the incubators seek to populate the agro-entrepreneurial ecosystem with startups that create and sustain high-value employment opportunities in agriculture and related sectors; create and disseminate innovative technologies and business models; recognize and cater to underserved areas; and help fill in missing links in the value chain with profitable business models.

BOX 49
Small businesses and incubators in the United States of America

Small businesses play a particularly important role in generating growth and employment in both developing and developed economies. In the United States of America, for example, small businesses generated approximately 50 percent of gross domestic product (GDP), 60–80 percent of new jobs and a large portion of American innovation in the economic growth period leading up to 2007. These businesses provide 50.2 percent of all non-farm wages. About half of the five million businesses existing in 2007 were startup companies. Incubators specifically target these companies and support their development.

Source: Hoffman and Radojevich-Kelley, 2012.

This chapter presents the main features of agribusiness incubators as a mechanism for increasing the likelihood of success and accelerating the growth of startup and small-scale agro-enterprises, many of which will bring to the market innovative technologies and business models.

The adoption of agribusiness incubators in developing countries is still limited compared with industrialized economies and experiences in other sectors, but there is interest in mainstreaming the use of these tools to foster entrepreneurship and innovation in agriculture.

A word of caution is needed. The relatively new focus on entrepreneurial growth has channelled large amounts of money towards incubators. Research on the subject is just beginning, so it is difficult as yet to ascertain whether such activities are really worth the investment. There is an absence of good data as to how governments and donors should support agro-entrepreneurs – should they prioritize incubators, competitions, training or government-backed venture capital funds? All these policy tools are flourishing but more research is needed to assess the outcomes achieved unequivocally.

6.1 AGRO-INCUBATORS – BASIC CONCEPTS AND DEFINITIONS

Definition of business incubators and agro-incubators

Business incubators were created as centrally managed multitenant buildings that leased space and provided services to new business ventures (Maxwell and Holtzman, 1997). Over time, the incubator concept has broadened to become an entrepreneurial development model that provides a "common environment to entrepreneurs where they have access to shared infrastructure, coaching, business and financial services, as well as linkages with the broader [business] environment" (*info*Dev, 2009). Moreover, the focus on zero-stage firms has often been expanded to include small-scale companies, regardless of their growth stage. As the context and challenges facing entrepreneurs change, new twists have been introduced to incubator programmes to support nascent businesses, such as the development of business accelerators (i.e. incubators that speed up the pace and intensity of the entrepreneurial support provided).

Business incubators can be multisectoral or target a specific industry or sector, such as agribusiness. *Agribusiness incubators* or *agro-incubators* specifically nurture newly born agrobased enterprises with high growth and competitive potential. At the core of these tools is the *promotion of entrepreneurship development and innovation through the provision of business support and pro-innovation services* (World Bank, 2011). Financial support is sometimes made available, although an incubator should focus on the incubated startup becoming a good business, and not on identifying finance as a priority – a good agribusiness will eventually find funding.

Agro-incubators may offer a number of services to their small business clients, including business development, market access and technology assessment services; financial services; and mentoring and networking. In addition, shared facilities and equipment are often provided to incubated firms. As incubators are usually created by local, regional or state entities, including universities, their goal is to create jobs and increase economic activity inside a specific geographic area (Katz and Green, 2009; Qian, Haynes and Riggle, 2011; University of Michigan *et al.*, 1997). Incubators often operate on the philosophy of buffering startup businesses from

the market environment and giving them room to grow in a space sheltered from market forces (Cohen and Hochberg, 2014).

Incubator initiatives or programmes

An agribusiness incubator can be established as a stand-alone undertaking or can be part of a broader initiative or programme that supports the creation and strengthening of a network of incubators. In the latter case, emphasis is placed on creating a collaborative community of business experts and resource facilities dedicated to enhancing the success of early- and expansion-stage agribusiness firms and farmers that receive critical support services, mentoring and flexible space in a dynamic business environment. The advantages of agribusiness incubator programmes *vis-à-vis* stand-alone incubators are that they can generate synergies to sustain the creation and expansion of entrepreneurial networks, while also offering participating incubators the opportunity to exchange information and learn from each other.

How do agribusiness incubators differ from other business incubators?

Agribusiness incubators often operate in complex and difficult environments, resulting from: (i) the high-risk component linked to the agribusiness sector (especially dependent upon the perishability of agricultural produce and its high price volatility); (ii) location in rural areas where infrastructure and support services are often lacking; and (iii) multidimensional links between agribusiness, food security, environment and poverty.

In addition, actors involved in startup agribusiness operations often lack the competencies and assets necessary to ensure the success of their businesses. As mentioned, a key aspect is that, whereas general business incubators are located in urban areas, agribusiness incubators are frequently to be found in rural or peri-urban contexts that lack or have poor basic infrastructure, and have weak connections with knowledge and entrepreneurial ecosystems. All these features influence other important variables, such as availability of credit and other financial services (World Bank, 2011).

Incubators are also common as elements of agropark, special economic zone (SEZ) and cluster initiatives.

Incubation process

The objective of the incubation process is to assist the entrepreneur in establishing a sound, market-focused business. A typical incubation process consists of *four phases*: pre-incubation, incubation, graduation and post-graduation.

In the *pre-incubation phase*, the potential startup business participant applies to receive incubator support. If the business idea presented and the entrepreneur characteristics are in line with the selection criteria adopted by the incubator, collaboration between the two parties begins. At this point, an analysis and validation process takes place through a series of consultations, feasibility and market studies, financial and risk analysis; business simulations are carried out in order to prepare a business plan.

The following phase is that of proper *incubation*, where the business idea is rolled out. This phase encompasses a pilot stage (pilot-scale technology demonstration, marketing strategy trial, trademark registration/patenting, barcoding, etc.), and a full-scale development stage that focuses on launching the technology/product and on fund raising. Startup is supported throughout this process by the provision

BOX 50
Timbali Technology Incubator pre-incubation programme, South Africa

The Timbali Technology Incubator has established a one-year pre-incubation programme during which clients are walked through a number of assessments needed to ensure the originality and technical, marketing and financial viability of the business idea. The incubator also assists clients to develop their business plan and fill in loan applications. In the pre-incubation stage, utmost attention is paid to mentoring creative ideas, defining technology needs and evaluating market and financial prospects. For those companies not yet legally constituted, this is usually the moment to do it.

Source: *info*Dev, 2014a.

of equipment, facilities and office space, as well as various services (administrative services, technology assessments, financial services, fund raising, mentoring, networking, training, etc.).

This phase ends with *graduation* of the business, after a period usually defined in the agreement signed by the business and the incubator. This is the moment to revise the business plan, introduce measures to consolidate presence in the market and put the accent on the facilitation of linkages to financial markets and networks, particularly those focusing on technology and market development. At this point, the startup business needs to be able to engage with potential buyers and sell their products; survive without incubator support; put in place a realistic action plan; and expand after graduation. Only when a large number of startups achieve these results can the incubator demonstrate its effectiveness and attract other clients. It is to be expected that a fraction of the business incubated will die out or meander on, but the goal of the incubator should be to help more to succeed and/or to succeed better.

In the *post-graduation* phase, the role of the incubators is limited to monitoring the performance of the graduate, to providing follow-up training and business support, and sometimes to encourage alumni network. The success of the graduate depends crucially on how well integrated the firm is into the broader business ecosystem. This level of integration, in turn, derives from the networking abilities of the incubator to help startups develop strong linkages with input suppliers and customers.

6.2 RATIONALE AND EVOLUTION OF AGRIBUSINESS INCUBATORS

Entrepreneurship and innovation: two-pronged rationale of business incubators

Many studies have been conducted to identify the foundations of business incubators (Hackett and Dilts, 2004a, 2004b; Böhringer, 2006). They conclude that agribusiness incubators hold the twofold promise of engendering agro-entrepreneurial development and stimulating innovation.

Agro-entrepreneurial development

The most common justifications cited in the literature in support of incubators are that they contribute to economic development through entrepreneurship and help

startup firms gain competitive advantages by reducing transaction costs (Hackett and Dilts, 2004b).

(Agri)business incubators increase the chances of survival and growth of newly launched businesses, particularly in the area of agribusiness where risks are particularly high. They do this by providing discipline, technical advice and coaching, and facilitating access to networks and services and adapted finance (risk capital). Economic growth depends on the entrepreneurial process of conceiving new firms and facilitating their market-based survival. However, in many countries and sectors, 80–90 percent of entrepreneurial new businesses fail within the first 18 months. In the United States of America, only 43 percent of new firms are still operating five years after their debut (Shane, 2012). Most developing countries have even less encouraging startup survival rates. Business failures are caused by a combination of operational, technology, market and financial risks. The agricultural sector faces additional risks besides those just mentioned, namely climate change and biological risks (pests and diseases), which also affect the probability of survival. These statistics can be improved if startups are hand held, mentored and trained during their first years of operation – precisely the role of business incubators.

Incubators moreover represent a critical platform for helping enterprises to grow and sustainably scale up their operations. Incubating these firms can generate positive, long-term impacts on the economy of developing countries, where SMEs contribute up to 33 percent of GDP and 45 percent of employment (IFC, 2010).

Business incubators operate as clusters of startups, whose development is guided and supported in order to increase their survival rate. Through clustering, incubators foster shared knowledge, people connectivity, networks and repeated transactions, and thus build trust among players while reducing transaction costs.

On the basis of these two arguments, business incubators can then be seen as tools to address market failures within a specific geographic area. These market failures may include, *inter alia*, the young firms' lack of affordable work space, facilities, services, and access to finance and information. Publicly funded business incubators in the European Union, for example, mainly seek to address market failures as part of bottom-up approaches – as opposed to previous exogenous top-down approaches – based on "maximizing the indigenous potential for economic development" (European Commission, 2002). As Vázquez-Barquero (2006) explains, endogenous development approaches are territorial by definition, referring to "the capital accumulation process of specific localities and territories". In this picture, entrepreneurial and organizational capabilities are considered crucial for development. From such a perspective, incubators are economic policy tools to promote the entrepreneurial skills of a determined community in a defined territory, ultimately contributing to the development of that territory.

Contribution of incubators to the entrepreneurship ecosystem

Business incubators can be instrumental in strengthening the entrepreneurship ecosystem, defined as a set of interdependent actors and components within a territory that influence the development and trajectory of the entire community of actors and potentially the economy as a whole (Spilling, 1996). The agents of such an ecosystem interact to generate new ventures and sustain the growth of startups over time. The entrepreneurship ecosystem is described in varying ways, typically

variants of the six elements described by Isenberg (2012): markets; finance; human resources; culture; support and policy. The WEF uses a variant comprising seven pillars: accessible markets; human capital workforce; support systems; regulatory framework and infrastructure; education and training; universities as catalysts; and cultural support (WEF, 2013). The presence of these pillars in a geographic location can lead to a rapid surge in entrepreneurial activity. Business incubators are part of the "support systems" pillar, which includes not only incubators but also other mechanisms for providing mentorship, advisory and professional services, and building networks of entrepreneurial peers.

How incubators fit into entrepreneurship initiatives

Successful public investments in entrepreneurial ecosystems require two key ingredients. One is recognizing the importance of a comprehensive strategy for supporting the ecosystem. Incubators represent one possible mechanism but can and should be delivered with other complementary tools, such as business development services (BDS), investment funds and agricultural development centres (ADCs) (see Box 51) in order to activate the ecosystem jointly and increase impact.

The second ingredient involves the systematic gathering and incorporating of inputs from entrepreneurs, otherwise public sector interventions run the risk of leading to outcomes that fail to support or may even hinder entrepreneurial activity – the opposite of the originally intended effects. The more that policy-makers understand the priorities of agro-entrepreneurs, the greater the potential for policies to be better aligned with the entrepreneurial ecosystem.

BOX 51

Agricultural development centres and agribusiness incubators

Agricultural development centres (ADCs) are not incubators, but some of their functions are similar. ADCs serve farmers, livestock producers, beekeepers and fishers, as well as rural populations in general. Their functions embrace agricultural and agribusiness training and extension services; transfer of new technologies and strategies to increase performance and use natural resources more sustainably (e.g. fostering the proper use of inputs through distribution of newly developed technologies such as chemical fertilizers, chemical pesticides, hybrid seeds and farm machinery); support for reducing farming costs; and agricultural marketing and management support services, among others.

ADCs can also establish demonstration plots in farmers' fields to illustrate the impact of new technology in improving farm productivity. They offer general agricultural and agribusiness assistance to any farmer or agribusiness firm that contacts them for help, unlike incubators that serve only those selected clients accepted for incubation. Another difference is that ADCs work with any small business at any stage of development, and not only with startup companies.

Source: authors' elaboration.

Fostering innovation

Agribusiness incubators are an effective way of developing and establishing an innovation ecosystem for agricultural development, i.e. a community of partners or organizations with complementary resources that shares the functional goal of enabling agricultural innovation and technology development and/or transfer. A large number of agro-incubators focus on adapting and diffusing technology (see examples of technology-oriented agro-incubators discussed in section 6.3). Agro-incubators are conducive to agricultural innovation notably because of the combination of entrepreneurs with multidisciplinary, experienced teams of experts and mentors, together with knowledge and research organizations and investors. In fact, many agribusiness incubators are affiliated with public and private sources of research and knowledge, such as research centres and universities that are engaged in research and development (R&D) and technology transfer, science and technology parks (Chapter 4), and clusters of companies with R&D capacity (Chapter 3).

Innovation is incentivized by the so-called "celebration factor" that pervades the incubator model. Incubators encourage their client firms to become more creative, come up with creative solutions and take calculated risks. Incubators train startup businesses to reframe mistakes and even failures as lessons learned. This is part of the process of learning how to run a business and gives a business confidence to celebrate success. The process creates a culture of innovation and business growth, which will eventually translate into productivity and profits.

Nevertheless, not every successful new business has to be innovative – in a value chain context there are many opportunities for replicable business models, for example. The role of the agribusiness incubator in this context will be that of promoter of an investment package (usually tied to bank financing) that offers private investors (often small-scale farmers and companies) an opportunity to invest in an agribusiness to tap profitable gaps within a value chain (Webber and Labaste, 2010). It is similar to franchising in many ways. The replication factor does not preclude entrepreneurial harnessing of innovation through the win-win combination of agribusiness investments privately owned and operated, supported by the incubator's mentoring and advisory services. The role of the Pakistan dairy industry in promoting investment in small dairy collection/cooling businesses is an example.

History and stages of development

History of adoption of business incubators. Stretching the idea, apprenticeships and early department stores can be perceived as incubators of a kind. However, the first business incubator in the strict sense opened its doors in 1959 in Batavia, New York, United States of America. Joseph Mancuso, a local real estate developer, bought a building in Batavia left vacant after a large corporation had closed down. After several failed attempts to find a single tenant interested in the entire block, he decided to divide the complex in portions and lease them to different tenants while also offering business advice and support. Within a few years, he launched several new local businesses engendering thousands of jobs. Among the first tenants were some agribusiness entrepreneurs (in particular, a winery and a chicken company); therefore, the Batavia initiative may be considered the first-ever agribusiness incubator (NBIA, 2015).

In the 1960s, the business incubator concept grew in the United States of America, mainly linked to government-sponsored projects. In the 1970s, the

United Kingdom and other European countries timidly established some business incubators, and the National Science Foundation (NSF) adopted the concept of incubators as a means to commercialize technological innovation in the United States. However, *global* uptake of this concept was not swift. In the early 1980s, the largest number of incubators in operation, a mere dozen, was still in the United States of America.

The real boom started in the 1980s, driven by three main events: (i) strengthened legal recognition of property and intellectual rights; (ii) rising profitability of biomedical research; and (iii) passing of the Bayh-Dole Act,[50] which lowered the uncertainty associated with commercializing the results of federally funded research.

In the same period, business incubators had massive diffusion in Europe through the propagation of innovation centres, technopoles and science parks, and started to spread all over the world. In 1984, the European Commission established the European Business and Innovation Centre Network (EBN).

South Africa and China were the first emerging economies to join the wave of business incubator promoters, in 1985 and 1987, respectively. The Chinese incubator was supported by the United Nations Development Programme (UNDP), an institution that played a key role in disseminating the business incubator model worldwide (Maxwell and Holtzman, 1997).

During the 1990s and 2000s, the incubator concept continued to be diffused in Africa, Asia and Latin America. Brazil launched its first incubator in 1990 and the Republic of Korea followed suit in 1993. Egypt established a network of incubators in 1992 and Indonesia established three pilot incubators in Java in 1994, in both cases with UNDP support. In 2007, *info*Dev, a global multidonor programme of the World Bank, launched two networks of business incubators, one in the Middle East and North Africa (MENA) region (MENAinc) and another in sub-Saharan Africa (African Incubator Network [AIN]). In Japan, investments in business incubation peaked in the mid-2000s in response to the Government's stimulus policy to make the national economy more entrepreneurial, particularly through support to university startups (Ibata-Arens, 2011).

By end-2013, there were more than 9 000 business incubators worldwide – 1 400 in North America, 1 300 in Europe, 1 000 in Asia, more than 400 in South America, and more than 50 in both Africa and the Middle East (Ryzhonkov, 2013b).

Stages of development of the model. According to Lalkaka (2001), Bruneel *et al.* (2012) and other sources, the business incubator model has experienced an important evolution over time (Ryzhonkov, 2013a). Three generations of incubators can be described:

- *1950–1980*. First-generation incubators focused on the provision of office space, and shared resources and administrative services.
- *1980–mid-1990s*. Second-generation incubators emphasized the business support element. They increased business support services (training, coaching, mentoring and knowledge-based services), with a view to accelerating the learning curve.

[50] Also known as the Patent and Trademark Law Amendments Act (Pub. L. 96-517, 12 December 1980).

- *Mid-1990s to date*. Third-generation incubators attach great importance to networks and legitimacy. Incubators of this generation seem to focus more on networking to facilitate access to external resources and knowledge, and on building up legitimacy and credibility. Agribusiness accelerators fall under this category.

Bruneel *et al.* (2012) clarify that these changes are more attributable to the demand than the supply side. Although first-generation business incubators already provided business support and network services, and second-generation ones also facilitated networking, there were remarkable differences in the way service portfolios were used by incubator tenants at different moments. In other words, the main difference between first- and second-generation incubators did not lie in the services offered, but in those effectively requested and used by tenants. Tenants of first-generation incubators identified the provision of shared space as the most beneficial feature. Renting office space with shared resources helped them to exploit economies of scale and reduce costs. In the 1980s, as business incubators became popular, especially in relation to high-tech startups, demand for additional business support services increased. These new firms, indeed, often lacked the skills and experience to compete in the changing environment. It was in the 1990s that networking facilitation grabbed the attention of incubator tenants, as increasing market pressure and competition pushed companies to look for new partnerships and clients.

A type of third-generation incubator called "business accelerator" has rapidly proliferated across the globe since 2005, when the largest and oldest accelerator, the Y Combinator, was established. In less than a decade, the Y Combinator has helped generate over US$1.6 billion in follow-on funding for its 566 alumni companies, and helped to launch successful companies such as Airbnb and Dropbox. Close behind is TechStars, which has developed a chain of accelerators and set up international networks. In some cases, a traditional incubator approach is used for a relatively longer period of time to accompany the initial stages of startups, after which some of the graduated firms can access an accelerator programme that intensifies business support for a short period (a few months to a year).

History of agribusiness incubator adoption. Generally speaking, first- and second-generation business incubators had a multisectoral scope. Many of them had several agribusiness ventures among their clients. Cases in point are the SME-focused network of incubators (the "industrial hive") launched in South Africa in 1985, and the multipurpose Chinese incubators developed since 1987 under the UNDP scheme.

Dedicated agribusiness incubators are quite recent. However, relevant exceptions can be mentioned, two of which are from the United States of America. The first dedicated agribusiness incubator, known as the "Kitchen Center", was set up in Spokane, state of Washington, in 1985, and a network of rural incubators, assisted by the Business Innovation Centre (BIC), was established in 1987 in Mobile, Alabama (Maxwell and Holtzman, 1997). The "Kitchen Center" combined a food production facility used by entrepreneurs to prepare prototype products or limited production runs (until the volume of production was such that it made sense to set up their own facilities), with the provision of support on product development, marketing, shelf-life and compliance with product labelling regulations. BIC supported the creation

of networks of rural incubators in Alabama and Mississippi. These satellite incubators consisted of multitenant buildings providing shared facilities and equipment for entrepreneurs, who were assisted weekly by a team of professionals from BIC specialized in business management, market research and financial services. Another exception is the *Parque de Desenvolvimento Tecnológico* (PADETEC) in Brazil, which constitutes one of the first agribusiness incubator experiences from emerging countries. Set up in 1990, PADETEC provided incubation services to agribusiness enterprises involved in the commercialization of natural products, medicinal plants, biochemical and food products, essential oils, etc. (Maxwell and Holtzman, 1997).

The number of agribusiness-focused incubators has substantially increased since the mid-1990s (European Commission, 2002), especially in developing countries. Examples include the Incubator for Agribusiness and Agroindustry (IAA) of Bogor Agricultural University (IPB), Indonesia, founded in 1995; CENTEV/UFV Technology Incubator, set up in Viçosa, Brazil in 1996 (focused on agribusiness and biotechnology, but also on information technology (IT) and other technology companies); TechnoServe Incubator of Mozambique (1998); Villgro Innovations Foundation in India (2001); Agribusiness Incubator (ABI) at the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) in India and Uganda Industrial Research Institute (UIRI), both established in 2002; Timbali Technology Incubator and eGoLiBio in South Africa (2003); and Malaysian Life Sciences Capital Fund (MLSCF), established in 2006 (World Bank, 2011).

6.3 INCUBATOR TYPOLOGY

Agribusiness incubators may differ widely from one another. Differences may relate not only to their mission, sectoral focus, business model used and services delivered, but also to financing path, time line, ownership, sponsorship and institutional affiliation (Hackett and Dilts, 2004b; Bøllingtoft and Ulhøi, 2005; Grimaldi and Grandi, 2005; Bergek and Norrman, 2008).

Criteria for classification of agro-incubators

1. **Sector orientation.** Some incubators focus exclusively on the agrifood sector (*specialized agribusiness incubators*, whereas others support the growth of enterprises across a number of sectors, including agriculture (*mixed portfolio business incubators*). The latter targets agribusiness companies as well as firms from other sectors, so long as their businesses show potential for scalability. For instance, the Villgro incubator in India is of the mixed portfolio category since it includes agribusinesses as well as businesses in health, energy and education (Villgro, 2015). On the other hand, ABI, set up by ICRISAT, exclusively serves the agribusiness sector (*info*Dev, 2014b).
2. **Thematic thrust.** Agribusiness incubators can be identified according to their thematic drivers: (i) incubators that foster the development of agricultural value chains and subsectors; and (ii) incubators working towards the transfer and commercialization of agricultural technologies (World Bank, 2011).
   - *Value chain/subsector-focused incubators* include farm-to-market chain franchisors such as the Timbali Technology Incubator in South Africa (*info*Dev, 2014a). Timbali uses a franchise business format that enables

small-scale farmers/entrepreneurs to deliver consistently non-traditional high-value agricultural products such as fresh flowers. In practice, through focused support to agribusiness startups along the flower value chain in the Mpumalanga region of South Africa, Timbali fosters a clustering process that increases economies of scale. The Fundación Jalisco incubator also follows a value chain approach, initially centred on berries but currently being expanded to olive oil and cheese chains (*info*Dev, 2014c). (For further information on Fundación Jalisco, refer to the section 6.4.)

Other incubators deal with subsector development, such as the TechnoServe Incubator in Mozambique, which nurtures the development of entire subsectors (cashew, poultry and bananas) through the provision of BDS (*info*Dev, 2014d). Another example of subsector-oriented incubator is MLSCF, which concentrates on creating an advanced biotechnology sector and on supporting local biotechnology companies (*info*Dev, 2014e). Similarly, eGoLiBio (South Africa) supports the development and creation of sustainable enterprises in the biotechnology sector (eGoLiBio, 2015).

- *Technology-oriented incubators* embrace formats that focus on commercializing agricultural research facilities and those that concentrate on technology transfer. The first type of incubator works on facilitating the flow of already existing technologies from research partners (national or international, e.g. ICRISAT) to incubated firms. These incubators are usually affiliated to the originating institution for research, namely research centres (such as ABI-ICRISAT in India) and universities, for example the CENTEV/UFV Technology Incubator affiliated to the Federal University of Viçosa (UFV) in Brazil, and IAA-IPB in Indonesia (*info*Dev, 2014h, i). The latter cases will be explored later in this chapter.

  Other incubators pay attention mostly to low- or high-tech technology transfer. A case in point is Villgro, an agribusiness incubator in Chennai, India, whose strength is the provision of appropriate and affordable low-tech technologies that match agro and rural requirements. Some examples of technologies commercialized by Villgro's incubated companies include high- performance beekeeping and market solutions for single-origin honey, rapid milk chilling equipment deployed in villages with unreliable grid power and solar cold storage technology to reduce agricultural post-harvest losses (Villgro, 2015). Other incubators are oriented towards medium or high technology. For example, MLSCF is an incubator that specializes in the transfer of advanced biotechnology in agriculture and related areas. Some of the biotech innovations supported by MLSCF deal with plant nutrition, biopesticides and bioyield enhancers (MLSCF, 2015).

3. **Time line.** Business support organizations can also be differentiated according to the duration and intensity of the support provided to startups.
   - Traditional business incubators work on the middle and long term, with incubation periods lasting from two to four years (and sometimes longer if capital investments are made in the incubated firms).

- Business accelerators provide intense, short-duration support (typically up to six months) to firms that are usually grouped in small teams, batches or classes, rather than on an individual basis. Accelerators reflect the changing context in which businesses operate, including a more restricted investment environment and a growing importance of networks in order to succeed. They bring startups up to speed, provide mentors and access to a rich network of relevant contacts, and afford credibility for new businesses. By requiring startups to attend their short programmes, accelerators provide a fast-paced, intense environment that motivates founders to develop their businesses and prepare their pitches to potential investors from the start (The Economist, 2014).

  Cohen and Hochberg (2014) define an accelerator as "a fixed-term, cohort-based programme, including mentorship and educational components, that culminates in a public pitch event or demo day". Given that accelerators assist their clients for a limited time only, they are used especially in sectors with high and fast growth potential.

4. **Agribusiness incubators may direct their services to various audiences**
   - Some agribusiness incubators target startup agro-entrepreneurs and SMEs in general, without fixing on a particular profile, so long as their businesses are viable and have high-growth potential.
   - Other incubators orient their services to meet the needs of actors throughout all prioritized agrifood value chains. The Timbali Technology Incubator offers shared infrastructure (for on-site clients) and shared services (e.g. bulk buying and selling, business training, access to finance and collective marketing, branding and advertising under the trade name Amablom) to all actors involved in the cut flower value chain – entrepreneurs engaged in nursery activities, packaging and commercialization, as well as market-oriented farmers interested in diversifying from traditional crops into the fresh flower industry (*info*Dev, 2014a). Similarly, TechnoServe of Mozambique supports enterprises along entire value chains, including farmers, to increase their productivity (*info*Dev, 2014d).
   - Many incubators affiliated to universities and research centres scout their potential client startups among their pool of university graduates and researchers. The CENTEV/UFV Technology Incubator primarily focuses on university researcher and student startup enterprises, on the basis of its affiliation with UFV (*info*Dev, 2014h).
   - Some incubators target disadvantaged groups. The South African Timbali Technology Incubator, for example, was primarily established to empower black, female entrepreneurs and related enterprises: 94 percent of total clients belong to this category (*info*Dev, 2014a). Similarly, the New Partnership for Africa's Development (NEPAD) is in the process of developing several business incubators to promote women's empowerment. Equally, the Villgro Innovations Foundation supports grassroots enterprises and rural innovators with high potential to create social benefits for rural people who earn between US$2 and US$4 a day.

- Some incubators have other incubators as clients. This typology is classically referred to as an "incubator of incubators". A case in point is ABI-ICRISAT in India, which provides mentoring and business services to other incubators across India and other developing countries (*info*Dev, 2014b). Fundación Chile has supported other "one-stop" agribusiness sector development incubators, namely Fundación Jalisco, Fundación Peru and Fundación Sonora.

5. **Sponsorship and institutional affiliation.** Many differences can be found regarding the institution that carries out the role of incubator as well as the form of collaboration behind the incubation service. The main driver of an agribusiness incubator may be any of the following.
   - *A governmental institution*: the UIRI incubation model is entirely government funded (*info*Dev, 2014g);
   - *A donor*: 85 percent of Villgro's funding comes from donors. They also contribute 98 percent of funding for the TechnoServe incubator in Mozambique.
   - Some, and perhaps the best-known business incubators and accelerators are funded and led by the *private sector*, such as in the case of Flat6Labs in the MENA region (see details in section 6.4).
   - Many agribusiness incubators increasingly operate as *PPPs*, as in the case of MLSCF.
   - Agribusiness incubators may follow a scheme of strategic affiliations, for example, to a *public university* and typically in combination with additional *government support*. The case of the CENTEV/UFV Technology Incubator is a good illustration of this category: its operation is co-funded by UFV and state agencies (through grants and fellowships), complemented with rental fees paid by incubated firms. More information on this type of incubator is given in a later section.
6. **Business model.** Agribusiness incubators can be established as profit or non-profit incubators and may have different financing modalities: (i) revenue from tenants and other clients (i.e. levy of rental and service fees); (ii) capital gain models, where revenues derive from sharing equity or having royalty agreements with incubated agribusinesses; and (iii) public funding.
   - *Revenue-generation incubators* do not take an equity position in their clients' businesses, but offer a service to the client for a fee. Revenues include rental, service and consulting fees.
   - *Equity incubators* purchase shares in the client's business prior to admittance into the incubator. This is a requirement for admittance and the equity stake may vary depending on anticipated growth potential and other factors. These include *capital gain models* based on equity investment, profit sharing or property rights and royalties on technologies.
   - *Government and/or donor funding*. In some cases, incubators remain completely or mainly dependent on some kind of long-term subsidized financial support from government, donors and/or other organizations. If no additional revenue streams are envisaged over the medium or long term, the incubator runs the risk of closing, should the above funding be discontinued (Ayers, 2012).

7. **Residential, non-residential and virtual incubators**
   - *Residential incubators* require their clients to reside in the incubator space and operate their business from that shared facility. Depending on their arrangement with the client, they may charge the market rate (or slightly below) for the operating space used or it could be offered to the client without charge. This can be a tremendous help to new startup businesses that are often operating on a very tight budget.
   - *Non-residential incubators* focus on the services offered to help clients expand their business. They may have some office or meeting space that can be used on an as-needed basis, but the focus is not on space.

TABLE 16
Types of agribusiness incubators

Category	Types	Focus/main features
Sectoral portfolio	▪ Specialized agribusiness incubators ▪ Mixed portfolio business incubators	▪ Specialized in supporting agribusiness firms ▪ Clients operating in various sectors, including agriculture
Thematic focus	▪ Agrifood chain/subsector development incubators ▪ Technology transfer and agricultural research commercialization incubators	▪ Support to actors in one or more chains or subsectors ▪ Focus on commercialization and transfer of agricultural technologies
Time line	▪ Incubators ▪ Accelerators	▪ Provision of medium- or long-term support ▪ Provision of short-term support (up to six months)
Sponsorship and institutional affiliation	▪ Public incubators (e.g. public university-led incubators) ▪ Private incubators ▪ Public-private incubators	▪ Mostly public sector driven and financed (by governments or donors) ▪ Mostly private sector driven and in part self-financed ▪ Public-private driven and in part self-financed
Business model	▪ Revenue generation incubators ▪ Capital gain incubators	▪ Revenues generated from facility rental fees, service and consulting fees, and/or franchising ▪ Capital gain modalities, e.g. equity, profit sharing and royalties from intellectual property rights
	▪ For profit incubators ▪ Non-profit incubators	▪ Incubators that do earn profits for owner(s) ▪ Format of a non-profit organization that is permitted to generate surplus revenues, which must be retained by incubation for self-preservation and/or expansion
(Non-) residential arrangement	▪ Residential incubators ▪ Non-residential incubators ▪ Virtual incubators	▪ Clients located in incubator premises/ physical space ▪ Clients obtain advice from incubators without actually being located in the incubator site/services often offered in incubator physical space ▪ Incubation services offered virtually, i.e. independent from physical infrastructure and geographic location

Source: authors' elaboration.

For instance, the team of experts of the Timbali incubator pay periodic visits to non-residential incubated entrepreneurs in their farms or greenhouses.

- Finally, *virtual incubators* offer support from incubator experts through a virtual platform using electronic means. Virtual incubators are frequently an extension of physical incubators operating either on a residential or non-residential basis (or a combination of both formats). Virtual incubators benefit entrepreneurs in remote locations or those who do not want to relocate to the area where the incubator is located – for example, entrepreneurs engaged in a business activity that requires access to agricultural land.

Each of these categories offers a different perspective to achieve similar outcomes. A specific incubator may have a combination of some of these features. For instance, a technology transfer incubator may adopt a PPP format, and may choose to operate virtually and levy incubation service fees from its clients.

6.4 SURVEY OF SPECIFIC INCUBATION MODELS

Case 1 – Innovation- or technology-based, university-led agribusiness incubators

Many agribusiness incubators are university led. These types of incubator are being widely used to pursue objectives relating to commercialization of university research and upgrading of the technological capabilities of local agribusiness firms. They seek to strengthen university-industry linkages, also bringing the government on board to promote entrepreneurial spirit and innovation in agriculture.

Examples include the CENTEV Technology Incubator affiliated with UFV in Brazil; IAA-IPB, Indonesia; the incubator (and subsequent network of incubators) affiliated with the Monterrey Institute of Technology and Higher Education (Monterrey Tech), Mexico, which caters to the agribusiness, agrobiotechnology and other medium- and high-tech sectors; and the agribusiness incubator promoted by the Consortium for enhancing University Responsiveness to Agribusiness Development (CURAD) located on the campus of Makerere University in Kampala, Uganda.

Most tenants come from the ranks of college graduates and faculty staff (researchers, scientists, etc.) who want to start their own company, generally to develop and commercialize agricultural and food innovative technologies. The story of Ms Aprisusi, in Indonesia, is one such case. Today, she is the proud owner of a company with over 30 employees and US$2 million in annual sales that produces *nata de coco*.[51] After graduating from IPB, she became a resident at IAA in 1999. Back then, she had the business idea and the technological expertise, but no assets or managerial skills. With the support of the incubator, she was able to expand her business idea, and managed eventually to build her own plant, which is currently under expansion to branch out into the bottled mineral water business.

[51] *Nata de coco* is a chewy, translucent, gelatinous product made from fermented coconut water, used in bubble tea.

The flow of clients from the university community is particularly important in the initial phases of the incubator. For instance, the CURAD incubator has over 60 prospective startups at present, 80 percent of which are individual entrepreneurs from Makerere University, and the remaining 20 percent from other universities and the private sector. In a second phase, these incubators use the university's network and events (regular courses, promotional events, organized visits, etc.) to identify prospective clients. It is only at a later stage that these incubators find other venues to spot potential clients, independently from the parent institution.

The universe of tenants of university-owned incubators goes beyond the academic and alumni community, and may include other agribusiness startups and SMEs. Frequently, the client profile of these incubators is not only linked to the parent organization (university), but also to the mandate of other supporting institutions. For example, the support provided to IAA-IPB by the Indonesian Ministry of Cooperatives and SMEs naturally translates into many prospective incubator entrepreneurs being scouted through the Ministry's training and extension programmes. Moreover, expansion of the sponsorship base of this incubator resulted in a broadening of its scope to include the handicraft, leather and IT sectors, besides agribusiness. Similarly, the CURAD incubator, which was created as a PPP between Makerere University, the National Union of Coffee Agribusinesses and Farm Enterprises (NUCAFE) and the National Agricultural Research Organisation (NARO), specifically targets coffee-processing SMEs and other entrepreneurs along the coffee value chain.

The establishment of university-based agro-incubators seems to be a win-win strategy for both the university and the incubated firms. University-led incubators foster a smoother college-to-work transition – students receive support through the incubation programme to develop the management, technical and marketing hands-on skills needed to succeed in today's real world agribusiness. Other incubated startups can also reap manifold benefits from the incubator-university relationship. Incubated firms can tap the multidisciplinary knowledge of the faculty experts and research staff, and enjoy close collaboration with the university research programme to promote industrially relevant research in technologies, business applications and training. In addition, the incubated companies are given the chance of commercializing university research and utilizing the university's pilot agro and food processing plant for prototyping, limited production runs or for applied training.

In turn, universities see their prestige enhanced as a result of increased graduate employability, consolidated institutional image as an innovative leader in the academic sector, improved linkages with the business community and greater job satisfaction among faculty staff. Moreover, thanks to the incubator, the university can benefit from a diversified income source from industrially sponsored research.

Moving towards advanced incubator business models. The university-based incubators studied are at varying stages in their development. The CURAD incubator is as recent as 2013, whereas the first incubator of Monterrey Tech was established in 2001, and the IAA-IPB and CENTEV incubators date back to 1995 and 1996, respectively. Not much can yet be predicted about the CURAD incubator, but the other long-standing incubators have moved to virtual or mixed residential-virtual schemes. The CENTEV incubator offers virtual incubation services in the pre-incubation phase in addition to standard services. IAA-IPB assists more non-resident companies than resident ones. Monterrey Tech has also shifted its incuba-

tion model to a network of 34 business incubators located in 27 campuses all over Mexico. The Monterrey model offers physical and virtual modalities of incubation to entrepreneurs. In both cases, a Web site operates as a technological platform that provides an integral support service during the creation and first years of operation of the companies. The incubation network targets entrepreneurship in high-tech sectors, including agrobiotechnology and medium-tech sectors such as agribusiness.

Incubator funding: university contribution and external support. University-led incubators are mainly funded through the affiliated university's budget, which is usually tight and may impose limitations on incubator ability to perform well and expand. This explains why university-owned incubators habitually receive public and donor financial support to start and maintain their operations. The creation of the CENTEV incubator was almost entirely financed by the state of Minas Gerais. The incubator today is able to generate revenues to cover 40 percent of its annual costs. The rest is covered by funds from UFV, and contributions from the state government, the Brazilian Micro and Small Enterprises Support Service (SEBRAE) and the city hall. IAA-IPB is funded by university contributions, but also by government and development partners, notably UNDP. The CURAD incubator is financed by contributions from Makerere University and other PPP partners and also counts on support from the Universities, Business and Research in Agricultural Innovation (UniBrain) initiative funded by the Danish International Development Agency (DANIDA).

Performance to date. IAA-IPB has supported 77 businesses, of which 38 have graduated. The CENTEV incubator has graduated 24 incubated companies. In both cases, agribusiness companies seem to perform well (*info*Dev, 2014h, 2014i). The Monterrey Business Incubator Network has served over 3 000 projects in the past two years. These businesses have generated more than 6 000 direct jobs (2010–2011) (Tecnológico de Monterrey, 2015). Moreover, the incubator centre located on the Monterrey campus has managed to raise the survival rate of incubated business in operation for three years or longer to over 80 percent.

Case 2 – Fundación Jalisco: a non-residential, franchise incubator for value chain development[52]

Fundación Jalisco was established in 2007 as a private non-profit association to foster agribusiness incubation in the state of Jalisco, Mexico. Its incubation model is notable for being a non-residential incubator that uses franchise solutions to promote agricultural value chain development through the adaptation and transfer of innovations. As such, it can be considered an incubator variant, targeting replication of business models through new business formation.

As a *non-residential incubator*, Fundación Jalisco does not expect its clients to be hosted in the incubator central facility during the incubation process. In fact, as the majority of incubated entrepreneurs are small-scale farmers taking on a new crop promoted by the incubator, it is the incubator's experts who go to their farms to mentor and train them.

[52] This case study is mainly based on *info*Dev, 2014c. It summarizes the development of the incubator until the moment of this study, but later developments are not reflected here.

This incubator centres its strategy on *replicating high-performing business models*, similar to using a franchise system that aids in fast-tracking growth and success of new entrants to prioritized agrifood chains, namely berries, olive oil and cheese. This means that clients do not need to come up with their own business idea, since it is provided by the incubator in the form of a franchise affiliation, along with services and support to implement it.

Generally, this franchising model requires the incubator to make a large initial investment to identify competitive value chains and develop effective business models. Once the investment has been made, incubated farmers easily benefit from it. The incubator's initial investment includes: (i) conducting research to spot a potentially high-growth value chain that can be developed in the territory of influence; (ii) gathering facts on where market opportunities and inefficiencies lie in the value chain; (iii) accessing technical knowledge from world markets and adapting it to the local reality (in this specific case, to the circumstances of Jalisco's smallholder producers); and (iv) establishing efficient marketing channels and collective marketing models. Other collective efforts (e.g. collective input buying and sourcing of high-quality planting material) can be facilitated. Subsequently, knowledge generated is transferred to a large number of farmers through the incubation process, shortening the time between their initial contact with the new crop and their entry into the marketplace ready to conduct business. Farmers who join the franchise incubation programme have access to services beyond the typical incubation services (hands-on training on crop production and business skills upgrading), such as assured commercialization and genetically superior planting material adapted to local conditions (previously not available in the region/country) in the case of Jalisco's berry initiative.

In fact, Fundación Jalisco invested a large amount of resources in the initial phase. Once it had identified a window of opportunity for berries in the North American market, it verified the technical feasibility of berry production in Jalisco, taking into account prevailing edaphoclimatic and social contexts. Having run financial models to determine profitability, and risk management analyses, Fundación Jalisco imported berry plants from the United States of America and, with the support of the state government, created a nursery to grow seedlings. The next step was to reach for state-of-the-art industry expertise, liaising with Fundación Chile for technical assistance and business model design, and teaming up with VitalBerry (the Netherlands) for expertise in nurseries and commercialization of berries.

The wheels of the franchise incubation model were set in motion. In 2008, Fundación Jalisco launched its flagship berry programme to provide seedlings, training and technical assistance on blueberry cultivation good practices to a total of 800 incubated farmers. Additionally, it offered secured market channels for its incubated producers through its commercial arm, Comercializadora de Moras de Jalisco, supplying the United States of America, Europe and other markets. The programme was financially supported by the Jalisco government and the Mexican Secretariat of Agriculture, Livestock, Rural Development, Fisheries and Food (SAGARPA).

The third feature of Fundación Jalisco's incubation model is the concentration of resources on non-traditional agro and food value chains that show high potential in world markets. Fundación Jalisco believes in the benefits of the value chain approach and posits that agribusiness incubation is most successful when interven-

tions take place throughout the entire value chain. Fundación Jalisco has been able to nurture development from scratch of today's successful Jalisco berry cluster, through the provision of support to berry nurseries, berry farmers and other small and medium actors all the way to the market. Policy dialogue with the government has also been decisive in the successful development of the berry cluster.

Moreover, zeroing in on a number of competitive value chains is also a way for an agribusiness incubator to maximize the impact of its limited budget. This was what Francisco Cornejo, promoter and current president of the Jalisco incubator, had in mind when he tried to apply the Fundación Chile model to Jalisco. Mr Cornejo, who at the time was president of a rural bank in Jalisco, was impressed by the impressive track record of Fundación Chile in agribusiness incubation. He knew, however, that an agribusiness incubator in Jalisco would not have access to large federal and private funds. He was aware that "it would take a lot of investment, a lot of institutional development and lots of time to replicate [the incubation model of Fundación Chile in Jalisco]" and so introduced some twists to the original model (*info*Dev, 2012a). The Jalisco motto was to "start small". This reduced scope implied choosing one or two value chains, instead of supporting a myriad of agribusinesses regardless of their value chain affiliation (as Fundación Chile did). On the other hand, starting small meant triggering value chain development through the application of market proven innovations, instead of creating new ones, as in the case of Fundación Chile. Its ability to adapt to the context and develop its own way of conducting the incubation process has been one of the main keys for success of this incubator.

For Fundación Jalisco, the entry point in the value chain is the *adaptation and dissemination of a revenue-generating innovation* (introduction of new technologies, production processes, managerial practices and commercialization methods) that allow for the inclusion of small-scale producers in a sustainable manner. Once interesting market prospects have been identified, members of the Fundación Jalisco team visit agricultural research centres and farming organizations around the world to help identify existing innovations suitable for Jalisco's climate, soil and irrigation characteristics. This quest has led them to the olive groves of Italy, the kiwi fruit plantations of New Zealand and the goat milk cheese-makers of France. The next logical steps are to transfer these innovations to Jalisco by way of collaborating with world leaders in the respective industry/value chain, and to adapt them to local conditions by joining efforts with local and national public and private institutions.

Finally, part of the success of the Jalisco incubator is attributable to its *capacity to create networks with interested and crucial stakeholders.* In this sense, the relationship with Fundación Chile helped in developing Jalisco's institutional model as well as in obtaining financial and technical support. Moreover, Francisco Cornejo's business affiliations helped Fundación Jalisco enormously in creating its own networks.

Case 3 – Flat6Labs: a business accelerator programme in the Middle East and North Africa region

Business accelerators, a third-generation type of business incubator, have rapidly proliferated across the globe. Their estimated number exceeds 2 000. Jed Christian-

sen, a Google employee based in London, tracks 182 accelerators and found they have supported more than 3 000 startups. These startups have raised US$3.2 billion in follow-on funding and generated "exits" (sales or buyouts) worth US$1.8 billion (The Economist, 2014).

One of these new accelerators is Flat6Labs, a regional accelerator programme that supports and invests in entrepreneurs and their startups in the MENA region. It currently operates in two locations, Jeddah and Cairo.

Flat6Labs Cairo was launched in 2011, the first Flat6Labs office in the MENA region, as a partnership between the Business School of the American University in Cairo and Sawari Ventures, an international venture capital firm that invests in the region. Its two founders, Mr Hany Al Sonbaty and Mr Ahmed El Alfi, also founders of Sawari Ventures, launched Flat6Labs as a vehicle to nurture the entrepreneurial ecosystem in the region. In Egypt, as in the rest of MENA, the elements of a healthy entrepreneurial ecosystem are lacking or immature. These include an entrepreneurial culture, regulatory framework, infrastructure, presence of equity investors, financing for SMEs and formal education in entrepreneurship (WEF, 2011a). With US$1.2 million in seed funding from Sawari Ventures, the partnership launched Flat6Labs and focused on four critical elements: *business skills* and *mentorship*, plus *financing* and *co-working space*.

As with most accelerators, Flat6Labs has a highly selective process that includes an application and initial interview. The 20 top applicants participate in a five-day boot-camp workshop where their business ideas and entrepreneur talents are assessed. From this group, six startup businesses are selected for each cohort by a selection committee that includes a diverse group of partners, industry experts, entrepreneurs, mentors and investors. After selection, the businesses complete the registration process that includes signing term papers, company registration and legal agreements. Startups are then ready to begin operating as fully fledged incorporated businesses.

Flat6Labs typically provides US$14 000–15 000 in seed funding in exchange for equity in the client company (10–15 percent). This seed funding helps startups to cover early expenses, define their product, develop their core application and commercialize their enterprise. During the four-month programmes, the accelerator assists each business to develop their core business model, build a prototype and acquire customers. Most startups will have already market tested and validated their product but, if not, they are encouraged to do this during the first month in the accelerator. Early interaction with market forces is considered to be crucial in accelerators, as it provides vital information regarding product demand and viability.

During the cycle, each startup has access to an overarching network of mentors, investors, industry experts and consultants. Businesses work in the Flat6Labs office space, have the opportunity to work with other entrepreneurs at a similar stage and participate in business education workshops and training sessions. Mentors are a critical component for startups and a key component in the Flat6Labs programme, and are strategically linked to each business. Mentorship includes help with logistics, technical issues, attracting a customer base, hiring employees and presenting to investors. Another key part of the programme is training. The programme includes focused training sessions from industry experts, corporate leaders and academic

institutions in order to offer best practices, tools and relevant resources for startups. The programme also provides them with other perks and benefits from its membership in the Global Accelerator Network, other partnerships, and sponsors such as Microsoft, PayPal and Amazon Web Services.

Flat6Labs provides entrepreneurs with legal consultation, support and services through lawyers specialized in dealing with startups; access to a network of entrepreneurs, investors, business and technology services; and provides exposure and credibility. Networking helps businesses to develop their own support network of mentors, partners, investors, developers, customers and friends.

Ramez Mohamed, Chief Executive Officer (CEO) of Flat6Labs in Cairo, considers the accelerator's growing network to be the most valuable component for programme participants. For him, the network is the backbone to the entire programme as its relationships with local and international industry experts, companies, CEOs, managing directors, academic institutions, innovators, media, service providers, governmental entities and Non-governmental Organizations (NGOs) serve as a critical source of support for newly launched businesses (Mohamed, 2014).

The cycle ends with a Demo Day, where teams are given the opportunity to showcase their products to potential investors (venture capitalists, angel investors, investors and entrepreneurs), mentors, partners and the media. Promising startups will receive additional funding from Flat6Labs to establish the enterprise in exchange for more equity. As alumni, companies continue to be part of the Flat6Labs network and have access to mentors, the network, support and workshops. Monthly events, semiannual gatherings and ongoing follow-on support assist alumni companies after they graduate from the programme.

Performance and criteria for success for Flat6Labs include the number of "exits", recovering initial investment in the companies, number of jobs created, percentage of startups funded and amount of follow-on funding raised. The accelerator reports that it has trained 160 entrepreneurs (in diverse sectors, including agribusiness), recruited more than 80 mentors, facilitated funding for 50 percent of its startups and created more than 400 jobs in 12 cycles (Flat6Labs, 2015). It is too early to evaluate certain indicators (exits usually occur after three to five years) or the sustainability of the companies. Nevertheless, Flat6Labs staff report an improvement in the quality of applications and in the business ecosystem.

Plans include a replication of the model to other cities (such as Abu Dhabi) and vertical expansion towards a focus on certain market sectors (possibly e-commerce, hardware and agribusiness). In the agribusiness sector, numerous businesses have been found, but little support – basically a very immature ecosystem. Replication needs include an education partner and investors/sponsors to manage operations and provide seed capital for the accelerator as well as a local partner that knows the region well, and a network of willing mentors.

Role. Accelerators are varyingly described as incubators, a new form of business school and investment firms. They have provided new companies with an alternative way to generate startup capital, especially important after the recession of 2008 that limited the ability and willingness of banks and other traditional sources of funding (angels, family and friends, ventures) to do so (Hoffman and Radojevich-Kelley, 2012). Mainly led by experienced, successful entrepreneurs, accelerators also provide entrepreneurial education for new business leaders.

As accelerators are characterized by close linkages with market forces and an ecosystem, and are usually run by experienced entrepreneurs, they aim to reduce the failure rates of incubators, which often did not have these characteristics.

6.5 GUIDELINES FOR ESTABLISHING AGRIBUSINESS INCUBATORS

When to establish agribusiness incubators

The role of agribusiness incubators is fundamentally that of enabling startup and growth of agribusiness companies. Consequently, incubators represent a frequently chosen tool for policy-makers and development stakeholders interested in stimulating entrepreneurship and innovation in value-added agricultural activities, and mitigating obstacles and constraints that impede the development of newly created, and potentially successful, agrobased enterprises. Incubators are particularly useful when the goal is to promote youth entrepreneurship and employment in agribusiness.

With the scope of entrepreneurial development and innovation in mind, agribusiness incubators strive to demonstrate the profitability of new business models in the agricultural sector, communicating this information to those potentially interested. Once selected, incubated companies are mentored and supported in the form of assets, finance and skills building. Other critical contributions to the success of incubated firms are the provision and diffusion of reliable and credible information on innovation and value addition, based on accurate research and market studies (World Bank, 2011).

The incubator model may be particularly appealing to countries with high rates of generic entrepreneurial spirit, but especially of nascent (pre-start) entrepreneurship and early-stage entrepreneurial activity,[53] combined with a high proportion of discontinuation of business (Amorós and Bosma, 2014). These features tend best to fit the conditions of factor-driven developing and emerging economies. Incubators can help make a difference not only in creating more new startups but also in shifting the focus from self-employment (necessity-driven entrepreneurship) to stimulation of high-impact new ventures (those with higher innovation and survival rates as well as greater capacity for employment generation).

What kind of business incubator?

The choice between a mixed-portfolio and a sector-specific model will depend on the existing pool of startups and high-growth SMEs in the agricultural sector. This pool is limited in many developing countries, lessening the viability of an incubator that only incubates agribusiness firms. Under these circumstances, a mixed-portfolio model will be more appropriate. In countries with a well-populated agribusiness ecosystem, the sector-specific model is an option worth investigating (Ayers, 2012).

Preference for a value chain or technology-oriented approach will depend on the type of constraints that the incubator experience seeks to address. If lack of access to adequate technologies constrains the entry and survival rates of new firms in the agribusiness sector, the answer would be to set up an incubator with this focus. On the other hand, a thematic focus on value chain development would be in order if

[53] Total Early-Stage Entrepreneurial Activity (TEA) is the number of individuals in the process of starting a business plus those running new (less than three and a half years old) businesses, as a percentage of the adult population.

the main bottlenecks facing agribusiness startups or young firms are related to value chain dynamics (weak access to input and output markets, and financial markets) or can be solved through enhanced value chain performance (partnerships, market linkages and value chain finance).

The selection of one business model over another depends on several factors. For example, agribusiness incubators that pursue social objectives are often sponsored by governments and donors, via the provision of physical space for the incubator and contributions to operating costs. Incubators that are completely or partially sponsored by a private organization emphasize self-financing through revenue generation and/or capital gain schemes. Equity investment models are preferred in contexts of high growth, but can be very restrictive in less dynamic environments where fewer firms are able to meet the stringent criteria required to access the incubator and equity participation scheme. The business model of agribusiness incubators evolves over time. After some years of operation, agribusiness incubators tend to move towards more sophisticated and financially self-sufficient models. This is the case of Fundación Chile, which started making equity investments in incubated firms in the 1990s (World Bank, 2011). ABI-ICRISAT would like to follow in Fundación Chile's footsteps (*info*Dev, 2014b).

Agribusiness incubators fill a gap in approaches to developing commercial agriculture, such as value chain development, strengthening of farmer organizations or promotion of large-scale (foreign or domestic) agribusiness investment. Incubation is relatively less investment intensive than related interventions, but is demanding in terms of orgware. Successful incubators require a great deal of capacity building, institutional learning and networking efforts. Agribusiness incubators can be implemented in combination with complementary approaches, such as agrobased clusters (Chapter 3) and agro-industrial parks (Chapter 4), as will be further discussed in section 6.6.

Location and size of agro-incubators

Location

The locational dimensions of business incubators are framed by two overarching considerations: (i) that they are physically situated in a given location in order to facilitate their business model, in terms of access to services, minimizing costs, supporting clusters of startups and realizing economies of scale; and (ii) that they may be targeting some specific geographic area as part of a territorial development strategy. The latter criterion is straightforward, dictated by territorial focus. Elements of this focus may include other approaches discussed in this book, where incubators are elements of corridor, cluster, agropark or SEZ initiatives.

There are many locational considerations in regard to the business model. As mentioned earlier, some business incubators are virtual, so for them location is not relevant, but deciding where to locate is critical for residential incubators.

Incubators locate mostly in urban areas. According to the European Commission (2002), over 54 percent of the incubators studied in Europe were located in urban areas.[54] In the United States of America, close to 80 percent of incubators are located in urban areas (Qian, Haynes and Riggle, 2011).

[54] The remaining incubators are located in greenfield areas (24 percent) and rural areas (6.4 percent). The rest correspond to the categories: Others and No answer/Don't know.

Incubators targeting the agribusiness sector also tend to locate preferably in peri-urban and urban areas. The CENTEV incubator is in the peri-urban area of Viçosa, TechnoServe of Mozambique is in the centre of Maputo and MLSCF is on the periphery of Kuala Lumpur. UIRI is located in Kampala and IAA-IPB in the city of Bogor, near Jakarta. However, some examples of agribusiness incubators located in rural areas can be found, such as the industrial hives in South Africa.

The main factors influencing the location decision of the incubator are: (i) proximity to an entrepreneurial community that experiences the need for incubation services; (ii) closeness to poles of competitiveness such as agrobased clusters, industrial parks or technoparks; and (iii) vicinity to key actors in the pre-existing innovation system (for innovation- and technology-oriented incubators) that are not serviced by other innovation providers. For example, university-affiliated incubators, such as the Indonesian IAA-IPB and Brazilian CENTEV are located on the university campus or in the vicinity, as seen earlier in this chapter.

Agribusiness incubators thrive in places where there is an active, broad territorial partnership for agricultural and entrepreneurial growth. Therefore, priority should be given to locations where the public sector is committed to the incubator idea (i.e. the incubator is adequately placed in relevant governmental strategies and plans, and resources are allocated to the development and operation of the agribusiness incubator) and the private sector helps in creating networks and tailoring the incubator model to fit the needs of the local entrepreneurial ecosystem.

Size

Any consideration of the optimal size of an incubator must take into account the business plan of the agribusiness incubator, i.e. how many startups it plans to support, what services it will provide and what stream of revenue is expected.

The size of agribusiness incubators varies widely. Incubator sizes in the United States of America ranged from 148 m^2 to 20 000 m^2, with six out of ten incubators under 3 700 m^2 (NBIA, 2006). The agribusiness incubator affiliated to the University of Idaho has a 2 043 m^2 facility, almost double that of the agribusiness incubator of the Central Wisconsin Agribusiness Innovation Center (1 156 m^2). The CENTEV incubator in Brazil occupies a 1 000 m^2 building. Of smaller dimensions are the agribusiness incubator established at the Georgia Centers of Innovation (371 m^2) and the South African industrial hives (222 m^2).

It is difficult to generalize about the right size for business incubators, because it will depend on the number of clients and services provided (NBIA, 2006). Furthermore, sizing options are often limited because of the availability of funds to finance the initial capital and operating budget. However, a rule of thumb is that an incubation centre of about 2 000 m^2 should easily accommodate 20 tenants (Ayers, 2012). For example, the CENTEV incubator hosts about 20 companies in areas ranging from 15 to 50 m^2, according to the business plan and specific needs of each firm (*info*Dev, 2014h).

Incubator stakeholders

Two key categories of actors are involved in a business incubation process: (i) the incubator promoter, sponsor or entity affiliated to the incubator; and (ii) the clients or incubated companies.

Promoters and sponsors of agribusiness incubators

- The *public sector*, through line ministries, public universities and research centres, and SME development agencies. For example:
  - UIRI was founded and financially supported by the Government of Uganda;
  - IAA-IPB was initially financed by the Ministry of Cooperatives and SMEs of Indonesia;
  - UFV is the promoter, founder and manager of the CENTEV incubator;
  - SEDA funds the Timbali incubator.
- The *private sector*, through private companies and investors, private universities and research centres, and foundations. The example of Flat6Labs has already been discussed. The Villgro incubator in India was founded by social entrepreneur Paul Basil, with the support of foundations such as Lemelson and Rockefeller, among others.
- In some cases, actors work through *PPPs*. MLSCF was founded by a Californian venture capital company and a Malaysian state-owned technology development agency, primarily using capital from the pension funds of a number of state-owned enterprises.
- The *international community*, through donors and development agencies:
  - the TechnoServe incubator in Mozambique was founded by the international NGO TechnoServe and received initial funding from the United States Agency for International Development (USAID);
  - the World Bank promotes the implementation of several agribusiness incubators worldwide;
  - ABI in India is managed by ICRISAT, an organization that belongs to the Consultative Group on International Agricultural Research (CGIAR).

Sponsorship of incubators reflects the approach taken. Business incubators in North America are generally considered a tool for promoting economic and social development – 31 percent of North American business incubators are sponsored by economic development organizations, 21 percent by government entities, 20 percent by academic institutions and only 4 percent by for-profit entities[55] (NBIA, 2006). In the main, this pattern holds true for most developing economies.

Serial entrepreneurs can play a key role in the promotion and development of agribusiness incubators. Serial entrepreneurs start a number of new businesses in the same or different domains. With experience gained, they are well placed to support agribusiness incubators as mentors or angel investors because they understand business logic and recognize the hurdles in assembling teams, accessing finance and expanding business ideas and projects.

Incubated companies. Agribusiness incubators have on average 20 or more client companies (Ayers, 2012). They can either be tenants that rent space at the incubation centre or non-residential clients that are not physically located in the incubator space but receive mentoring, technical assistance and services. Generally speaking,

[55] The remaining 24 percent is sponsored by other types of organizations or by partnerships with more than one sponsor.

clients are startup agro-entrepreneurs and SMEs in the initial stages of development, but some incubators cater exclusively to specific groups of clients.

Assets and services offered

The type of assets and services offered depends, obviously, on the typology of clients targeted and on the mission of the incubator. Some agro-incubators focus on the *provision of facilities and co-working space*. The prevalent management style of these "brick-and-mortar" incubators is that of a landlord or facility operator, whose main aspiration is to get the maximum occupation rate possible. Consequently, they will set low selection criteria to accept tenant firms. They typically provide both shared office space and shared facilities and equipment for production and testing, such as laboratories and packing facilities. For example, the Kerala Industrial Infrastructure Development Corporation (KINFRA) Food Business Incubation Centre located in Malappuram, India, has a shared packing facility equipped with retort pouch technology.[56]

Physical facilities for use by clients were a must in first-generation business incubators but, as mentioned earlier, the current trend is to mix on-site and off-site arrangements. One example is the Timbali incubator, which offers physical incubation space as well as non-residential incubation services for off-site clients. In the latter case, the mentoring team periodically visits clients' farms and offices.

Beyond co-working space, the most important contributions that startups expect from agro-incubators are *services to develop business skills, mentorship, networking and finance*. Among the services usually provided by agribusiness incubators and accelerators are the following.

Business development, market access and technology transfer services

- Facilitating linkages into relevant supply chains.
- Support in obtaining regular access to adequate quality and quantity of agricultural raw materials.
- Enhancing managerial and technical skills, and raising finance to position the enterprise for growth.
- Helping to adopt technologies and resolve technological challenges.
- Support for new product testing and test marketing innovative products.
- Assistance in meeting modern food safety and quality standards.
- Support in packaging, marketing and distributing final products effectively.
- Assistance in navigating regulatory requirements.
- Conducting market research and executing commercial demonstration projects.

For instance, TechnoServe, in Mozambique, provides strategic advice to its clients in the areas of processing, farming, packaging and transport/logistics. In some cases, the incubator provides brand building services as part of a franchising exercise – the South African Timbali incubator has built the trade name Amablom for use by its clients in the fresh flower industry. Many business incubation programmes partner

[56] A retort pouch is a type of food packaging created by aseptic processing made from multiple layers of flexible laminate.

with the corresponding local public authority to create a "one-stop shop" for entrepreneurial support.

People connectivity and networking

Connectivity and networking include mentoring, coaching and virtual communities, as well as networks of angels, mentors, entrepreneurs (including value chain capital) and investors. The strength of incubators in connecting startups is probably most critical. The success of an incubator and its ability to build networks will rest on the strength of the entrepreneurial ecosystem made up of supporting organizations, finance, business services, business climate, celebration and so on. At the same time, a well-performing incubator will reinforce the foundations of the ecosystem and the networks within it.

Access to financial services

Some incubators provide financial support directly. It is common for them to provide some seed funding, limited to just enough capital for startups to build a prototype or first version of the product or service, usually between US$15 000 and US$30 000. Other incubators invest in the startup companies that they accept for incubation (as an equity investment), as will be explained in the next section. Nevertheless, the most common type of financial support offered by an agro-incubator is to link the startup businesses with external providers of financial services and possible investment sources, including angel investors. There are also several examples of incubators that foster the development of new pro-SME financial products (World Bank, 2011).

BOX 52

Examples of assets and services provided by agribusiness incubators

IAA-IPB in Bogor, Indonesia

This incubator provides its clients with office space and utilities and meeting and training rooms. It also offers an array of services for free or at a subsidized rate. These services include management and technical training, market research, business plan development, consulting on technological innovation and on business development software. IAA-IPB offers access to a processing plant and laboratories for a moderate fee. Together with the usual incubator services, IAA-IPB assists clients in obtaining financial assistance, an element that was crucial for the success of many.

CURAD incubator in Kampala, Uganda

The agribusiness incubator set up by CURAD, on the campus of Makerere University in Kampala, supports agribusiness startups and SMEs in the coffee and other agricultural chains in Uganda. The incubator nurtures the growth of incubated firms by providing physical infrastructure and a package of holistic services that includes technical expertise, networking, mentoring and coaching solutions.

Sources: *info*Dev, 2012a and 2014i.

Although it is challenging to generalize about best practices with regard to financial support that comes from an agribusiness incubator, the majority of people interviewed emphasized the desirability of facilitating linkages with financial providers and investors, rather than actually providing direct financial support (unless as an equity investment). The benefits of increasing the number of early-stage investors were also recurrently cited.

Provision of services

Provision of services to a pool of zero-stage enterprises creates a fertile ground for growth and an internal dynamic of "coopetition" that pushes the incubated firms to collaborate and engage in a continuous learning exercise that gives them an edge *vis-à-vis* external competitors. At the same time, startups compete against each other and against non-incubator businesses on the basis of quality, value addition and time to market.

The service mix can be oriented towards network or training models. In the network model, emphasis is put on developing networks that will interact with incubated firms. Through the relationship with a support network, agro-entrepreneurs will be able to access key knowledge, capital and services, and will eventually expand their horizons (Ibata-Arens, 2011). Such networks can include local and global angel investor and venture capital networks, linkages with R&D institutions, commodity networks, networks of business incubators and more general business networks.

The training model places the accent on the provision of training and coaching to help incubated entrepreneurs find their footing in the national/global business and materialize their business idea fully. The training record is often mixed, according to some of the startups interviewed, and the content of training is highly variable, but business management and consulting or training for agronomic or technology needs are ordinarily delivered.

The current trend is to combine both models.

Type of service provided is linked to the dynamics of the incubation process. In the pre-incubation stage, services are mostly oriented to help clients develop the business idea, prepare and fine-tune the business plan, run the proof of concept, prototype or pilot testing of the relevant technology, test the waters in the market and take the administrative steps towards enterprise creation. University-affiliated incubators mainly offer services for this pre-incubation stage.

Services needed at the incubation stage are those required to accompany the startup in its initial expansion. The accent is put on mentoring, coaching, fundraising, technology transfer and training, but more than anything on networking to help clients attract investors, executives and staff with the right skills, upgrade technology and develop strong commercial and business relationships.

Many incubators understand the importance of post-graduation support and, hence, continue to provide a set of services in the post-incubation phase. For example, IAA-IPB offers graduated business support via business plan revision and links to market networks and financial providers. Similarly, the CENTEV incubator monitors companies after graduation and grants them access to courses, events, a pool of experts and laboratory services. In this phase, business accelerator services are sometimes offered.

Generally speaking, in situations where promising potential is shown, agribusiness accelerator programmes can be devised to support firms that have graduated from incubators to catalyse their growth further. In doing this, the characteristics of accelerator programmes have to be well understood, in particular that accelerators, unlike first- and second-generation incubators scout entrepreneurs with high-growth potential, regardless of their scale and stage of development (not necessarily zero-stage firms) and often have a capital gain model (Miller and Bound, 2011).

Management, operation and financing of agribusiness incubators

As previously discussed, agribusiness incubators can be established as a public body, mainly depending on governmental and donor funds, or as a private body. The latter can adopt various income models according to its profit or non-profit statutory model. Over the past few years, PPPs have become the preferred mechanism for establishing agribusiness incubators. Proof of this is that most incubator cases profiled by the World Bank study (2011) were structured as PPPs.

According to the World Bank (2011), the ideal organizational structure of an incubator has lean staff and a solid capital structure supplemented by solid partnerships and networking. It is worth exploring these three issues (staff, networking and capital structure) in more detail.

Incubator staff and managerial style

The number one failure of business incubators may often be the incubator team. Agribusiness incubators thrive with a lean staff system but it is vital that they hire good teams and, in particular, good managers. Efficient incubators are led by experienced managers with a business mindset and strategic leadership skills, who also bring to the incubator dense personal private sector networks and the ability to cultivate relationships in other areas as needed. However, many public and university-affiliated incubators are managed and staffed by bureaucrats and faculty members in secondment or post-retirement positions. They may lack the knowledge, skills set or available time to do a good job. As Mike Ducker puts it: "Four agriculture research scientists from a university have a low probability of starting a successful business. But, if you take out two scientists and put in a marketing person and a CEO, then you have a company. The same thing applies to the incubator team" (Ducker, 2014). The logic behind this statement is clear: you cannot support a startup entrepreneur to do something that you do not know how to do yourself.

The importance of putting together an entrepreneurial team cannot be overstated. A good incubator team should be composed of people with private industry experience, and preferably with some members having a good knowledge of international markets. Furthermore, incubator staff should be knowledgeable not only about the incubation process but also about agribusiness management and agricultural marketing. As important as having a strong management team is that the incubator hires senior staff who connect the startups with key members of the entrepreneurial ecosystem. The search for a lean, flexible incubator structure underlines the importance of leveraging other free or *pro bono* support from universities, technology companies and consulting firms.

The managerial style of agribusiness incubators should be kept flexible enough to allow learning-by-doing processes. Consequently, agribusiness incubators (and

the firms they incubate) may privilege the cultivation of non-linear management capacities[57] that give them the time and space to self-organize, evolve and adapt, so that they become agile, lean and open to adaptive evolution.

Ability to network effectively

The success of the incubator will depend on its ability to establish dense networks, particularly with sector leaders. As explained previously, incubator managers can tap financial markets through network linkages to underwrite growth, access appropriate technology solutions and proactively identify market and business opportunities for the incubated entrepreneurs.

Wide-ranging scale of operations, capital structure and income models

The World Bank noted that the scale of operations of the ten agribusiness incubators appraised in its study of 2011 ranged substantially, from US$50 000 to US$50 million.

Most incubators receive financial support from public and/or private sources, such as public funding of core activities, donor contributions or private sponsorship, either as part of social corporate responsibility programmes or as a strategy to delegate to the incubator the detection of innovation.

Agribusiness incubators need an income stream consistent with their incubation cycle potential. An adequate capital injection in the initial stages is essential for the performance of the incubator. The *initial allocation* to cover expenses (payroll, cost of incubator buildings and facilities, subsidies to incubated firms, financial costs and overheads) should be large enough to ensure that the core activities of the incubator are properly funded. If the allocation is too small, the incubator will struggle to attract and retain qualified staff, provide an adequate service mix and mobilize entrepreneurs to join its ranks. On the other hand, too generous an allocation may foster overly risky or inefficient behaviour, generating an unbalanced incubator portfolio.

The most common business model for incubators is focused on *revenue generation* (World Bank, 2011). The main sources of revenue include rentals on infrastructure and facilities and fees from various business development and consulting services (service, consulting and marketing fees and franchising). Rental fees are the most common source of revenue (with up to 40–60 percent of total funding), followed by business incubation fees and fees for other services, such as marketing and business consulting, and hot-desking solutions (i.e. renting a work station or desk with an Internet connected computer) (Ayers, 2012).

Such fees are usually highly subsidized during the first years of a firm's life. As the incubated business grows, the incubator manager can gradually start levying fees. Additional funding may come from programmes and projects implemented by the incubator on behalf of public authorities. Nevertheless, an income model depending heavily on projects is not a sustainable one – it will depend on project cycle and changes in government and donor priorities.

[57] Non-linear management refers to management techniques and strategies that provide room for innovation by setting management objectives and preliminary processes in the initial planning phase, but allow the organization to adapt to changes in these plans.

Another possibility is to adopt a *capital gain model*. In this business model, revenues come from profit sharing, equity investment and royalties on intellectual property. The equity stakes are usually passive, meaning that the incubator as a shareholder will not play an active role in running the incubated company. This model is preferably applied to high-growth sectors, when incubation exit strategies are clear and when short-term generation of revenues is not essential to the survival of the incubator. It may take up to ten years to realize returns on the investment portfolio, and a minimum of incubated firms (at least 20 companies according to UniBrain's facility coordinator, Mr von Kaufmann) and high-level portfolio management skills are required to spread the risk and reach break-even point. Of course, in selecting their residents, promoters must avoid actual or perceived conflict of interest between the equity stake in selected startups and the provision of services to all members of the incubator.

Mixing all the above income models is probably the best strategy for the survival and good performance of agribusiness incubators.

6.6 EVOLUTION IN AGRIBUSINESS INCUBATORS

Transitions to more advanced pathways

At some point in their life cycle, agribusiness incubators may shift from stand-alone organizations to more complex models. They can, for instance, follow an "incubation of incubators" approach, where a network is set up in which satellite incubators spread over a determined territory depend on a central incubator coordinating the activities of the entire system. Central incubators work both as basic incubators and as incubators of (satellite) incubators. Examples are BIC, in Alabama, United States of America, which is probably the first network of agribusiness incubators in history, and ABI-ICRISAT, which incubates ten incubators in India owned by research institutes and state agricultural universities that are part of the Network of Indian Agri-Business Incubators (NIABI) (*info*Dev, 2014b). See also the case of UniBrain's network of African agribusiness incubators, incubated by ABI-ICRISAT from India (Box 53). These models may have varying and sometimes remarkably wide geographic scopes: BIC satellites extend over the states of Alabama and Mississippi in the United States of America, while the UniBrain initiative coordinates satellite incubators in Ghana, Kenya, Mali, Uganda and Zambia.

Another possible format is "co-business incubation", which is a multi-incubator platform established to share knowledge (building on each other's competences), jointly execute incubation activities for achieving enhanced impact and client servicing, and occasionally support the creation of new incubators. *Info*Dev regional networks of incubators (for Asia, Africa, Europe and Central Asia, MENA, and Latin America and the Caribbean) are part of this particular category. ABI-ICRISAT has also opted for this co-business incubation model through partnerships with leading institutes in India and globally (Mauritius and Mozambique) (*info*Dev, 2014b). According to Mr SM Karuppanchetty of ABI-ICRISAT, "co-incubation provides more room for innovation and incubation; it provides greater opportunities in incubating varied agribusinesses in different value chains and ensures more synergy among stakeholders".

BOX 53

How ABI-ICRISAT incubates the UniBrain network of agro-incubators in Africa

UniBrain is a programme launched by the Forum for Agricultural Research in Africa (FARA) with financial assistance from DANIDA to support the creation of a network of African agro-incubators aiming to commercialize agricultural technologies. By design, each incubator is owned by a tripartite consortium formed by at least one university, one private sector firm and one agricultural research institution. For example, the Creating Competitive Livestock Entrepreneurs in Agribusiness (CCLEAr) in Ghana is an incubator established as a PPP between the Council for Scientific and Industrial Research-Animal Research Institute (CSIR-ARI), the University of Ghana, Humberg Farms, the Ministry of Food and Agriculture and the NGO Heifer International.

At present, UniBrain supports six agribusiness incubators that offer their services in five countries, following a value chain approach:

- In *Ghana*, CCLEAr promotes the commercialization of livestock-based technologies.
- In *Mali*, the West African Agribusiness Resource Incubator (WAARI) works in the non-timber forest products, cereal and fruit value chains.
- In *Uganda*, Afri Banana Products Ltd (ABP) promotes business in the banana value chain. In the same country, the CURAD incubator works in the coffee value chain.
- In *Kenya*, the Sorghum Value Chain Development Consortium (SVCDC) is dedicated to creating business opportunities from sorghum to produce food grains, biofuels, feedstuff and fibre.
- In *Zambia*, the Agribusiness Incubation Trust (AgBIT) operates in the fruit and vegetable value chains.

ABI-ICRISAT incubates UniBrain's incubators. The ABI-UniBrain incubation of incubators model encompasses assistance and support for potential incubator owners in the preparation of business plans; recruitment of staff; preparation of standard operating procedures for the incubator; and the provision of technical support and capacity building activities for incubator staff.

FARA is responsible for coordination of the incubators, management and resource mobilization. DANIDA, through the UniBrain programme, grants funds to the incubators for pre-implementation activities. The grant – of up to US$100 000 – can be used for establishing the incubators offices, recruiting staff and working on customer and product development. The grant is released only upon approval of the incubator proposal, containing a commercially viable business plan. DANIDA only funds the first four years of operation of the incubator – after this time, the incubator is expected to be financially self-sustainable. UniBrain's supported incubators have the status of a non-profit organization and are therefore expected to make trading surpluses that cannot be distributed among consortia members.

Incubators are increasingly being integrated into other models

As has been emphasized, incubators can play a particularly significant role in helping nascent and early-stage entrepreneurs to identify entrepreneurial opportunities with scope for growth. The fact that startups are being guided, with tight discipline,

BOX 53
(continued)

This network of incubators is further supported by the following:

- The African Network for Agriculture, Agroforestry and Natural Resources Education (ANAFE), which promotes agribusiness curriculum reforms and university interests in commercializing their inventions, and shares lessons in using agribusiness incubators as a way to improve agribusiness education.
- The Pan African Agribusiness and Agroindustry Consortium (PANAAC), which identifies and motivates business mentors for startups, finds businesses to partner with universities, agricultural scientists and inventors, and provides advice on soft landing for inward investors.
- Subregional agricultural research organizations that identify technologies and processes ready for commercialization, help consortia's research institutions in marketing their human and physical assets, and promote the interests of agricultural scientists collaborating with businesses and universities (FARA, 2015).

At present, UniBrain incubators seem to perform well. The main strengths identified are related to strong partnerships between consortia partners and their high networking capacities. Good performance also seems to be attributable to:

- willingness of governmental agencies to promote UniBrain incubators;
- existence of a large market for the processed food manufactured by incubated startups;
- numerous youth population of African countries;
- large agrotechnology base identified as suitable for African countries' needs; and
- high level of entrepreneurship zeal exhibited by young agriculture graduates and post-graduates incubated.

Some constraints are emerging as well, such as longer than expected learning time, unavailability of customized processing machinery in Africa and attrition among incubators' employees. In addition, developing incubator guidelines specific to each country/value chain has proved to be challenging. Another problem relates to the existence of numerous rules and regulations of the various governmental agencies that make it difficult to transfer the corresponding technology.

Source: pers. comm. with Mr SM Karuppanchetty, Chief Operating Officer, ABI-ICRISAT.

contributes to lowering their risks, thus making them more attractive to financiers and steering them on their path to graduation. Once incubated firms graduate, they can join an accelerator programme and/or become part of a techno or science park.

Business incubators are often linked to agrobased techno or science parks. Both tools can be described as property-based organizations focused on business growth through knowledge agglomeration and resource sharing (Phan, Siegel and Wright, 2005), but they differ in client profile and the intensity and array of services provided. Precisely these differences make incubators and parks highly complementary, to the point that many incubators operate as a component of an agro-industrial or agrobased science

park. Incubators support startup companies to define, test and roll out their business plans and help them grow. Once these firms graduate, their natural pathway is to move to the agropark facilities where they continue to receive support services, but are no longer hand held by the incubator centre through close coaching and mentoring.

Incubators that are integrated in science parks are particularly common in Brazil, China and India. In Brazil, Viçosa Technological Park and CENTEV have a strong interaction. Also in Brazil, the Technology Development Industrial Park of Ceará (PADETEC) mentioned earlier has an agribusiness incubator attached to it. The Fuzhou Science and Technology Park and the Shenzhen Science and Technology Park, both in China, have business incubators that provide services to agribusiness companies (Maxwell and Holtzman, 1997). In India, many of the industrial parks promoted by KINFRA include a business incubator. One example is the KINFRA Food Processing Park in Kakkancherry, Malappuram, which has an agrifood incubation centre within its premises (FAO, 2006).

Finally, some agribusiness incubators oriented towards value chain development, known as *agribusiness value chain integrators* (e.g. Timbali, Fundación Jalisco), can lay the foundations of agrobased clusters. For example, as seen earlier, Fundación Jalisco managed to develop the berry cluster in Jalisco, thanks to the transfer of technology and business models via collaborative arrangements with top performing clusters in the world that do not compete for the same markets (*info*Dev, 2014c). The replication of business models within a value chain can contribute to attaining a critical mass of co-located firms that become the seed of an agrobased cluster.

6.7 BENEFITS OF AGRIBUSINESS INCUBATORS

Important benefits include enterprise creation, increasing the survival rate of new enterprises (or reducing infant enterprise mortality), employment generation, wealth creation and an increased tax base. Non-quantifiable benefits include building technical and management skills among incubator staff and clients; commercial-

TABLE 17
Constraints and scope of agribusiness incubators, accelerators and science parks

Approach	Main constraints to be addressed	Scope
Agribusiness incubators	Constraints preventing agro-entrepreneurs entering the market or those determining a high new business mortality rate	Provision of long-term comprehensive services for startup or zero/first-stage development businesses Initially buffer from market areas
Agribusiness accelerators	Lack of startup capital, networks and mentoring of entrepreneurs or companies with high-growth potential in different stages of development	Provision of very short-term mentoring, contacts and seed investment to selected agribusiness companies (highly competitive selection process) Access to network of entrepreneurs, mentors and other services continued after graduation
Agro technoparks or science parks	Limitations preventing development of entrepreneurs and SMEs in innovation- and technology-based agribusiness activities	Provision of services to innovation- and technology-based agribusinesses that are well under way

Source: authors' elaboration.

izing university and institute research; training and developing entrepreneurship potentials in businesses; enhancing university-industry relations; and advocating for policies that support small business enterprises (Al-Mubaraki and Wong, 2011).

By supporting entrepreneurial startups and helping them to grow into viable companies, agribusiness incubators give the community (and indeed, the economy) the ability to benefit from an increase in the number of available jobs and from the additional revenue that is brought to the territory as a result of the new business activities. In the United States of America, reports indicate that 2 007 incubators assisted 27 000 startup companies, created 100 000 jobs and generated revenue of US$17 billion in 2005 (Qian, Haynes and Riggle, 2011).[58]

A study by the National Entrepreneurship Program in the Dominican Republic[59] found that after 18 months of startup, 70 percent of business in incubated companies were still in operation compared with only 30 percent in non-incubated companies. It may be that incubators assist entrepreneurs to meet market demands better, which is a critical factor for success. According to Sramana Mitra, the founder of One Million by One Million (1M/1M), a global virtual incubator, "two things determine whether a business can get off the ground successfully and sustainably: a validated market opportunity with customers willing to pay for a product or a service, and a product or service that addresses such an opportunity. The only incubators I consider 'real' are the ones that help entrepreneurs achieve these two goals".

Successful incubators have an impact on the agricultural sector as they become more sustainable by self-financing larger shares of their operating costs, replicating and creating new incubators and by scaling up their impact in the economy. Agricultural incubators facilitate the commercialization and modernization of the agricultural system, integrate actors along the value chain and help disseminate innovation (ACI and ETG, 2011). Incubators become agents of change in the innovation and entrepreneurship ecosystems (World Bank, 2011).

6.8 CHALLENGES AND SOLUTIONS

For agribusiness incubators to live up to their full economic potential, they need to overcome a series of challenges pertaining to their design, business model, financing and relational issues. A non-exhaustive list of the most relevant challenges facing agro-incubators is given below, together with a range of possible solutions.

Lack of demand

Some incubators are launched more with good intentions than actual business acumen and adequate due diligence, such as assessing market demand. Agribusiness incubators will not be successful unless there is an unmet demand for incubation services for agro-entrepreneurs, and proper communication and networking activities are carried out to let the business, farming and innovation system community know about the soon-to-be-launched incubator (European Commission, 2010).

[58] Of course, some of these startups would presumably have succeeded without incubator support.

[59] Authors' personal communication with Orlando Pérez Richiez, Director of the National Entrepreneurship Program of the Ministry of Education, Science and Technology (MESCyT), Dominican Republic.

Solution. Institutions considering setting up an agribusiness incubator should perform an accurate demand assessment and a competition analysis to double-check that the incubator will not duplicate ongoing efforts in the targeted territory. The competition assessment requires not only identifying whether other business service providers exist, but also whether they are directing their services to the same sector and entrepreneurs (agribusiness startups) or delivering business services that lack the hand-holding/mentoring ingredient that characterizes incubation.

Agribusiness incubators may fail without buy-in of key stakeholders

Agribusiness incubators will probably fail if promoters and stakeholders do not have a clear understanding of the agro-incubator model, including an agreement on the measures for incubator success. It is, therefore, critical to raise awareness and bring together stakeholders, including leaders at the community, regional, educational and industry levels. They will provide or leverage financial and knowledge support and will stay actively involved, perhaps as incubator advisors or board members. Conversely, the absence of buying-in will likely result in an inability to ensure the acquisition of building or space for the incubator, or to access sufficient financial support.

Solution. Initiators, supporters, planners and developers must understand business incubation well and share the rationale for creating an agro-incubator, i.e. pursuing the benefits described in section 6.7. It is necessary to reflect on the needs for an incubator in the community and back up the initiative with credible evidence from studies, surveys and research, as well as carry out an effective awareness-raising campaign to inform future clients about the initiative.

Not having the right team on board is a key challenge for agribusiness incubators

As incubators are in the business of providing entrepreneurial advice and mostly "soft support", they have to invest in engaging the right team. They need a dynamic leader and qualified staff with a business mindset, private sector experience and good knowledge of the agribusiness community. Yet, too often recruitment efforts do not succeed because agro-incubator developers insist on fishing in the wrong pond, so to speak. Not many of those among the ranks of faculty staff or civil servants fit the required profile. Another problem emerges when staff holding positions in the incubator are subject to part-time agreements. Although management of the incubator should be a full-time position, some incubators, especially university-based ones and particularly in their initial stages, allocate university staff to work part-time in incubation activities. The same can be said about government-led incubators. Agro-incubators can also suffer from lack of continuity in assignment from the parent organization – a high staff turnover is destabilizing.

Solution. Agribusiness incubators need to recruit dedicated managers and staff with specialized knowledge related to agriculture and entrepreneurial development, who know the right people in the local entrepreneurial community and have the ability to create and expand effective networks. Public and university-led agro-incubators will realize that the benefits of recruiting the right team will more than pay off and will make up for the effort of venturing into unknown waters (outside their inner circles).

Failing to provide the right mix of services
Some incubators are born with a strong vocation for technology and innovation, but they may fail to deliver the needed entrepreneurial development services. Other agro-incubators may overemphasize the provision of tailored services to incubated firms, to the detriment of networking with industry and investors. In either case, they are not providing the mix of services their client startups really need.

Solution. Introspection and recalibration to match services with client needs may be needed to help incubators provide real value, not just office space or their "favourite" type of service. Incubators should assess crucial needs. Their real value comes from providing clients with high-quality technical, networking and advisory services that fulfil their needs.

Supporting startups is a risky business
Accomplishing the promise of a reduced failure rate among incubated startups is not an easy task – it requires entrepreneurial instinct and specialized knowledge to manage the risks facing the incubator and its clients.

Solution. Agribusiness incubators need to adopt a portfolio approach to diminish the uncertainty associated with innovation and investment in new businesses. In order to do this, the incubator team needs specific knowledge on portfolio management and risk management strategies. Incubators can help their clients to reduce risks inherent to agricultural production and distribution through a combination of technology (such as drought-tolerant seeds or milk cooling equipment that does not require a reliable electric grid), institutional (franchising model that ensures price and access to market), policy and networking strategies.

Immature entrepreneurial ecosystems
These ecosystems make the job of agribusiness incubators a rather daunting task, as in the case of Flat6Labs in Egypt, detailed earlier. A weak entrepreneurial ecosystem will limit the incubator's performance, inhibiting the formation of networks and access to pools of skills and services. Worse, an underdeveloped ecosystem may result in lack of demand for incubation services.

Solution. This is a "chicken and egg" situation – without the incubator it would be difficult to develop the entrepreneurial ecosystem, and without the ecosystem the incubator may not be viable. This state of affairs calls for a thorough due diligence process (i.e. a good assessment of the initial situation should be carried out to verify that there is an active demand for incubation services) and countermeasures. Agro-incubators may need to adopt measures to counteract actively the weaknesses observed in the ecosystem, such as redoubling efforts to connect startups with other entrepreneurs and reaching beyond the local ecosystem, bringing knowledge, skills and experienced practitioners from the regional and global arena. Another advisable initiative is to integrate the establishment of the incubator into a more comprehensive road map for developing the entrepreneurial ecosystem.

Limited incubator impact
Incubator impact on the overall economic performance of a territory may be limited if the incubator has functions, a business model and operational modalities that are not tailored to the community it serves. Moreover, incubators that are not embed-

ded in the overall regional/national development policy and not considered in a broader sectoral strategy could be facing too hard a task for their potential.

Solution. Agro-incubator promoters need to channel efforts to design an incubation model that suits the needs of the targeted entrepreneurial community and is aligned with the objectives of key public and private stakeholders. The features of the model that need appropriate tailoring include a client-oriented service mix; suitable organizational modality; definition of clear entry and exit criteria; adequate pricing of incubator offers according to the market and in order to achieve self-sustainability; an efficient marketing plan; and adequate management and financing modalities.

Time management

The multi-year nature of the incubation process cannot be ignored, nor can the need for synchronized implementation of incubation activities and related disbursements. The incubation process is time consuming, but such intense dedication to incubation activities is not always well reflected in the working budget of the parent organization. In cases where the incubator is implemented via a partnership, there could be significant additional costs incurred by partner institutions that are not reflected in the partnership budget. Other problems arise from information that is not well streamlined among members in the partnership programmes, as well as late disbursements from donors for partnership activities that create delays in the incubation process.

Solution. Disciplined time management for incubation activities is essential for the performance of agro-incubators. A smooth system needs to be put in place for efficient disbursement, tracking of activities and sharing information. The incubation process should not be rushed, and stakeholders must be aware from the very beginning that they will need years to realize the expected returns on investments. Stakeholders should also watch out to ensure that the incubator does not move at too leisurely a pace, or they will fail to generate the momentum needed to ignite entrepreneuship in agriculture.

Challenge in becoming sustainable

There are three main indicators of agro-incubator sustainability: the viability of incubated/graduated firms; ability of the incubator to self-finance its operating expenses; and progress made towards the replication of the incubation model.

Performance of incubated/graduated firms. Incubators need to measure success in more than just attracting outside funding: ultimately, the success of a business incubator is measured in terms of the turnover and employment generated by the firms it has supported. Successful incubators help create sustainable agro-enterprises that generate value added and profits.

While the most important contribution of incubators is to help clients survive throughout the critical startup stage and grow into sustainable medium-scale enterprises, some incubators overprotect their clients. This situation worsens in the absence of an exit strategy. While the incubator creates a safe and surrogate environment for incubated startups, extending such protection longer than reasonably necessary makes startups complacent and soft.

Agribusiness incubators that target specific segments of society (women entrepreneurs, youth) may be more challenging to sustain because the pool of potential clients they can incubate is restricted, and incubates may be less likely to succeed than the average agro-entrepreneur. This factor should be taken into account when designing the agro-incubator, and particularly the level and time frame of subsidized support.

Beyond the good record of client firms, successful agribusiness incubators have a powerful demonstration effect. Previously untried ventures become possible and positive energy for change is diffused among non-incubator agribusinesses.

Slowness in moving towards self-financing is one of the most common challenges facing agro-incubators. For example, some incubators have a strong financial dependency on the parent institution, to the point that their own continuity may be at risk when the parent organization goes through financial hardships or considers that agro-incubation is no longer a priority. Furthermore, agribusiness incubators that rely solely on public funding will tend to incur expenses not correlated with overall performance.

Successful agribusiness incubators find new ways to fund themselves as they mature. The World Bank (2011) found that in the ten incubator cases appraised, initial capital and the operational expenses of the startups were covered during the first years by the incubator founder or promoter, whether donor, public or private organization. Nonetheless, slowly but surely, the majority of these incubators started cultivating new streams of revenue. For instance, the Indonesian incubator (IAA-IPB), founded in 1995, managed to become financially self-sufficient in 2000 thanks to additional sources from consulting fees (design of agricultural terminals, preparation of manuals for a packaging house, preparation of SME lending models for banks) and equity participations in successful graduated clients.

Moving towards replication. The outreach capacity of agribusiness incubators is limited by design (each incubator has a limited outreach capacity limited to a number of tenants). An incubator can only support a limited number of firms until they graduate, and only then will it be able to provide support to a new batch of agro-entrepreneurs. Scale and replicability are the ultimate tests of the efficacy of this approach to agribusiness development. Advanced incubators replicate and scale up through incubation of new incubators.

6.9 CONCLUSIONS

Agribusiness incubators vary greatly in terms of years of operation, number of incubated and graduated firms, sales, initial capital and operating expenses. However, there are good practices that can be applied to the entire agro-incubator universe.

> *"Many incubators assume that cheap real estate, co-working spaces, used furniture, plus a phone and Internet connection equate with business incubation. They mistake cheap floor space for meaningful programme content. Well, it isn't."*
>
> Sramana Mitra, Harvard Business Review, 26 August 2013

This chapter has addressed several myths about agribusiness incubators. One is that agro-incubators attract their tenants mostly on the basis of the provision of subsidized office and production space. The reality is that agro-incubators tend to provide soft support elements, such as coaching/mentoring and networking, rather than hard support contributions (physical facilities).

Moreover, successful agribusiness incubators connect incubated firms to people who can help them expand their business: networking is essential to the success of agribusiness incubators. As mentioned earlier, the network includes potential employees, market actors, potential board members and mentors, potential investors and experts in the technology where the startup businesses are working.

Successful agribusiness incubators also put pressure on entrepreneurs, through disciplined timelines. Good incubators are constantly imposing deadlines with respect to creating products, doing pitches, presenting to customers, and so on. Aggressive time lines are a way to push entrepreneurs out of their comfort zone, to make them aware of gaps in their skill sets and encourage them to recruit qualified people to cover these gaps, hence contributing to the overall success of the business venture. This is, however, where government-run incubators often fail, as they too often fail to maintain discipline and pressure on the entrepreneurs and allow them to waste time.

A second myth about agribusiness incubators is that the financial support they provide is their main contribution to an entrepreneur's survival and growth. The truth is that not all agro-incubators provide direct financial support, and that the idea of access to finance is often overrated. In most cases, access to markets (including labour markets to recruit good staff) and being able to develop and implement a business idea successfully, thanks to talent, dedication and incubation, are more important to entrepreneurial success.

The success factors of agribusiness incubators are a combination of lean operations, focusing incubates on market success, building strong linkages with the entrepreneurial ecosystem, discipline and performance targets (through "tough love" that pushes client firms to boost their business performance).

The founders and operators of agribusiness incubators need to have a business mindset and leadership qualities, and be dedicated full time to incubation activities. Another good management practice is to keep a flexible approach to the incubator's business model, allowing the agro-incubator to evolve eventually from revenue-generation to capital-gain model, or to proceed towards more advanced pathways, such as the co-incubation process, incubation of incubators, or a virtual incubation model.

The benefits of agribusiness incubators can be manifold. Benefits to communities include enterprise creation and survival, employment generation, wealth creation and an increased tax base. Non-quantifiable benefits can also be tremendous: such as building technical and management skills among incubator staff and tenants, commercializing university and institute research, training and developing entrepreneurship potential in businesses, enhancing university-industry relations, and advocating for policies that support small business enterprises.

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Chapter 7

Attracting agro-industrial investments

> *"Making more and better investments in agriculture is one of the most effective ways to reduce hunger and poverty while safeguarding the environment. The challenge is to focus the investments in areas where they can make a difference."*
>
> José Graziano da Silva, Director-General of FAO, December 2012

The perspective of this Sourcebook is that corridors, clusters, agroparks, special economic zones (SEZs) and incubators are, in the context of an agro-industrial strategy, key tools for promoting agro-industrial investment in agrosystems. The investment promotion topic, already introduced briefly in Chapter 1 and discussed in subsequent chapters, is further elaborated here.

Agribusiness spatial development initiatives (SDIs) are of course just one model for attracting investment in the sector. Several countries – Malaysia, Brazil, Costa Rica and Tunisia, among others – have done particularly well in promoting foreign direct investment (FDI) in the agribusiness sector, as objectively measured by ratios such as FDIs/gross domestic product (GDP) and agribusiness/total investment. They have used a range of instruments and strategies to achieve this, not necessarily relying uniquely on agroterritorial models.

The rationale for dedicating a chapter of this book to investment promotion is threefold. First, investment promotion – whether geographically targeted or not – generally goes together with territorial development. Second, no matter how well designed and technologically advanced agrobased industrial parks, SEZs, etc. may be, they risk lying empty for years if not properly promoted among potential investors. Third, the promotion of territorially based investments in the agribusiness and agro-industrial sectors has special features that set it apart from the attraction of general investment. This is a reflection of the unique challenges that agribusiness investors face, and that public investment promotion efforts can help address. This chapter focuses on the unique traits associated with the promotion of the agrobased SDIs analysed.

The chapter describes some of the important aspects of successful investment promotion/attraction for agro-industrial investments and, relating these to the five tools, presents the what, who and how. Although the Sourcebook uses the terms "promotion" and "attraction" (of investment) interchangeably, the term "investment promotion" has connotations for some people of special incentives or a race-to-the-bottom *vis-à-vis* tax holidays or other incentives. Over time, the

more neutral term of "investment attraction" has come to take prominence. The Sourcebook does not enter into discussion over race-to-the-bottom concerns, but rather highlights good investment practices.

The chapter includes a summary of lessons learned from successful investment promotion strategies with a territorial approach, illustrated with further in-depth discussions of a case already introduced in Chapter 5, but this time focusing on investment promotion.

7.1 INTRODUCTION

Each of the tools involves unique priorities in the scope, scale and type of investments that it is attempting to attract, employing diverse strategies to attract investment and appeal to specific investor profiles, as summarized in Table 18. Public and private partners "co-invest": the public sector makes investments in public goods and creates a more enabling environment conducive to private sector investments in agribusiness.

The scale of investment varies from billions of dollars in the case of agrocorridors to a few million or even less for incubators. The overall investment figure is the sum of two complementary types of investments, as follows:

1. (Initial) investment in the instrument, which is funded mainly by the promoter(s): public actors and donors/international financial institutions (IFIs), such as investment in common infrastructure and services, design and promotion of the location/investment opportunity.
2. Investment attracted by the five tools, leveraged by the seed investment mentioned above. Such investment is largely financed by private firms, sometimes accompanied by co-investments by donors and public actors.

The total investment is the sum of hard and soft investments. Models, such as corridors or agroparks, with a higher proportion of investments in infrastructure, will end up with far larger budgets.

The scope of investments differs across the five tools, as illustrated in Table 18:

- *Agrocorridors* (Chapter 2) put the accent on coupling infrastructure investments with investments in the agribusiness/agro-industry sector and the business climate. For decades, corridor programmes focused exclusively on advancing transportation improvements. In the framework of transport corridor initiatives, road, water and rail infrastructure decisions were made on the basis of engineering logic. Over time, analysis of the economic aspects of corridors and consultation with local communities became an important part of infrastructure planning and implementation. There began to be a focus on planning for agricultural and agro-industrial investment to accompany transport corridors. The transportation corridors crossing southern and Central Africa have been consciously planned with an eye to the agricultural and agro-industrial opportunities that will result, and to attracting private investors.
- *Agrobased clusters* (Chapter 3) underline the importance of promoting investments that facilitate collective action and enhance network linkages, such as co-branding, common infrastructure and facilities, services and supporting institutions. Such investments can spur a virtuous circle of development within the cluster, spreading innovation and increasing productivity.

- *Agroparks* (Chapter 4), on the other hand, seek to attract private investors by offering premises and supporting services at the microeconomic level. These typically include dedicated infrastructure, facilities and services. Investment in connective logistic and power infrastructure may also be a precondition for agropark investment.
- *Agro-industrial SEZs* (Chapter 5) aim to attract investment by creating a favourable business environment on a localized basis, which includes favourable policy and procedural arrangements, improvements in worker training and specialized infrastructure such as in agroparks. Their emphasis is on providing a more enabling business environment *vis-à-vis* the rest of the country, including but not limited to tax incentives. They seek to reduce barriers to investment and uncertainty by reducing worries about permits, red tape, access to land, water and electricity, and by the presence of a qualified workforce.
- *Agribusiness incubators* (Chapter 6) typically seek to attract entrepreneurs by providing startups with shared infrastructure and dedicated services, including coaching and networking efforts.

The profile of private investors targeted has nuances across the territorial models studied, as can be seen in Table 18. Agrocorridor initiatives engage a wide range of private investors, ranging from multinational to domestic agro-industries and other agribusiness firms (aggregators, traders, input suppliers, logistics providers, processors, supermarkets, etc.), and construction and consulting companies.

TABLE 18
Investment features of the five tools

	MAIN FEATURES		
	Investment scale (co-investment)	**Profile of private investors**	**Focus of public investment**
Agro-corridor	Several billion US$	Multinational and domestic agribusiness/agro-industry firms, construction companies, etc.	Coupling infrastructure investments with sectoral efforts, trade and regulatory policy reforms, and sectoral development plans
Agrobased cluster	Depending on the agricluster road map, from tens to hundreds of US$ million	Multinational and domestic agribusiness/agro-industry firms, construction companies, etc.	Facilitating the growth of agglomeration economies and promoting collective action
Agro-industrial park	Tens to hundreds of US$ million	Park tenants include agribusiness/agro-industry firms, specialized service providers and logistics firms	Common infrastructure, logistics facilities and dedicated services
SEZ	Tens to hundreds of US$ million	SEZ tenants include agribusiness/agro-industry firms, specialized service providers and logistics firms	Advantageous economic and regulatory frameworks, together with common infrastructure and services
Agro-incubators	Several US$ million	Agribusiness/agro-industry startups, venture capital, angel investors	Common infrastructure (not always) and dedicated services to create and coach new agribusiness firms

Source: authors' elaboration.

Agro-industrial parks and SEZs try to get agro-industry firms, specialized service providers and logistics firms to relocate to their premises. Most of the promotion efforts of these three tools are carried out among multinational agribusinesses and large domestic firms. The promotional efforts of some clusters and parks target small and medium agricultural enterprises (SMAEs), which achieve economies of scale through co-location, or a mix of SMAEs and large-scale agribusiness companies. On the other hand, agribusiness incubators seek to attract new (often young) entrepreneurs to invest in the sector and accompany them during the early stages of the lives of their companies. For example, from 2012 to 2013 the Monterrey Business Incubator Network in Mexico served more than 3 000 startups, supporting new agribusinesses that have generated more than 6 000 jobs.

The number of private investors ranges from a few dozen companies that become park/SEZ tenants or incubator members, to hundreds or even thousands of firms that participate in agricluster development (e.g. 500 firms in the Chilean salmon cluster, or nearly 2 000 firms in the Pichincha flower cluster in Ecuador (FAO, 2010a) or in agricorridor programmes.

7.2 INVESTMENT ATTRACTION FOR AGRIBUSINESS SPATIAL DEVELOPMENT INITIATIVES

Agroterritorial investment promotion policies and strategies

Many government efforts in territorially based *investment promotion*, particularly among developing nations, *prioritize agriculture*. Even here, it is important to note at the outset that investment promotion is not always focused on mobilizing investment in basic agricultural production, but also on *agribusiness investments* that are catalytic for boosting agricultural value chain production and productivity. An agribusiness investment promotion strategy is more likely to succeed when it is focused on specific regions, if not zones or areas, with the requisite supporting infrastructure. While investment policies, especially tax policy, can certainly operate at national level, targeted investment promotion is usually focused on a particular region, area or sector. This conclusion has been true for both large countries such as China and small countries such as Ireland.

Many central and local governments use public resources to promote private agribusiness investment (the process of investment by private sector agribusiness firms) because they see this investment as a major driver of economic growth and prosperity. Behind the push to attract such private investment into a territory, there is a focus on mobilizing the dynamism, market responsiveness, knowledge, technologies, networks and capital of private investment, and on leveraging public funds with private investment to boost agribusiness systems. This focus leads governments to introduce public policies and strategies to attract and facilitate both domestic and foreign investment in agribusiness in a targeted territory. This holds true for the five models studied. What is unique about agribusiness SDIs is that they do not promote stand-alone, isolated investment opportunities, but a package investment deal that pools together a critical mass of agribusiness investors, public and private investments and bundled investments in infrastructure and soft operations.

Like any investment attraction strategy, territorially based strategies should follow basic principles for successful investment promotion (Daly, 2013):

1. *Private sector involvement.* In order to achieve this involvement, the planning of an agribusiness SDI should be demand driven, focused on market needs and buyer (the investor and its customers). Promotion should consider the needs of investors and match the opportunity to these needs. Investment is driven by the company's desire to expand and/or to enhance its competitive advantage. This competitive advantage can be achieved by increasing cost efficiency (firms seeking the most cost-effective location primarily for the purpose of exporting to consumer markets) or gaining access to: (i) specific strategic assets; (ii) raw materials (resource seeking); or (iii) new markets (market seeking) (Daly, 2013). Territorially defined agro-industrial opportunities can offer agribusiness companies these sources of competitive advantage.
2. *National/local commitment to FDI and domestic investment*, with the corresponding reflection in public sector funding. Effective investment promotion needs to be seen as a political priority and implemented by a well-funded investment promotion body. Public commitment should also be expressed in terms of creation of a business environment conducive to agribusiness investments, particularly with regard to factors specific to the sector, such as feeder roads linking areas of production with markets and contract farming regulations, or access to land and security of land leases/ownership.
3. A successful strategy promoting investments in agrobased SDIs needs to include *regular strategic studies, policy advocacy and benchmarking*. Such a strategy should feature the following.
   - Definition of a portfolio of investment opportunities in the host territory, based on a thorough analysis of global trends and the country/location offer.
   - Knowledge of competitor locations and offerings.
   - Identification of the target group of potential investors.
   - Design and implementation of a promotional strategy to get the message across.
   - Assistance to convert investment leads into concrete investment projects.
   - Provision of investor aftercare, i.e. follow-up services provided to investing agribusiness firms to facilitate their successful startup and continuing development, and to identify and address constraints or bottlenecks that the investor may face in operating in the location.
4. *Accountability, transparency and autonomy.* Agribusiness investors carefully consider the institutional quality of the investment recipient-location in light of the emerging trends affecting governance of territories. This institutional quality is determined by the capacity of the public sector to remain accountable, transparent and autonomous in the investment process. Although many countries have implemented major policy reforms over the past decade, they still have a long way to go in providing an enabling environment for sustainable agribusiness investments. As noted in previous chapters, agroterritorial models enable governments to test or pilot innovative pro-investment policies and instruments before going nationwide and/or sectorwide. They also represent an ideal arena for streamlining public-private dialogue (PPD) making it easy to do business,

hence increasing capacity to attract agribusiness investors. Successful local and spatial development can be easily planned, but success often falters on implementation, and assumptions on investor and producer response may or may not come true. Therefore, participation of agribusiness investors and agricultural value chain stakeholders and careful testing of assumptions are necessary in spatial agribusiness development to avoid falling into the trap of an "if we build it, they will come" expectation.

BOX 54
Which investment to promote?

According to the Committee on World Food Security (CFS), for an investment in agriculture and food systems to be good and desirable for a developing country, it must benefit those who need it most. In line with this assertion, in 2014, during its 41st Session, the Committee launched the ten Principles for Responsible Investment in Agriculture and Food Systems. Addressing all types of investment in agriculture and food systems, including public, private, large, small, and in the production and processing spheres, the Principles are the result of the agreement reached for the first time by governments, the private sector, civil society organizations (CSOs), United Nations agencies, development banks, foundations, research institutions and academia on what constitutes responsible investment in agriculture and food systems that contribute to food security and nutrition. The Principles provide a framework for all stakeholders involved in agricultural investment and are voluntary and non-binding.

According to the Principles, responsible investment in agriculture and food systems has the following effects:

1. Contributes to food security and nutrition.
2. Contributes to sustainable and inclusive economic development and the eradication of poverty.
3. Fosters gender equality and women's empowerment.
4. Engages and empowers youth.
5. Respects tenure of land, fisheries and forests, and access to water.
6. Conserves and manages natural resources sustainably, increases resilience and reduces disaster risks.
7. Respects cultural heritage and traditional knowledge, and supports diversity and innovation.
8. Promotes safe and healthy agriculture and food systems.
9. Incorporates inclusive and transparent governance structures, processes and grievance mechanisms.
10. Assesses and addresses impacts, and promotes accountability.

Countries supporting and launching strategies and policies to promote investment should take these principles into consideration if they want the investment attracted to be sustainable and have equitable benefits for all.

Sources: CFS Web site: http://www.fao.org/cfs/cfs-home; FAO, 2014a.

These principles also mean that, when investors or agribusiness interests approach governments about reducing or eliminating obstacles (such as infrastructure and farmer training), the public sector needs to analyse evidence-based impacts and "if-then" equations to ensure adequate public policy and institutional responses. For example, when dairy farmers and industries in Pakistan proposed to reduce tariffs on dairy chillers, the government agreed to do so, based on the understanding that this action would be followed by the dissemination of chillers in many villages, enabling dairy farmers to participate in the commercial dairy catchment net – which was what happened.

5. *Sustainability.* A territorially based investment promotion strategy needs to be not only *effective*, but also *sustainable* from a social and environmental point of view. Governments should clearly identify which type of investments they wish to promote to achieve social goals, and articulate their decision clearly to potential investors and local stakeholders. Box 54 makes reference to sustainable investments that contribute to food security.

Public institutions responsible for investment promotion

Focus on the private sector as the engine of economic growth, and the pressure to be competitive in a globalized economy have led many countries to develop investment promotion strategies. Governments, aid agencies, foundations and other economic actors increasingly focus on how to mobilize or even catalyse agribusiness/agro-industry investment using territorial approaches, including cluster-based, corridor-based and regionally specific value chain approaches.

When agroterritorial projects are government sponsored or instigated, initial investment promotion is typically the responsibility of the country (or state or province) investment promotion body, either a Board of Investment (BOI) or an investment promotion agency/authority (IPA).

IPAs often offer domestic and foreign investors a one-stop-shop for their investment and keep records of investments registered through their offices. In order to promote agribusiness SDIs, IPAs need to gather the right information to help the right investors make the right type of investment. To fulfil this task, IPAs must collaborate with and harness the participation of many interested stakeholders. These include not just high-level government officials, but also the local communities where investments may be based and, of course, private sector promoters and partners.

In 2013, the World Association of Investment Promotion Agencies (WAIPA) had 170 members, including national and subnational agencies, from 130 countries.[60] However, many developing country IPAs exhibit weaknesses with regard to lack of customer care and poor quality of response to investors' questions and of sector-specific knowledge, notably in the case of agribusiness (FAO, 2010b). The International Finance Corporation (IFC) and the Multilateral Investment Guarantee Agency (MIGA), both of the World Bank Group, have been providing extensive support to strengthen these IPAs, as have many bilateral development partners.

[60] http://waipa.org

Other institutions also help to promote and facilitate FDI and domestic investment and provide information and services to investors, including those in the agribusiness sector. Some ministries of agriculture have started to set up units or services dealing with private companies potentially interested in investing in agribusiness. Other ministries, such as those of industry and trade, occasionally have similar initiatives. This situation can lead to significant coordination problems within the government, for example, between the ministries of agriculture and industry, with respect to food and other agroprocessing industries. Ministries of agriculture and trade/investment may also experience coordination issues on agribusiness investment promotion. The case in the Philippines presented in this chapter illustrates the coordination problems that may arise among several IPAs with an overlapping mandate. Depending on the type of tool, other ministries, such as finance, transportation and justice, and autonomous agencies may be involved, and coordination may become even more difficult. There may also be coordination issues between national and subnational jurisdictions.

In some instances, agro-industrial parks, SEZs and other tools are promoted within the framework of a (nationwide or statewide) public programme, usually hosted under a line ministry – agriculture or industry, for example – in which case the programme staff are responsible for promoting the tool and attracting investments from various sources.

However, in cases where investment in an agribusiness SDI is privately promoted, it is typically the private investor's responsibility to promote the investment, often with collaboration from investment promotion bodies, other public institutions and stakeholders. This would be typical of efforts to attract investors as tenants of SEZs or agroparks, for example. Championship of territorial approaches to agribusiness development can also grow out of private sector-led chambers of commerce or regional economic development associations. For example, the Gulf and Western Company led private sector lobbying efforts to create the Dominican Republic's first free zone in La Romana in 1969. This spurred other government- and private sector-led efforts to develop free zones in the 1970s in cities such as Santo Domingo, San Pedro and Santiago de los Caballeros in Cibao valley, the country's most important agricultural region. The free zones became the country's most dynamic engine of growth during the 1980s and 1990s (Farole, 2011).

Whether led by the public or private sector, it is important to have public, private and civil society leadership involved in agroterritorial planning.[61] Most commonly, local government economic development agencies or corporations take on the roles of economic planning, prioritizing infrastructure investments and convening PPD.

The increasing political decentralization taking place in developing countries favours the promotion of agribusiness SDIs at lower administrative levels. The trend towards devolution of taxing, spending and economic decision-making to provincial, subprovincial and municipal levels is changing agribusiness investments. In the past, centralization processes occurring in some countries had led to restrictive policies where imports and exports were channelled through specific

[61] At lower levels of economic development, robust CSOs may be weak or non-existent.

BOX 55
Investors' criteria for choosing a location

- Wages and production costs
- Skills availability
- Tariffs/import duties
- Infrastructure
- Availability of raw materials
- Transport logistics
- Availability of parts, components and services
- Availability of land and buildings
- Incentives (fiscal and non-fiscal)

Source: Daly, 2013.

cities – often the capital or leading commercial city – as a way of being able to exercise political control and tax physical items coming in and going out. Some governments have now embarked upon reversing this approach and, as modern governance and taxation systems come into being, there are new possibilities to link regional production to global markets, creating attractive opportunities for agribusiness investors.

What information is useful to attract agribusiness investors into agroterritorial schemes?[62]

IPAs and other promoting organizations will need to gather information about the competitive and comparative advantages offered by the agroterritorial tool and by the surrounding regions and value chains that shape its competitiveness. Once IPA understands these advantages, it needs to specific target investors that will benefit. Therefore, it needs to know what competing locations may be offering to the investor and how the location stacks up against them. It should "benchmark" the location against them in terms of availability of labour and infrastructure, quality and costs, and incentives. IPA and the investment stakeholders should put themselves into the mindset of the agribusiness investors – they will be thinking about which countries in the region provide the best combination of advantages for their businesses.

IPA might seek to "sell" the agroterritorial tool to investors in terms of various elements of competitive advantage: access to markets and raw materials, expertise in products and/or service technology, world-class skills, education and training, low taxes, effective and user-friendly government procedures supporting inward inves-

[62] The content that follows in this chapter draws heavily from a course on investment promotion prepared and delivered by Patrick Daly as part of a training programme on locational and spatial approaches: Building Sustainable Capacity for Investment Climate Reform in Bangladesh and Nepal. The programme was carried out by J.E. Austin Associates for Jacobs, Cordova & Associates for the IFC.

tors, among others. Companies may invest to serve a local market if it is sufficiently large but more likely their strategic justification for investing will be some combination of access to wider global and/or regional markets (as the flower industry in East Africa targets the European market) and/or to gain access to a raw material supply and/or lower operational costs. Key challenges for potential investors are to identify the best place within the region to supply the market and which location offers the best match for their criteria, as listed in Box 55.

In addition, IPA needs to offer investors accurate and complete information about the risks of the specific agroterritorial tool. Key risk elements include capital cost, staging of investment, ease of exit, technology and raw materials, components and services. Apart from project-specific factors, investors will also be concerned with the risk profile of the investment location (political risks, bureaucratic uncertainties and foreign exchange risks).

Box 56 summarizes the type of information that agribusiness investors may require.

BOX 56

General and sector-specific information required by most potential investors

General information

- Political stability indicators
- Economic growth rates
- Comparative demographic data
- Regulatory environment policies
- Doing-business indicators
- Trading across borders indicators
- Transport cost indicators (road, rail, sea and air)
- Labour availability, costs and quality indicators
- Employer/employee social insurance costs
- Working hours and holidays.

Sector- or SDI-specific information

- Presence of industry/cluster/value chain
- Size and growth rate of sector in country/location
- Presence of sector subsuppliers
- Relative presence of foreign companies versus domestic companies in sector
- Presence of industry/sector "brand" names
- What existing foreign sector investors say about country/location
- Proportion of sector output exported from country/location and to which markets
- Responsiveness of education system to sector needs
- Presence of sector-specific incentives and facilities, such as fiscal and non-fiscal incentives, SEZs, incubators, research and quality testing laboratories, sector-specific vocational training.

Source: Daly, 2013.

Does targeting investment in agroterritorial schemes require a unique approach?

Targeting the right audience

There has been immeasurable waste in investment promotion by providing information to untargeted audiences – for instance, by going to trade shows without a clear knowledge of who is to be targeted, and with what information. A core element of the investment promotion effort is to identify investors and companies that are likely to be interested in SDI. That presents two challenges – first, identifying potentially interested agribusiness investors and then reaching them.

BOX 57
Identifying the target

Step 1. Identify an initial long list of potential target companies from agribusiness and related sectors using multiple sources, including Web sites such as:

- www.kompass.com
- www.hoovers.com
- www.corporateaffiliations.com
- www.businessmonitor.com
- www.europages.com
- www.wikipedia.com (list of companies in the United States of America, by state)
- www.fdiintelligence.com (and its affiliated Web sites such as FDI markets and FDI reports)
- www.hoppenstedt.de
- www.world-businessguide.com
- www.europes500.eu (Europe's top 500)

A number of commercial companies have lists of small companies:

- www.manta.com
- www.uscompanydatabase.com

Step 2. Refine and prioritize the long list into a shorter list of companies that have the potential to be investors in the agribusiness SDI and that will be targeted for an outreach approach by IPAs. In order to reduce the long list to a shorter one, more detailed research should be undertaken on each company via its Web site and using other sources.

Step 3. Use commercial judgement as to which agribusiness companies to shortlist, depending on the results of the detailed research.

Step 4. Select the company executives to be targeted for contact by IPAs. This can be done by researching each company's organizational chart, showing who is responsible for which activities. This will vary greatly from company to company and will be quite complex in large multinational corporations with multiple product divisions and geographic locations. IPAs will need to investigate the companies targeted to find the names of senior executives in charge of pertinent business areas.

Source: adapted from Daly, 2013.

IPAs rarely have the specific industry knowledge and networks in house to carry out effective targeting. They must therefore rely on hired professional expertise from professional investment promotion advisors that know the industry. They will further benefit from strong participation by local businesses that know the industry, and from local communities that supply labour or land. They can collaborate with ministries of agriculture and industry, and with other line ministries with direct knowledge of the agribusiness sector.

Although the emphasis should always be on a demand-driven promotional policy, it is crucial that IPA knows its "product" and, most important, prioritizes the types of tool and agroindustry subsectors for which it is seeking investment. Too wide or general an "offering" is ineffective.

Disseminating information among targeted investors

An information campaign is in part designed to "get the word out" about the agribusiness SDI investment opportunity. This may start early on, creating awareness and excitement about an upcoming initiative. The Southern Agricultural Growth Corridor of Tanzania (SAGCOT) initiative is a good example of promoting an intended investment to donors and the private investment community.

Information will need to be professionally presented that responds to potential investors' needs. This can be done in promotional materials and more detailed locational and investment opportunity profiles. Information should be made available in written form as well as on Web sites and social media. Information can also be provided through business networks, commodity associations, country embassies, international conferences, trade shows and other fora, "road shows" and ministries. The United Nations Industrial Development Organization (UNIDO) sometimes supports promotional efforts through its tools and materials.

Organizing investor fora is usually one of the preferred tools of IPAs. While individual targeting of and meetings with investors are most desirable, a preliminary step can be to organize initial presentations of the opportunity to groups of potential investors – near their home location, or possibly in the destination country. Meetings should be informative and directed towards companies that are highly likely to be interested. Participation in these fora would thus ideally be "by invitation", although not so limited as to prevent other interested potential investors from identifying themselves. Fora should offer the opportunity for immediate follow-on individual meetings. Promoters should follow up individually with each attendee, offering information and responses to questions. If the forum is not held in the destination country, these meetings will hopefully lead to an initial country visit by the investor.

In-country facilitation is also vitally important. An intermediate goal of investment promotion is to encourage interested agribusiness investors to visit the location where the SDI is hosted. Their experience during this visit is crucial – they should be overwhelmed by the encouragement provided by national and subnational public sector stakeholders, the business community in the location and in the agribusiness sector, and the communities. For a publicly led initiative, this encouragement should be mobilized by the IPA or similar body. The private operator of an agribusiness SDI will take more responsibility for targeting, promotion and in-country reception and facilitation, but the public agency should be eager to assist. When the visiting investor has questions, information should be rapidly pro-

BOX 58
Ten international best practices for servicing investors

1. Recognize that the investors are the customers.
2. Investments must have clear mutual benefits for the investor and the host country/location – the "win-win" scenario.
3. IPAs must be able to articulate the location's unique selling points in comparison with competitor locations to agribusiness investors.
4. Everybody in the IPA should provide support for its customers, i.e. agribusiness investors.
5. Understanding the investor's needs is a critical first step.
6. Overdelivering is good, overpromising is bad.
7. Problem-solving is an opportunity to build client loyalty.
8. Clients should only have to tell the IPA once about a problem.
9. Never "bad mouth" the competition.
10. Be learning oriented and focused on continuous improvement.

Source: Daly, 2013.

vided and when the investor has to complete a process, effective assistance should be readily at hand, as noted in Box 58.

Private sector involvement, even in government-led SDI promotion, increases credibility and lowers the risks perceived by potential investors. The willingness of the private sector, especially among SDI stakeholders, to tell its stories and welcome newcomers represents a confidence and satisfaction of existing businesses that is appealing. Knowing that they will be welcomed with collegiality will also be a positive factor for potential investors.

SDI incentives for agribusiness investors

Countries or subnational regions frequently offer incentives with the goal of attracting substantial investors to an agribusiness SDI. UNCTAD (2000, p. 11) defines an incentive as "any measurable advantage accorded to specific enterprises or categories of enterprises by (or at the direction of) government, in order to encourage them to behave in a certain manner". Using this definition, in developing its SDI investment promotion strategy, governments may consider an "incentive package" to be offered to investors to entice them to invest in the tool.

Incentives to investors in agribusiness SDIs can be provided in many ways. Incentives can be fiscal or non-fiscal, direct or indirect. Fiscal incentives include direct "cash" grants or tax breaks. Non-fiscal incentives may include fast-track approval processes or exemptions from certain regulations. Most commonly offered incentives include: trade incentives, land grants, employment incentives, tax holidays and other advantages, training subsidies and more. Land allocations made by a number of countries to (mostly foreign) investors as part of the system of incentives have, however, led to the controversial debate on land grabbing and the extinguishing of traditional rights (e.g. grazing or water rights, or rights of transit). Governments

may also proffer promises of new infrastructure and services, and fast-track licensing and regulatory processes. Box 59 lists the incentives available to SEZ investments, according to India's 2005 SEZ Act.

Incentives may be offered with the idea of jump-starting an SDI, or with the objective of competing against alternative destinations for the investment. This is such a common element of investment promotion efforts that it almost seems as if countries are convinced that subsidies, preferential access to resources and tax relief are important determinants of investment decisions.

The economic rationale for offering these special incentives is that there are market failures surrounding the decision to invest in SDIs that justify government intervention (Barbour, 2005, p. vi). Thus, Kahan (2008, p. 3) argues that "public subsidies and other incentives may be required to ensure commercial viability and attract the private sector into high-risk agro-industry initiatives". Incentives and other types of public support may be necessary to improve the "bankability" of agro-industrial SDIs, which by definition are dependent on agricultural production and subject to the type of risk typical of agro-industries. Whether supported exclusively from public investment budgets or from donor contributions, such incentives can encompass capital- and consumption-based financial incentives, credit risk and demand risk guarantees designed to augment the financial viability of the agro-SDI.

These incentives can also be offered in the hope of achieving specific national objectives. For example, specific or greater incentives may be offered to investors that create many new jobs, or that offer investment models that are more inclusive. Such targeted investment promotion packages are relatively new, and only limited information is as yet available as to their effectiveness.

There is much discussion about the possible negative impacts of providing incentives. Barbour (2005, p. vi) states that "providing tax incentives to one group of investors rather than another violates one of the principal tenets of a 'good tax system' – that of horizontal equity. This inequality distorts the price signals faced by potential investors and leads to an inefficient allocation of capital". Good practice requires the incentive package to be available to all comers, and to be economically justifiable.

BOX 59

Incentives available to special economic zones – Government of India SEZ Act, 2005

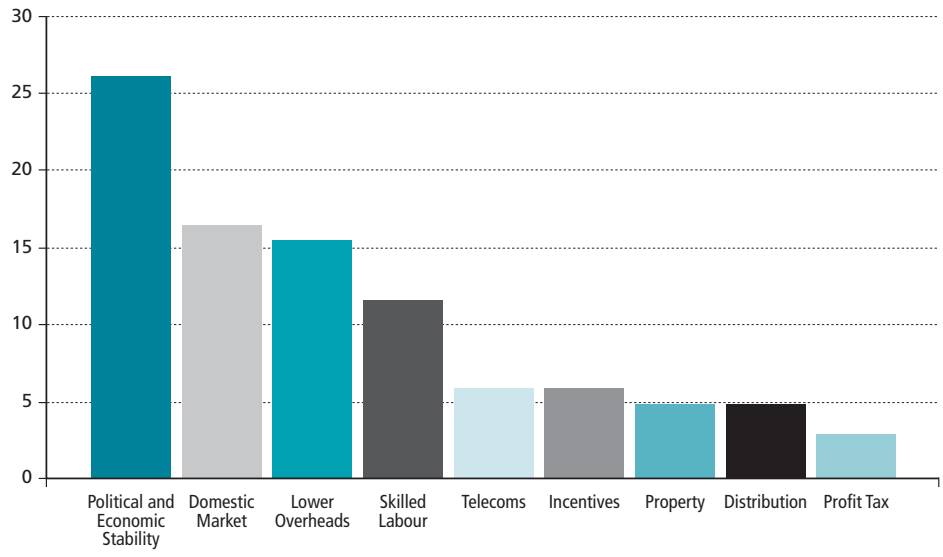
The Government of India SEZ Act, 2005, provided a list of incentives available for SEZs, including tax incentives such as duty free import/domestic procurement of goods for setting up SEZ units, special additional duty for domestic sales by SEZ units, income tax (physical export benefit and 100 percent income tax exemption for first five years and 50 percent for two years thereafter), service tax and central sales tax exemptions. FDI in the agroprocessing sector is under the automatic route (i.e. not requiring prior approval except for alcohol and tobacco), and there is no cap on reserved items of small-scale industries.

Source: SEZ Act, 2005.

Meanwhile, the question of incentives can mask the lack of core attractiveness of the investment. India's Finance Ministry, the Reserve Bank of India and others have criticised the policy cited in Box 59. They have pointed to hundreds of proposed or approved SEZs that are far too small to improve India's performance in the long term. These SEZs have proved to be little more than tax loopholes for real estate speculators and developers. Because the mandate requires only 35 percent of SEZs to be used for productive purposes, developers have used acquired land for other projects. They also fear that other manufacturers will move to SEZs to benefit from tax exemption, which could cause a significant loss in tax revenue (Joshi and Narkhede, 2008).

It would be rare for a company to make an investment decision exclusively on the basis of incentives. Ultimately, incentives play an important, but not necessarily decisive role in investment decisions. Agribusiness firms make investment decisions based on many factors including "projections of future demand, certainty about future government policy, prevailing interest rates and moves by competitors" (Barbour, 2005: p. vi). In general, they see incentives as "nice to have" but not necessarily deal breaking. It is much more effective to appeal to the agribusiness investor on the basis of strategic, competitive advantages, as seen in Figure 22, where incentives are perceived to be less influential in investment decisions than size of the domestic market, political and economic stability or the availability of skilled labour.

FIGURE 22
Key factors influencing investment decision-making



Sources: David Brown for Czechinvest; 2002 data adapted in 2006 by David O'Donovan and Noel Kelly, cited by Daly, 2013.

The solution seems to lie in the provision of "smart" incentives for agroterritorial schemes. These are incentives that:

- stimulate agribusiness investment in the desired location, with minimal revenue leakage, and provide minimal opportunities for tax planning;
- are transparent and easy to understand, have specific policy goals and are expressed precisely in legislation;
- are not frequently changed, and provide agribusiness investors with certainty about their application and longevity;
- avoid trying to target cyclical depressions caused by the lag effects of intervention;
- are developed, implemented, administered and monitored by a single agency (or employing fine-tuned coordination mechanisms);
- have low administrative costs for both governments and agribusiness firms;
- coordinate national, regional and local governments effectively;
- include follow-up and monitoring, both to ensure that incentive criteria are being met and also to provide a monitoring and evaluation feedback loop;
- incorporate sunset clauses for both the scheme itself and for the duration of benefits to any one firm;
- include a cap on expenditure, or taxes forgone, to the Treasury; and
- are non-discretionary and applied consistently against an open set of transparent criteria.

7.3 GOOD PRACTICE IN INVESTMENT PROMOTION

Investment promotion needs to be customer focused. The main rule is to understand its demand side. Strategies to promote domestic and foreign investment tend to overemphasize the supply side ("what we can offer") as opposed to the demand side ("what motivates investors"). It could be argued that the demand side is at least equally important, if not more so. The five tools presented in this book are usually developed or promoted based on what countries/regions can offer. Therefore, promotion efforts should start from the demand side and then move to the supply side when potential investors are approached.

Box 60 shows that successful investment attraction into agribusiness SDIs should not only be about the supply-side offer, but should include a nuanced knowledge and understanding of national or global market demand trends and the motivations of global and domestic agribusiness companies subject to industry-specific competitive pressures.

Governments should support agribusiness SDIs that offer competitive advantage to the investor and to the location, and further develop such advantage by investing in infrastructure and research, etc. The promotion strategy of the SDI should be built around its competitive advantage, and this message should be clearly conveyed to potential investors.

An early example of effective investment promotion is the agrocorridor resulting from the opening of the Erie Canal, New York, United States of America, referred to in Chapter 2. Built between 1817 and 1825, the canal was an engineering marvel of its day and had impacts on regional development, agricultural competitiveness and rural-urban linkages. Although the example is from a long time ago, the main lesson that can be drawn from the historical account (Gordon, 2004) has not

BOX 60
Examples of good practice in investment promotion

- Work within the framework of the development strategy of the (host) country or region
- Set ambitious but realistic goals
- Identify target firms and focus efforts on them
- Do company research before meeting with potential investors
- Understand the company's investment process and criteria
- Set guidelines for handling inquiries
- Coordinate with other stakeholders
- Build trust – keep confidentiality of client information
- Stay in touch with existing investors
- Evaluate promotional activities

Source: adapted from UNCTAD, 2011.

changed – it is that an investment promotion strategy based on location/sector competitive advantages, coupled with visionary leadership and clear investor targeting, seems to be a winning combination. The development of the Erie Canal enabled the region to take advantage of its agricultural potential: it served as a catalyst for agricultural development all along its length, opened new lands for farmers and lowered the cost of food for eastern cities (transportation costs fell by a factor of ten, from over US$100/tonne to less than US$10). It resulted in exports of grain to the United Kingdom in the context of the repeal of the Corn Laws in that country. At the same time as new settlers flooded into rural areas, the growth of cities along the path also took off. The canal transformed New York from simply a large port city to the major metropolis of North America, soon dwarfing its rivals of Boston and Philadelphia. The transportation corridor also enabled eastern manufacturers to sell their products through the lands of the canal and into the Great Lakes and interior areas.

Visionary leadership was essential for the success of this initiative. Two presidents of the United States of America did not believe that a canal stretching over 500 km and ascending over 180 m, needing numerous locks built through a vast wilderness, was feasible. But New York Governor Clinton managed to get the New York state legislature to authorize bonds, and showed how taxes and future tolls would be able to cover the interest payments. The US$7 million cost of the canal was equivalent to one-third of banking and insurance capital in New York at the time. The financial projections attracted the necessary capital from investors in the bonds. Investors were mainly domestic, but also included foreign investors, and notably British investors such as Barings Bank, enticed by the attractive returns. Pay-as-you-go techniques contributed to financial success. Early construction focused on the level portion of the canal, about 110 km of flat land that required no locks. Completed in only one year, this portion allowed revenue to begin to flow. Taxes on products from surrounding areas contributed to early financing until such time as tolls covered the interest. In 1825, over half a million dollars in tolls covered interest on the

debt, which was itself paid off within ten years. Surplus funds then went to extend feeder canals. Liberal approaches to accessing foreign technology and global labour contributed to the success, and some of this labour would later contribute to settling the newly opened lands. The canal used the latest Dutch hydraulic technology and German stone masons, among others, provided needed skills.

A modern-day equivalent of this example is perhaps seen in the investments in the Djibouti-Addis Ababa corridor linking the port of Djibouti and highways to Ethiopia, a country that relies on the port for most of its imports and exports. By lowering transportation costs, the competitiveness of Ethiopian producers is enhanced while costs of imported foods and other goods drop, both of which have enormous potential multiplier effects.

Another example is the fruit cluster of Brazil's Petrolina and Juazeiro regions. Support from the public company CODEVASF, in Brazil, helped transform the country's semi-arid northeastern region into a major cluster of fruit production. CODEVASF's strategy entailed building on the region's competitive advantage (uniquely favourable climate for agriculture production) to attract both domestic and foreign investment. Government initiatives to boost the Petrolina and Juazeiro fruit clusters began at the end of the 1960s and accelerated in the 1980s, combining the implementation of major irrigation projects, incentives for investment in irrigation projects by individuals and companies, funding for scientific research (primarily in irrigated export crops), investments in logistics and support to collective marketing. The rise of fruit production in Petrolina and Juazeiro had significant spillover effects, stimulating growth in nearly all industry sectors in the region. Petrolina's GDP per capita jumped from US$712 in 1970 to US$1 474 in 1993. Meanwhile, the city's population increased by about 170 percent from 1980 to 2010, to nearly 300 000. Today, Petrolina and Juazeiro are important fruit clusters with 100 000 irrigated hectares, and potential for about another 220 000 irrigated hectares (as of 2012) and a production of grapes and mangoes that represent approximately 90 percent of Brazilian exports of these fruits (FAO, 2010a).

Serve "*existing customers" well – lessons from Ireland's investment promotion strategy*. A key insight to investment promotion, and one overlooked in too many countries, is to ensure that existing investors are happy. As Padraic White, the well-regarded former head of Ireland's successful IPA, the Industrial Development Agency (IDA),[63] once noted, "half of our incremental foreign direct investment comes from our *existing* customers".[64] He made it his job to ensure that his agency went around systematically to all current investors, engaged them on constraints to further growth, and worked closely with them on boosting their investment. It was also possible to identify threats to these investments through changing markets or technologies and thus work with the companies to identify new or alternative investments. The agency would consequently become the best marketing agent for others that might want to invest in similar industries. Its employees would also see who had already shown up as investors and, upon understanding the logic of these investment decisions, would use the same logic to approach the competitors of these

[63] http://www.idaireland.com
[64] Personal communication.

existing customers with a newly honed and highly relevant pitch. As Gulf investors began to show interest in agricultural production in Pakistan, the country began to understand better the food standards required by the Gulf market, including halal meat, already a product well known in the local context.

Role of the public sector in promoting investment in SDIs. This chapter has largely discussed the role of the public sector in promoting investment in the five territorial instruments. The public sector's role in developing territorial instruments is taken up in greater depth in Chapter 8. It will emphasize that governments must tailor initiatives towards specific types of crops and products for which there is a competitive advantage. Initiatives need to take into account the country's social and economic contexts, as well as the unique characteristics of agribusiness investments (which set them apart from other industries), such as land tenure issues, more systemic risks and perishability of the product (as discussed in Chapter 1).

Chapter 8 will also emphasize that successful initiatives tend to have strong private sector leadership, and business investment. Governments can play an important role in facilitating SDI development through PPD and by encouraging private sector investment.

The present chapter summarizes the good practices to be adopted in order to promote investment in SDIs successfully. Public sector promoters need to follow these practices. Perhaps most important is that promoters respond to the needs of investors. Which investors will achieve important strategic or operational benefits from the opportunity? What are the "hot button" requirements of these investors? These should be the core concerns of the promoter. In order to sustain and concretize investor interest, how will the investor be sure of the availability of needed services, of low transaction costs, of low risk? These, too, are issues of basic interest to the investor.

7.4 CASE STUDY IN THE PHILIPPINES

Investment promotion in SEZs: targeting agro-industry

This case builds on the Rocky Mountain coffee SEZ discussed in Chapter 5, by examining more closely the arrangements for investment promotion of agro-industrial SEZs in the Philippines, the institutions involved and the strategies employed to target investment in agro-industry. The following questions are considered. What are the best practices in investment promotion? Does targeting investment in agro-industry require a unique approach? What information is useful to attract agro-industrial investors? What issues deter investments in agro-industry?

The Philippines has a mixed performance regarding business environment

The Philippines has demonstrated steady growth in the last several years, both for the overall economy (averaging 7.2 percent annual growth during the period 2010–2014)[65] and the agro-industrial sector. Indications of agro-industrial growth include the following:

- Annual average growth rate of 5.62 percent (2006–2010) for fruit purées and juices; 7 percent (2006–2010) for processed fruit and vegetable exports

[65] Source: World Bank, 2015. http://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG

from the Philippines[66]; and 10 percent annual growth in exports of fresh and processed food (NEDA, 2011).

- Crude coconut oil accounts for a significant portion of Philippine exports poised for growth. Efforts are under way to double exports of coconut products and especially value-added products such as refined coco oil, coco biodiesel and oleochemicals.
- Growing share of manufacturing FDI inflows from the food and beverage sectors, increasing from 27 percent in the 1990s to 57 percent, from 2000 to 2009 (Aldaba, 2010).

Agriculture and agro-industry are important contributors to the economy, with primary agriculture representing 11.2 percent of GDP and food processing (primarily coconut oil and processed fruit) approximately 20 percent of GDP and 40.1 percent of total manufacturing output (CIA, 2015; USDA, 2008). The sector employs approximately 24.53 million people (Oxford Business Group, 2014). The food processing industry is dominated by SMEs, although there are also several multinational subsidiary companies (USDA, 2008).

On the other hand, despite this growth, a number of factors limit the expansion of the agro-industrial sector and its shift towards higher-value products (Briones and Galang, 2013). These include supply chain constraints, such as inefficient logistics systems, low productivity, cumbersome land acquisition policies and procedures, inadequate infrastructure and particularly high energy costs.

Inefficient supply chain and logistics systems are a major constraint to agro-industrial growth. A 2012 study of agribusiness competitiveness in the Philippines (CATIF, 2012) states: "Shown to be cost-inefficient, unresponsive to market requirements, and unreliable, poor logistics have resulted in postharvest losses,[67] higher transaction and distribution costs, and lower productivity. Logistics costs are estimated to make up as much as 30–40 percent of total marketing costs". A World Bank study (2010) of agribusiness logistics in Mindanao highlights the poor conditions (and sometimes lack) of basic infrastructure, including physical linkages to market outlets such as inter-island shipping, farm-to-market roads and export logistics.

Productivity of agricultural production systems is reportedly low. This is attributed to low rates of adoption of technologies, minimal use of mechanization, limited access to financial services and high cost of production inputs such as fertilizer and pesticides (NEDA, 2011).

As discussed in the Rocky Mountain coffee case (Chapter 5), land rights are governed by a usufruct system whereby land is managed by local communities or indigenous people's organizations. Acquiring the right to use land for production purposes often means negotiating with indigenous populations and following a process resulting in a series of agreements that permit land leases for up to 25 years. Most businesses find the process daunting and do not know where to start.

[66] Source: Invest Philippines, 2015. http://investphilippines.gov.ph/industries/agri-business/processed-fruits-and-vegetables/

[67] Rice (14.75 percent), maize (7.2 percent), fruit (5–48 percent) and vegetables (16–40 percent) (NEDA, 2011).

A third major constraint to agro-industry is the state of infrastructure in the country. The Oxford Business Group (2014) describes the poor state of Philippines' infrastructure – "of roads, power systems, bridges, canals, airports and sea ports [… as] one of the major bottlenecks of the country". The high cost of electricity is of particular relevance to the highly perishable agro-industrial sector.

In addition to constraints specific to agro-industry, the Philippines face corruption and difficulties in the business environment. According to the World Bank's Doing Business indicators for 2016, the Philippines ranks 103rd (of 189) overall, with its lowest rankings for the following categories: Starting a business (165), Protecting minority investors (155), Paying taxes (126) and Enforcing contracts (140) (World Bank, 2015). In short, the Philippines is not the easiest place to launch new agro-industry.

Investment promotion is a national priority. The Philippines has increasingly liberalized its investment policy and regulatory framework (Table 19), opening more sectors to foreign investors, resulting in greater FDI (Aldaba, 2010). However, the business community still considers many other policies to be restrictive and onerous, and limiting to investment (Oxford Business Group, 2014).

The national emphasis on attracting investment is reflected in the creation of at least 11 IPAs coexisting in the Philippines, emerging from different acts of legislation and development efforts (e.g. the re-zoning of former American military bases led to the creation of the Clark Development Corporation [CDC]). The multitude of entities has resulted in a complex system with various laws and incentive structures implemented by the different bodies (Aldaba, 2013). Table 20 captures examples of the different incentive structures offered to investors by different agencies. An underlying principle across all agencies is the clear role of IPAs *vis-à-vis* the private sector. The private sector is responsible for leading the effort to set goals and growth strategies for its respective sectors, while IPAs are responsible for supporting the sectors in developing and implementing their growth strategies. Agro-industry is a priority sector for most IPAs.

The Philippine BOI is the lead government agency responsible for promoting investment in the country. It also administers incentives for firms outside economic zones. The agency is attached to the Department of Trade and Industry (DTI). Its mission states: "We, the BOI family, are committed to generate local and foreign

TABLE 19
Major legislation governing investment policy in the Philippines

Year	Legislation	Description
1987	Omnibus Investment Code	Simplified and consolidated previous investment laws
1991	Foreign Investments Act (Republic Act 7042)	Liberalized existing regulations and allowed foreign equity participation of up to 100 percent in all areas
1995	Special Economic Zone Act (Republic Act 7916)	Created the Philippine Economic Zone Authority (PEZA) to manage and operate government-owned zones and administer incentives to SEZs
1996	Republic Act 8179	Further liberalized foreign investments and allowed greater foreign participation

Source: Aldaba, 2010.

investments and develop globally competitive industries, thus increasing employment through the responsible use of the country's resources, guided by the principles of private initiative and government cooperation" (BOI, 2015).

PEZA is tasked with managing and operating government-owned zones (those created prior to the policy shift in 1995 to encourage private investment in SEZs), and administering incentives to businesses located within zones. Its three primary development goals are investment promotion, employment creation and export generation. PEZA operates as a one-stop shop, issuing various permits and work visas. It oversees 271 economic zones nationwide, including 16 agro-industrial economic zones (PEZA, 2012). One PEZA officer is assigned to each economic zone, with the goals of easing communication and facilitating business. PEZA is attached to DTI but remains an independent agency.

The Agribusiness and Marketing Assistance Service (AMAS) promotes investment specifically in the agriculture sector. Housed within the Department of Agriculture, AMAS serves as a facilitation and coordination service for entrepreneurs that seek assistance in expanding their businesses or marketing their products. AMAS' investment promotion efforts target commercial production activities such as high-value horticulture and fisheries, but also fruit and meat processing activities (AMAS, 2013). The other investment promotion entities are subnational entities such as the Subic Bay Metropolitan Authority (SBMA) and CDC. A global analysis of IPAs concluded that, in many cases, subnational IPAs outperformed national agencies because of their local expertise (World Bank, 2009). This pattern is not evident in the Philippines, since BOI and PEZA emerge as star performers.

Responding to industry feedback complaining about confusion over the number of promotion agencies and investment structures, efforts are being made to improve coordination across IPAs. In November 2009, DTI and the 11 IPAs joined efforts to develop the Philippine Investment Promotion Plan (PIPP), covering the period

TABLE 20
Incentives offered by investment promotion agencies in the Philippines

Incentive \ IPA	PEZA	Board of Investment (BOI)	Subic Bay Metropolitan Authority (SBMA)	Clark Development Corporation (CDC)
Income tax holiday	Three to eight years	Three to eight years	None	None
Others: after income tax holiday	Special rate of 5 percent tax on gross income	None (payment of regular corporate tax rate of 30 percent)	5 percent tax on gross income	5 percent tax on gross income
Importation of raw materials	Tax and duty exemption	Tax credit	Tax and duty exemption	Tax and duty exemption
Imported capital equipment	Tax and duty exemption	Tax and duty exemption on spare parts	Tax and duty exemption	Tax and duty exemption
Additional deductions	Training expenses	Training expenses	Training expenses	Training expenses

Source: Aldaba, 2013.

2010–2014. PIPP serves as the country's first strategic plan for investment promotion and facilitation, aiming to harmonize policy, planning and promotional efforts to maximize resources and reflect a more unified approach to investors. More recent legislative bills have also sought to merge all IPAs into one centrally managed IPA to harmonize policy-making, planning and promotion efforts as well as incentive structures (Aldaba, 2013). The notion of merging IPAs has been categorically opposed by PEZA, whose director stated: "We believe PEZA's performance *vis-à-vis* the other investment promotions agencies must be appreciated or, put in other words, PEZA should not be punished for bringing in the most foreign direct investments into the country" (Magkilat, 2014).

How it works – how is agro-industry specifically targeted?

Agro-industry and food processing are two of the ten priority sectors targeted for investment promotion efforts by PIPP. Each sector is assigned to agencies with the greatest competencies in that area (Aldaba, 2010). For agro-industry, this means PEZA and BOI, but not the CDC and SBMA IPAs.

PIPP calls for customized strategies to attract different kinds of investment (see Table 21). Because of its economic importance to the country, investment in agrobased industries is to be promoted aggressively by IPAs. Together with the standard promotion strategies shown in Table 21, in the Philippine Development Plan 2011–2016, the Government has outlined a number of different activities to improve competitiveness in the sector. It pledges to support growth in the industry

TABLE 21
Investment promotion strategies by type of investment

Type of investment	Strategy
Greenfield FDI	Promote specific projects ready for investment or joint venture
	Identify and target companies with interest and capacity to invest in the Philippines
	Outbound promotion targets countries best suited to the target sector
	Inbound business-matching events
Expansion	Encourage expansion aggressively with resident companies
	Arrange round-table meetings, business matching and investment briefings
	Provide relevant marketing studies
	Aftercare programme (through BOI)
Mergers and acquisition	No strategy
Agrobased industries	Provide incentives
	Identify land suited to specific agricultural products
	Expand export markets for products through international promotion events; address market access issues
	Support production of raw materials to feed into supply chain
	Strengthen certification systems
	Strengthen packaging of food products

Sources: Aldaba, 2010; BOI, 2015.

through market expansion, including leveraging new free trade agreements (FTAs) to increase Philippine agricultural and processed exports, and improving quality to meet market demand specifications. The Government also intends to strengthen certification systems such as good manufacturing practices (GMPs), Hazard Analysis Critical Control Point (HACPP), and ISO 22000 as well as halal and kosher food standards and certifications. Finally, the Government intends to invest in infrastructure and logistics systems, and land tenure reform efforts, to support the industry. Such efforts have made the country attractive to potential investors, although investments have not materialized as quickly as might be hoped (Aldaba, 2010).

Sectoral promotion strategies are streamlined across IPAs, whereby IPAs communicate the same set of information and promotional materials. To catalyse agro-industrial investment, IPAs use a combination of passive and active outreach methods. Web site effectiveness is the cornerstone of passive tactics, providing interested businesses with facts, figures and leading investment information on priority subsectors (i.e. agro-industry profiles on processed fruit and vegetables), as well as guidance on how to set up a business and specific information on investment laws, rules and regulations. A set of agro-industry profiles, available online to investors, includes information such as: commonly processed materials; primary location of existing activities and/or production areas; list of businesses already engaged in this or similar activities; major markets; discussion on how businesses obtain raw materials (e.g. contract farming); supportive hard (logistics, cold chain) and soft (industry associations, financial services) infrastructure; illustrative cost of doing business; government support programmes; and legal and regulatory framework (BOI, 2015). Agro-industrial profiles are available on the BOI Web site for processed fruit and vegetables, seaweeds, mango seed oil and fisheries, among others.

Active outreach is customized to the different kinds of investment such as greenfield FDI, business expansion and sector-specific efforts. Outreach is informed by research that supports the promotion of specific investment projects such as marketing studies and land mapping for agrobased industries. Investors are also made aware of special efforts to modernize the agro-industrial sector to improve product quality and supply chain efficiencies such as strengthening certification systems, improving raw material quality and improving the packaging of food products. IPAs use this information to target specific companies or types of investors through investment briefings, round-table meetings and business matching. They also participate in key international marketing events, such as the Salon International de l'Agroalimentaire (SIAL).

Once businesses are engaged in the investment process, most IPAs assist them in obtaining permits for business licences, tax concessions, work permits for foreign managers and staff, approvals to lease or purchase land, change zoning restrictions, permits from local government units and other national agencies, connections to public utilities, environmental impact assessment and finding local suppliers (Aldaba, 2010).

Investment promotion best practices: how does the Philippines measure up?

International best practices in investment promotion are well documented by the IFC Investment Policy and Promotion team of the World Bank. Fourteen actions that lead to improved investment facilitation are presented in Box 61.

BOX 61
Steps to becoming a top investment promotion agency

Foster a private sector-minded culture

1. Build up staff with public and private sector experience
2. Offer salaries and bonuses closer to private sector standards
3. Secure operational freedom and high-level reporting channels
4. Establish and concentrate efforts in a few priority sectors
5. Coordinate facilitation with networks and partners subnationally and overseas
6. Maintain English-speaking staff in sufficient numbers and with the full range of facilitation skills
7. Continually train and develop staff, especially in soft skills

Accumulate deep business knowledge

8. Establish a minimum level of in-house research capacity
9. Develop account managers into reservoirs of knowledge on particular sectors
10. Ensure the accumulation of knowledge and its relevance

Implement internal systems for consistently good facilitation

11. Make facilitation a priority within the overall strategy, training and dedicating an adequate proportion of staff
12. Maintain the equipment and practices to be easily reached and quickly return calls and e-mails
13. Demonstrate professionalism and dynamism through the Web site with frequent news updates of importance to investors
14. Follow detailed guidelines on the content, style, time frame and quality assurance of inquiry responses

Source: Ortega and Griffin, 2009.

How does the Philippines measure up, and how do IPAs' performance compare? FDI inflows to the Philippines have lagged behind the country's neighbours in Southeast Asia, and agro-industry inflows have underperformed with regard to their investment goals (Aldaba, 2010). BOI leads performance among IPAs in total investment (domestic and foreign). It registered 53 percent of total investment from 2000 to 2009, while PEZA registered 38 percent. However, PEZA leads in attracting FDI, improving performance over time from a 46 percent share of FDI from 2000 to 2009 (Aldaba, 2010) to approximately 90 percent in recent years (Campos, 2015). PEZA generated a total of US$21 trillion in FDI from 2008 to 2013, whereas BOI generated US$7.7 trillion during the same period (Magkilat, 2014). PEZA's exclusive export orientation allows it to target foreign investment more effectively. The greater share also coincides with a period of growth in the region driven largely by FDI (Aldaba, 2013).

Overall, qualitative performance of IPAs is considered to be fairly good. Results in Table 22 emerge from a survey of Philippines IPAs and private firms conducted in 2010 (Aldaba, 2010).

TABLE 22
Philippines investment promotion agency scorecard, 2010

Characteristic	Score (%)
IPA quality Private sector-minded culture, deep business knowledge, internal systems for good facilitation	86.3
Investment promotion and facilitation strategy Clear strategic vision, where and how to compete	80
Investment generation Promotion and image-building activities	100
Investor servicing One-stop shops, aftercare services	89.5
Investment policy Transparency, predictability, consistency	92
Average	89

Source: authors' elaboration, based on Aldaba, 2013.

Looking more closely at the broader strokes of the IFC framework to assess IPA effectiveness in the Philippines, areas for improvement, particularly with respect to agro-industry, begin to emerge:

1. *Build a private sector mindset within a public sector body*. The 2010 survey of IPAs revealed that most IPAs do not compensate staff as well as the private sector and only BOI has overseas offices. However, resources are generally considered adequate and IPAs feel they have operational freedom, including the ability to allocate resources as they see fit (Aldaba, 2010). Each IPA focuses its efforts in the priority sectors that match its comparative advantages.[68]
2. *Accumulate deep business knowledge.* All IPAs have sector-specific staff with research capability. There is general awareness of competitiveness and comparative advantage, prioritizing agroprocessing activities such as coconut oil and beverages. However, the notion that the same information is used by all agencies to promote investment in various agro-industrial activities dilutes the specificity of investment opportunities. For example, PEZA uses the same industry profiles as BOI, although it may have identified very specific opportunities within its economic zones. Moreover, given the broader constraints to growth in the sector, greater attention to supporting infrastructure and cost competitiveness could be emphasized.
3. *Implement internal systems for consistently good facilitation*. All IPAs honour customer response guarantees.[69] For example, application pro-

[68] BOI works with all sectors.
[69] This assumes that all paperwork is to be completed prior to submission of the registration application. For example, Rocky Mountain received approval quite quickly from PEZA after a three-month process that required touchpoints at nine different government agencies.

cessing for registration of new ecozone agro-industrial enterprises takes no longer than 21 days (PEZA, 2000), and guaranteed response period for frontline service facilitation is 72 hours. Web site effectiveness could be improved, but is considered adequate (see Box 62). Each IPA communicates a clear objective or objectives and assigns annual targets for new investments. IPAs seem to work autonomously to achieve their goals, coordinating with each other and relevant government departments where appropriate. For example, PEZA's Board is chaired by the Secretary of the Department of Trade and Industry, with Undersecretary representatives from nine government departments, including the Department of Agriculture. This composition is aimed at increasing coordination among various government departments.

Philippine IPAs have a shared mandate of investment promotion and regulation. The one-stop shops housed within IPAs are responsible for directly handling more than 80 percent of regulatory approvals and registration procedures. The cohabitation of the two functions could partially cause the lag in new investment, according to a World Bank study (Whyte, Ortega and Griffin, 2011). The study suggests that the two functions be kept separate. Using PEZA as an example, its mission statement is "to provide a globally competitive environment to investors through: effective management of economic zones; efficient administration of incentives; utmost delivery of services; focused investment promotion; and proactive developmental activities". Accordingly, its institutional structure is organized around its regulatory functions. Departments include Enterprise Regulation, Enterprise Operation, Support Services (for building permits), Ecozone Development, Foreign National Unit and Services Registration Unit (for visa processing, freight forwarding, etc.), and Environmental Safety (PEZA, 2000). PEZA received perfect scores for its one-stop shop operations, but could arguably perform its promotion efforts better (Aldaba, 2013).

BOX 62
Web site effectiveness factors

- Adequacy of information
- Facts and figures on country and economy
- Investment laws, rules and regulations
- Setting up business in country
- Priority industries, sectors and clusters
- Success stories highlighting country's strengths
- How IPA helps an investor make a project happen
- Functionality: maps, interactivity, animation, videos
- Facilities handling investor inquiries and concerns

Source: Aldaba, 2010.

Despite relatively positive performance feedback, businesses complain of numerous problems associated with establishing a business in the Philippines. These include bureaucratic, complex, lengthy and costly procedures; lack of transparency in guidelines and procedures; corruption, particularly at the local level to obtain ordinance fees and permits; and inconsistent policies (Aldaba, 2010). Firms also suggested greater emphasis on investor assistance and investment promotion (Aldaba, 2013).

Three interesting lessons can be drawn from this case: (i) the confusion created by the existence of many public agencies with overlapping mandates for investment promotion; (ii) the (unusual) superiority of local versus national investment promotion agencies; and (iii) the need to separate the institutional mandates of promotion and regulation.

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Chapter 8

Governance issues and public institutional support

> *"Making more and better investments in agriculture is one of the most effective ways to reduce hunger and poverty while safeguarding the environment. The challenge is to focus the investments in areas where they can make a difference."*
>
> José Graziano da Silva, Director-General of FAO, December 2012

Discussions of the agro-industrial promotional tools have in all cases referred to the importance of effective governance for investors and other stakeholders, and the various roles that the public sector should or could play. This chapter examines good practice for the governance of these territorial tools and the role of the public sector in supporting their development and success.

The chapter starts with an overview of challenges relating to governance and public sector support and then goes on to examine governance; the role of the public sector in governance and implementation; public sector roles in promoting and operationalizing territorial agro-industrial initiatives; and the role of public-private partnerships (PPPs).

8.1 CHALLENGES AND REQUIREMENTS

Each investment promotion tool has its unique governance, and related challenges and requirements, which vary by type of instrument and according to the economic, political, social and geographic specificities of the location and environment. Yet it is striking that there are many commonalities among governance concerns. Similarly, each investment promotion tool has vital requirements for supportive public sector action. These challenges and requirements are often shared by the various tools and have been introduced in separate chapters of this Sourcebook. Table 23 summarizes these elements.

The commonality of many of these themes is unsurprising, given that all the tools share certain objectives, components and approaches, such as the following:

- *Focus on downstream value added agribusiness markets*. Each tool seeks to attract globally competitive investments that add value to more basic agricultural or processed production, and that are destined for higher-value markets.
- *Supply chain linkages with upstream agricultural production*. Investments are predicated on the reliable and cost-effective availability of supply, and therefore require effective supply chain relationships.

TABLE 23
Important challenges and requirements related to governance and public sector support

Tool	Governance	Public institutional support
CORRIDORS	▪ Select and implement the most appropriate model for corridor governance to manage and implement the corridor programme ▪ Engage the multistakeholder principle: involve local civil society and Non-governmental Organizations (NGOs); ensure engagement of private actors in corridor governance mechanism ▪ Establish a strong mandate and mechanisms for intersectoral, multilevel and multistakeholder coordination ▪ Support governance mechanism with high-level political support that sends investors a clear signal about the government's commitments ▪ Monitor and evaluate results	▪ Select and implement the most appropriate model for delivering public support services to the corridor ▪ Find optimal mix of elements that optimize competitiveness ▪ Mainstream adoption of inclusive business models that empower smallholder producers and small and medium enterprises (SMEs) to participate in and benefit from corridor initiatives ▪ Design for scale and mobilize the right "change agents" ▪ Ensure the availability of sustainable financing models and risk reduction mechanisms to assist in attracting investment ▪ Ensure the provision of an adequate agribusiness environment, including property rights and stakeholder inclusiveness ▪ Adopt sound environmental strategies for the corridor
CLUSTERS	▪ Implement effective public-private dialogue (PPD) and build trust among cluster participants ▪ Convene the cluster; establish the psychological "contract" ▪ Allow clusters (and their governance) to emerge organically ▪ Provide credible public sector champions that help to mobilize cluster leaders, especially from the private sector ▪ Monitor and evaluate results	▪ Observe and map existing cluster network ▪ Ensure strategy setting using cluster diagnostic tools and identifying strategic initiatives ▪ Strategy drives policy – ground strategies in commercial market realities ▪ Finance agrocluster initiatives and mobilize investment ▪ Provide an open foreign direct investment (FDI) promotion policy ▪ Devise green growth or environmental strategies for cluster
AGROPARKS	▪ Adopt a multistakeholder principle by consulting with stakeholders throughout design and implementation ▪ Set and adhere to transparent criteria and processes to select park operators and tenants ▪ Favour governance models that ensure participation of public and private park actors, paying attention to role allocation; foster coordination among them ▪ Establish effective ownership structures to facilitate financing and effective operation ▪ Provide sound park management: privilege private sector involvement in operation and maintenance; if management is on PPP or private basis, ensure low transaction costs ▪ Set up agile governance arrangements such as one-stop shops for streamlined delivery of public services ▪ Monitor and evaluate results	▪ Conduct sound preparatory work, including feasibility analysis, to select location, industry and supply chains that reflect sound strategic choices regarding elements such as location, value chain focus, objectives (including economic and non-economic considerations) ▪ Implement transparent process of land acquisition ▪ Implement an effective startup role, including startup investments in public goods such as on-site and off-site infrastructure ▪ Market and promote park initiative (e.g. by involving investment promotion agencies [IPAs]) ▪ Enhance legal framework and policies that support development and operation of agroparks ▪ Ensure investments in infrastructure and services and provide or attract financing, including private investment ▪ Provide public services and support value chain linkages ▪ Devise sustainability strategies (e.g. profitability, environmental)

- *Physical, spatial factors*. Investors seek comparative territorial advantage to maximize logistics efficiencies, access services and human resources, and maximize supply chain advantages. Planners take these factors, as well as spatial economics factors, into account.
- *Need for some level of enabling infrastructure*. Each tool requires platform infrastructure in the form of facilities and services, and more basic infrastruc-

TABLE 23
(continued)

Tool	Governance	Public institutional support
SPECIAL ECONOMIC ZONES	▪ Encourage stakeholder involvement through transparent consultations and policy vetting ▪ Avoid abusive influence of vested interests ▪ Ensure strong leadership and support at highest levels of government ▪ Delineate roles and responsibilities for major functions of special economic zone (SEZ) ownership and management; establish clear and balanced institutional structures ▪ Establish autonomous bodies that serve as one-stop shops for permits and authorizations ▪ Manage (or outsource the management of) the zone, ensuring that flexibility in management is maintained and sustainability promoted ▪ Monitor and evaluate SEZ performance	▪ Carry out preparatory work to select location and industry and supply chains; conduct feasibility studies and often select sites and land packages ▪ Design: physical design, location, institutional and governance choices ▪ Secure land or facilitate private access to land ▪ Market and promote the zone to prospective tenants ▪ Develop SEZ legal, policy and regulatory framework - Land use and regulatory guidelines - Remove legal/regulatory/procedural hurdles - Customize regulation and procedures for import of agricultural and agro-industrial inputs - Fiscal and other incentive packages to encourage investment - Clear environmental policies; incentivize by-product utilization - Allow unrestricted sales to domestic and regional markets - Policy coordination, leadership and links to broader policy framework ▪ Ensure enabling investments in infrastructure and services and finance the zone (including financial incentives) ▪ Possibly implement initiatives to encourage domestic sourcing of raw materials; strengthen supply chain linkages ▪ Implement supportive workforce development programmes
INCUBATORS	▪ Ensure market-responsive private or public-private governance ▪ Involve stakeholders in planning and overview ▪ Adhere to clear selection and operating criteria ▪ Ensure professional management and operation of public sector sponsored or operated incubators ▪ Monitor and evaluate results effectively	▪ Identify when to set up agribusiness incubators, and when a public sector role is needed ▪ Plan location and size of agro-incubators ▪ Provide adequate financing ▪ Develop and implement clear plans and targets for self-financing ▪ Ensure a sound entrepreneurial ecosystem

Source: authors' elaboration.

ture in the form, for example, of transport, water and power. These may be substantial investments.
- *Requirement to attract investment capital*. Promoters recognize the need to bring initiatives to the attention of investors and financiers, and demonstrate the initiatives' feasibility.
- *Mobilization of business to implement agro-industrial operations and links to market*. Each tool provides facilities in which tenant or similar businesses can locate.
- *Emphasis on improving the enabling environment* for agribusiness development.

Because of these similarities, underlying principles and good practice tend to be related and shared, although they may vary in scope and importance.

8.2 GOVERNANCE

The literature provides any number of definitional nuances for "governance". Nevertheless, they are generally in alignment. A simple and straightforward definition views governance as the creation and proper implementation of policies through continuous overview by governing members, while including mechanisms that balance member power and increase the viability of an organization. This "corporate governance" perspective includes the set of rules and practices that ensures accountability, fairness and transparency between a company and its stakeholders – financiers, customers, management, employees, government and the community. The framework involves contracts between the company and the stakeholders that distribute rights, expectations and compensation; procedures for internal conflict resolution and reconciliation; and procedures that ensure a balance of power through supervision, control and information channels (Business Dictionary, 2015). The investment promotion tools discussed in this Sourcebook need to consider both sound corporate governance and governance within the context of political, social and economic objectives.

In 2006, the United Nations Economic Commission for Europe (UNECE) published a *Compendium of basic terminology in governance and public administration*, which cites several authorities' definitions of both governance and good governance. It is a useful reference source that helps to triangulate governance concepts. Possibly drawing on this resource, FAO (2014a, p. 1) provides a definition for governance as embracing all formal and informal rules, institutions and processes through which public and private stakeholders articulate and prioritize their interests, and execute and oversee decisions. Similarly, the United Nations Industrial Development Organization (UNIDO/UNEP, 2010, p. 9) sees governance as the processes and interactions by which a company, institution or government makes decisions, interacts with its stakeholders and accounts for its achievements.

The Asian Development Bank (ADB) identifies four pillars – accountability, participation, predictability and transparency – for its policy on national institutional governance. These are described briefly in ADB (1995), and are referred to frequently in this chapter. They are highly interrelated and mutually reinforcing. According to ADB (1995, p. 7), governance is synonymous with a sound development management process; it involves the functions of both the public and private sectors and includes the regulatory and business frameworks of each sector.

TABLE 24
Pillars of governance

Accountability	Making public officials answerable for their behaviour, actions and decisions, and being responsive to the entity from which they derive authority
Participation	Enhancing people's access to and influence over policy- and decision-making
Predictability	Fair and consistent application of laws, regulations and policies to regulate society
Transparency	Availability and accessibility of information to the public, and clarity of rules and regulations

Source: ADB, 1995.

Weak political and economic governance is a barrier to both domestic and foreign investments, particularly in sectors where risks are perceived to be inherently high, such as agribusiness and agro-industries. Particularly in these sectors, governance shortcomings translate into added costs of doing business and increased risks, thus reducing return-to-risk ratios and attractiveness of investments (FAO, 2013).

Defined objectives and targets are important in making parties *accountable* – they provide clear performance measures. Institutionalized mechanisms, such as financial and management systems, also foster accountability.

Participation is a recommended element of many implementation tasks. From the governance perspective, beneficiaries and affected groups, investors and government all seek participation in decision-making and management. Disciplined structures for and commitment to consultation and participative dialogue foster participation, clear delegation of responsibilities and the principle of subsidiarity, which devolves responsibility for services and decisions, also important elements of participation. The public-private nexus described below is an important element of the participation pillar.

Predictability derives largely from a committed government and clear, facilitating laws and regulations that are enforced and upheld. Consistent and coordinated policies among all government ministries and agencies also provide predictability.

Experience and literature agree that good governance requires institutional structures and rules that can be counted on – poor governance generates uncertainty – and hence that are predictable and transparent. Referring to the Maputo Development Corridor (MDC) and Walvis Bay Corridors, an analysis of corridor governance observes that, while there is no single model for governance, spatial development programmes have a higher chance of lasting success when they have clear and transparent policy-making authority with sufficient checks to ensure that this authority is used appropriately (Kuhlmann, Sechler and Guinan, 2011, p. 16).

Transparency is ensured by availability and access to information, rules and regulations, performance data, etc., and the requirement to disclose them. Transparency is enhanced by strong participatory mechanisms.

Experience and the literature further emphasize that one cannot talk about good practice in governance without talking about the public-private nexus. Governance involves a continuum of public and private roles. Individual public administrations and societies will make choices based on their individual principles, philosophies and preferences. But it is clear that both the public and private sector each play certain roles better than others.

Ownership and management are, of course, also important elements of the governance mechanism. In discussing the five investment promotion tools, it has been seen that each tool can be owned and managed by a variety of public, private and public-private mechanisms. Ownership arrangements, board structure and mandate, and management structure are all vital decisions that must be made carefully to ensure sustainable good governance. Decisions regarding these structures need to be addressed from the outset, and with input from stakeholders.

When the public sector is the governing authority, it faces particular challenges to ensure that ownership and management mechanisms adhere to the four pillars and to the legal framework, and are not hidden from public scrutiny or interfered with by any political stance. The same applies in the case of a PPP but with the additional requirement that the engagements, rights and recourses for each party are made clear. Private ownership and management are perhaps formally more straightforward, since the requirement is to operate within a legal and regulatory framework.

The choices relating to ownership and management should reflect both the country's institutional realities, and the practical requirements for achieving objectives and results. Topics of ownership and management are discussed more fully in individual chapters and later in this chapter.

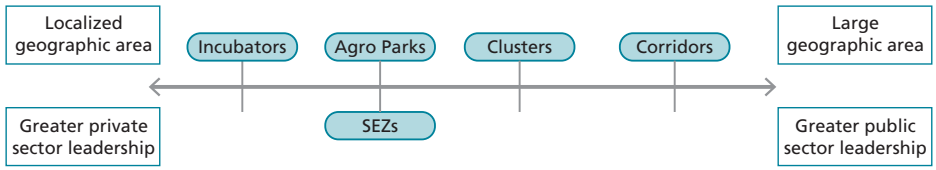
8.3 ROLE OF THE PUBLIC SECTOR IN GOVERNANCE AND IMPLEMENTATION

What should be the *public sector's role* in governance and implementation? What should be the *private sector's role*? There is no single clear answer. Decisions with regard to roles must take into account various economic perspectives and strategies.

The various instruments discussed in this book can be mapped along a continuum that depicts the degree of localization of developments. At one extreme, corridors would typically encompass the most expansive geographic area. Incubators, on the other hand, are found in specific locations. Generally, the more localized the initiative, the more the governance role can be effectively played by the private sector. Conversely, initiatives that cover large geographies and possibly political demarcations, or large and diverse populations, will typically require or attract more substantial public sector involvement.

Conceptualization of the public-private continuum is referred to in FAO (2013). The publication recognizes that the public role may encompass varying elements,

FIGURE 23
Tools and governance responsibility vary by geography



Source: authors' elaboration.

but it also highlights the inherent risks. It observes that government is traditionally perceived as the creator of an effective enabling environment that encourages private sector investment. If decisions and their implementation do not wisely assess and take the private sector's needs into account, the government risks misallocating resources and permitting an enabling environment that imposes costs on and barriers to sound investment (FAO, 2013, p. 14).

Governance arrangements must reflect the need to attract substantial private investment, and hence must reflect the needs and preferences of investors and businesses. Since agro-industrial developments seek to attract private investment, governance arrangements must be those that provide appropriate guarantees and levels of risks for investors.

Public sector involvement, whether by direct implementation, provision of incentives or contracts, or by PPPs, will need to be relatively more aggressive where there is an element of market failure that inhibits initiatives and investments from taking place. Moreover, public sector attention and involvement will tend to be greater where geographic assets or investments are considered to be a public good.

Box 63 describes several weaknesses in the governance and support arrangements for industrial development zones (IDZs) and SEZs in South Africa. The issues, which seem to derive from government control, exclusion of the private sector from a governance or management role and failure to meet investor needs, are formidable.

Some spatial development initiatives (SDIs), particularly corridors, agro-industrial zones and agroparks, may benefit from the focused management capability and

BOX 63

Lessons in governance and public sector support for special economic zones

The establishment of IDZs has not significantly impacted South Africa's economic growth or economic prospects. SEZs have failed to deliver expected investment and jobs. Rather than attracting new investment, SEZs have resulted in the relocation of business from other locations in the country to the zones (Altbeker, McKeown and Bernstein, 2012, p. 2).

Why this disappointment? South Africa offered investors no special incentives and, despite promises, zone-based businesses have not received improved value added tax (VAT) management or management of tax obligations relating to imports and exports. The social, labour and environmental rules in force in the zones do not differ from those elsewhere. Lack of an overarching policy framework has resulted in weak governance, planning, implementation, management and operations (ibid. p. 3). SEZs suffer from poor interagency coordination – for example, no SEZ has offered a customs-secured area or one-stop shop for customs duties, tax or regulatory requirements of business registration. South Africa's SEZs are entirely government owned, promoted and financed, with a public sector zone operator responsible for management and all provision of services to firms. In contrast, international best practice requires interdepartmental collaboration, and consistent political commitment is necessary for successful SEZs. Best practice also requires greater private sector involvement in SEZ ownership and management.

Source: Altbeker, McKeown and Bernstein, 2012.

authority of a special agency. UNECE (2008, p. 17) notes that governments have often created special agencies to address complicated planning and implementation requirements, giving them special powers over land acquisition, development regulation and investment funding.

Given the unique powers granted to these organizations, they can catalyse change in policy. It is prudent to have such agencies established where there is little capacity to address spatial development issues, and working with and representing local stakeholders while operating under national and regional planning policies (ibid., p. 18).

These agencies have often lacked effectiveness, however, for a variety of reasons. They may fail to engage local authorities and other stakeholders, diminishing participation. They may lack accountability or transparency for stakeholders, particularly the communities involved.

Any decision to create a dedicated agency to manage an SDI should be carefully considered and alternatives weighed. There are many cases where establishing an agency appears to be no more useful than as a pretext for creating another administrative entity of weak capacities, that will seek to justify its existence and will be difficult to remove. In some environments, potential conflicts of interest arise when the margin between private sector management and benefit capture by an elite is fairly thin.

BOX 64

Cambodian SEZ law accords government a basic or leading role, but permits private sector leadership

Definitions

SEZ administration refers to the state administration management unit, which is the "one-stop service" mechanism at the SEZ site and is responsible for approving and issuing permits, licences and registrations to zone investors. This includes approving incentives, pursuant to the full authority delegated by line ministries and institutions, and addressing all requests concerning investments in the zone related to the management competence of the state.

SEZ refers to the special area for development of the economic sectors that brings together all industrial and other related activities and may include general industrial zones and/or export processing zones. Each SEZ has a production area that may have a free trade area, service area, residential area and tourist area.

Zone developer refers to a Cambodian and/or foreign natural or legal person, who implements the qualified investment project and is permitted to invest in the development of physical infrastructure in the zone, organizes business and services, and ensures the safety and security of zone investors.

Page 5. The SEZ may be established by the state, private enterprise or joint venture between state and private enterprise.

Page 13. *Incentives for SEZ procedures for incentives*. The Cambodian SEZ Board examines and provides incentives to all SEZs in the country.

Source: JICA, 2012, p. 90.

Strong government (and high-level decision-makers within government) championship is particularly important when the SDI represents a significant initiative within the economy, in terms of territory or population affected and/or public expenditure or political statement.

Transparency and involving the variety of stakeholders in SDI governance can counterbalance the risk of political interests skewing important decisions and ongoing management. FAO (2014b) notes the persistent risk that, given the political importance of (many of) the investments, location may be politically determined, rather than by economic and business rationale and locational comparative advantage. Consequently, multistakeholder governance mechanisms are used to ensure that areas, sectors and industries are not chosen on political grounds or as a result of lobbying from special interests (FAO, 2014b, p. 26).

Business offers important skills, networks, market and financial linkages, bottom-line discipline and other important resources and capabilities. However, if governance were too much a business responsibility, there would be concern that the interests of political and community stakeholders are not sufficiently taken into account (Kuhlmann, Sechler and Guinan, 2011).

BOX 65

Maputo Development Corridor: championship, and balancing the roles of the public and private sector

Mozambique has been the focus of several SDIs. The Maputo Development Corridor (MDC) was the original development, starting in 1995. Söderbaum (2001) observes that MDC's success illustrated the importance of strong political commitment and will provided by *political champions*.

The SDI approach encourages trade and investment along development corridors by focusing on large, often extractive industry-based anchor projects and strategic infrastructure investments, and promoting value-added activities to enhance the region's economic competitiveness (World Bank, 2010, p. 18). In pursuit of these goals, MDC aimed to work with the private sector to maximize investment and rebuild infrastructure along the corridor. It successfully reduced transport and logistics costs with the help of PPPs that upgraded border crossing and transport and power infrastructure. Furthermore, the corridor was able to address policy constraints, also through measures at the border.

MDC's initial funding came from the Governments of South Africa and Mozambique, BHP Billiton, Mitsubishi and the International Finance Corporation (IFC). MDC attracted more than US$5 billion in private investment between 1996 and 2005. It is managed by a private sector body that is considered to be an efficient corridor manager. However, this body was not mandated to address agricultural development or agribusiness in particular.

Source: Kuhlmann, Sechler and Guinan, 2011, p. 12.

8.4 PUBLIC SECTOR ROLES IN PROMOTING AND OPERATIONALIZING TERRITORIAL AGRO-INDUSTRIAL INITIATIVES

A shorthand definition of public institutional support in the context of promoting and operationalizing an SDI would be the "role of government" and its effectiveness in this role, i.e. what a public sector chooses or agrees to do, and how it can do it well. The public sector has a role in most initiatives, although its role tends to be more significant in initiatives that involve or impact large territories and populations. It also tends to play a more significant role in the earlier, or planning and development, stages of an initiative. A public sector role is ongoing, but will evolve according to the life cycle of the tool.

Table 23 summarized key elements of public sector support that are mentioned in the chapters on individual investment promotion tools. Public sector support differs from governance – it incorporates a broad set of services, but can also be understood to include elements of governance itself.

Specific roles for public institutions

Any listing of possible government roles would necessarily be incomplete. In addition to the nine roles discussed below (and shown in Box 66), further activities could be added, such as improving access to finance, enacting and enforcing food safety standards and land-use planning.

The listing could also be contentious in that a strong argument might be made for many of the roles to be directly filled by private actors while government responsibility rests, as previously discussed, with the catalytic and enabling functions.

Nevertheless, the nine roles would typically be implemented by the public sector, or with strong public sector involvement. Many, or even most, would be implemented in collaboration or consultation with business, farmers and civil society:

1. *Public-private consultation and dialogue, and community building*.[70] Consultation will inform public decision-making and build the confidence of private stakeholders whose commitment and collaboration are needed for the scheme to be successful. This consultation informs public sector decision-making and builds trust among investors and affected communities. Consultation is needed on an ongoing basis, and especially at specific planning and decision-making times. It should encompass deeper collaboration when joint action is required.

   PPD should be a two-way process, jointly owned by both public and private interests. Trust needs to be built and maintained for PPD to be effective – trust that the dialogue is sincere, vision and objectives are well articulated and shared, and parties take their commitments seriously and implement them studiously, as shown in Figure 24. While substantial informal dialogue should always be a feature, venues and processes should be established for regular public-private interaction.

   Public and private sectors must be ready to deal with issues and disagreements as they occur. Disagreements are inevitable. The public sector should

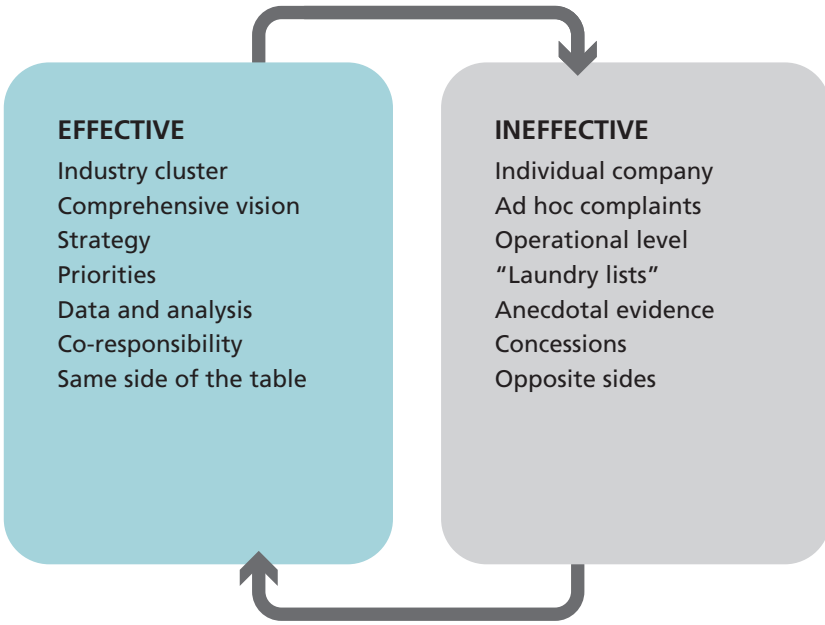
[70] See FAO (2016a) on PPPs for agribusiness development. The World Bank Web page on PPPs is an excellent resource for effective PPD: http://www.worldbank.org/en/topic/publicprivatepartnerships

BOX 66
Nine roles of public institutions

1. Ensure public-private consultation and dialogue, and build community support
2. Set out strategic objectives and strategy that will enable or implement the tool
3. Ensure sound feasibility analysis
4. Implement sound enabling policy and legal/regulatory frameworks
5. Provide or encourage the basic investment that will enable follow-on investment and promote platform and follow-on investment
6. Ensure that resources needed to catalyse the tool are available
7. Ensure support of public sector ministries and agencies, and various jurisdictions
8. Support market-based supply chain development and operation
9. Facilitate movement of goods, and trade

Source: authors' elaboration.

FIGURE 24
Pursuing effective public–private dialogue



Source: authors' elaboration.

take steps to air and address issues quickly as they arise, and be seen to do so in a concerned, transparent, legal and fair manner.

In line with the need to *build community support and inclusion*, communities should also be part of this dialogue, both at the outset and on an ongoing basis, which may include substantial outreach to and awareness building within neighbouring communities. Communities may question the impact of an SDI on their social fabric and on their local economy. Land acquisition or use will often be a major issue. Investors will be wary of locating operations where neighbouring communities do not see benefit from the investment, or do not "buy in" to the development.

The public sector, at the national and especially at the local level, can play an important role by consulting affected populations (many of which may be beneficiaries) on the design and governance of proposed initiatives, assisting investors to engage postively with these stakeholders, ensuring continual dialogue, and including local representatives in governance organization and processes.

2. *Set out the strategic objectives and strategy that will enable or implement the tool*. While strategic objectives and the accompanying strategies need not originate with government (they can emerge from private initiatives or PPD), government will nonetheless play a leading role because of the attention it must pay to territorial constituencies and to fit in with other strategies and policies. Decentralization will naturally affect which level of government shows leadership, and the degree of government leadership will vary along the public-private continuum, based on the territorial scope of the initiative. For example, in speaking of clusters, Singh (2003, p. 15) suggests that government is uniquely positioned to support clusters in ways that can be challenging and expensive for a single firm or organization.

   Akinci and Crittle (2008) state that, although the rationale behind developing SEZs varies from country to country in developing nations, SEZs have been driven for the most part by a policy and infrastructure development objective. According to Cling and Letilly (2001), there are four main policy objectives in developing an SEZ. These are an economic reform strategy that will allow the country to diversify its economy and exports; serve as a job-creating mechanism and alleviate unemployment (zones in Tunisia and the Dominican Republic are a good example of job-creating programmes); test new policies and financial and legal frameworks; and attract FDI (Akinci and Crittle, 2008). Other objectives for investment promotion tools might include, among many others, improved connectivity, enhanced innovation, increased export competitiveness and greater value addition.

3. *Ensure sound feasibility analysis.* Government will carry out or coordinate the feasibility analysis for the initiative when large territories are involved, or when implementation will be by the public sector. The feasibility analysis should include social factors and policy requirements, as well as business, economic and physical factors. Where government's role is limited to establishing an enabling framework, the feasibility study for implementation should be carried out by the private promoters. Any feasibility analysis should consider the political risks associated with the initiative, and the effectiveness of the public sector in providing relevant support.

The feasibility analysis should be carefully validated and discussed transparently with stakeholders, to achieve support and buy-in, and to ensure that the assumptions inherent in the analysis are not limited by promoters' biases.

Cluster development is perhaps a special case, since many clusters have developed to an advanced level in response to market opportunity and confluences of comparative advantages, institutional developments, skills and prior business investment, without overt public or private strategy or management. Much of the success of clusters is attributed to the density of the network of businesses and supporting institutions. As discussed in Chapter 3, although there are examples of successes, it is still unclear as to whether clusters can be created, especially by public sector action.

As also discussed, a cluster assessment or diagnostic is an important tool to determine the appropriate role, if any, for the public sector to help develop a cluster. Singh (2003, p. 16) suggests that a cluster assessment is necessary to determine strategic priorities and performance targets for a cluster implementation plan. The assessment should determine the cluster's global competitive advantages, its relative strengths and weaknesses com-

BOX 67

Kenya policy framework for the industrial sector – impact on agro-industrial development

Kenya's Vision 2030 provides a strategy for increasing local production capacity, developing regional markets for Kenyan products and new agricultural products for niche markets. Vision 2030 foresees that consolidation and new special zones and parks will target services better and encourage new and growing export-oriented agro-industrial enterprises. It also proposes the development of industrial clusters and other actions (Republic of Kenya, 2007).

Vision 2030 foresees a pilot agro-industrial zone that includes activities such as mixing and packaging fertilizers, tea and coffee, and a meat and fish processing facility to support the growth of offshore fishing. This initial pilot zone will be located in Mombasa to facilitate easy import of inputs and export of finished products. Vision 2030 also plans pilot agroprocessing clusters in the city of Eldoret, because of its airport access and potential for significant agricultural growth, and in Kisumu, for the processing of vegetables, horticulture, fish processing and production of fruit juices. An SME park for meat processing will be established in Nakuru (Republic of Kenya, 2008, p. 77).

Kenya seeks to encourage research and development (R&D), in part through a technology policy that includes incentives to increase funding for private sector industrial R&D, particularly in agroindustry. Vision 2030 envisions that the Kenya Industrial Research and Development Institute will collaborate with sector associations, training centres, standards institutes and technology support bodies to play a key role in linking public and private sector research institutions to spread technology more effectively among players in the agro-industrial sector.

Source: Wohlmuth, Kormawa and Devlin, 2012.

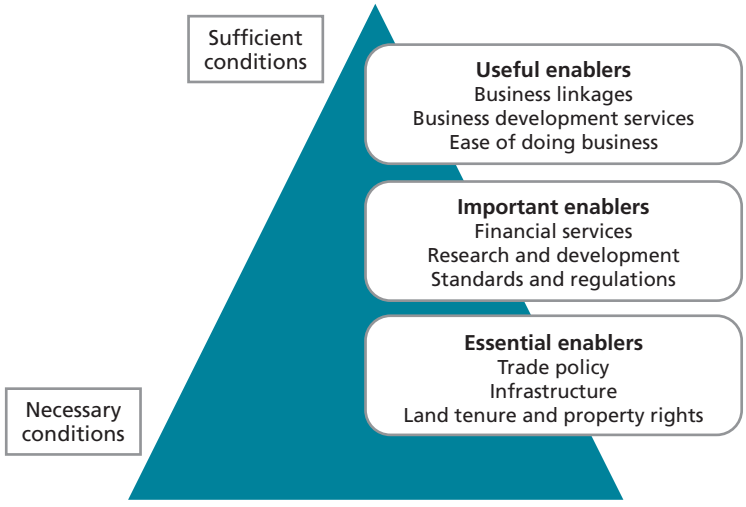
pared with other regions, its innovation strength and existing government initiatives that may affect the cluster. In instances without a proper cluster assessment, policies can be implemented without a clear understanding of a cluster and its needs.

4. *Implement sound enabling policy and legal/regulatory frameworks*, which will permit effective and efficient development and operation of a market-based, competitive initiative.

   Focusing on agribusinesses and agro-industries, Christy *et al.* (2009, p. 150) called the ingredients of enabling environments the "enabling needs". The public sector must provide "essential enablers" that support the foundation of a functioning market. The public sector also can, and often does, support "important enablers" that provide second-order activities such as finance, transportation and information. Finally, states can provide "useful enablers", which are helpful but not essential conditions, such as grades and standards, market linkages and business development services.

   According to Jordaan (2012), a fundamental challenge for governments in formulating policies is in defining their own role. While they may sometimes play a significant part in cultivating an enabling environment to support business growth, their basic role is to provide and implement laws that enforce property rights and contracts, and resolve disputes. Jordaan draws on Christy *et al.* (2009) in assigning government need to provide essential enablers, and then second-order and useful enablers (Jordaan, 2012). Clear policies related to SDIs and their enabling environments, a level playing

FIGURE 25
Hierarchy of enabling needs



Source: Christy *et al.* 2009, p. 150.

field and transparent implementation of these policies are reassuring for investors and operators of businesses.

The enabling environment shapes business costs, risks and, ultimately, business competitiveness. The World Bank cites sound enabling environments as a key driver in attracting FDI and domestic investments (World Bank, 2004). It recognizes that stimulating investment is also vital in reinforcing enabling environments. Investment brings structural changes to enabling environments, helps agribusinesses and agro-industries meet international market demands more effectively, and helps enabling environments transform into competitive markets (FAO, 2013).

The FAO publication *Enabling environments for agribusiness and agro-industries development* (2013) describes a series of forums concerning the topic. Most participants in the events agreed that the development of sound agribusiness and agro-industry enabling environments relies on the will and capacity of national governments. Participants saw public and private roles as not always being clearly defined. The public sector often leads activities that would probably be better executed by private sector entrepreneurs. Many workshop and forum participants believed that the public sector should play the role of a facilitator, instead of competing with businesses and being directly involved with production, processing and marketing activities that are central to successful agro-enterprises. Meanwhile, the private sector should use advocacy to advance the agribusiness development agenda.

A great deal of effort has been committed to researching and measuring enabling environments for business and investment (UNECE, 2008). There has been relatively less focus, however, on enabling environments specifically for agro-industrial initiatives. One such attempt, by the United States Agency for International Development (USAID), has been the Agriculture-Commercial Legal and Institutional Reform (AgCLIR) (USAID, 2008). Drawing on the doing business approach, AgCLIR offers a set of tools to understand an agribusiness enabling environment by identifying barriers to launching and profitably operating agribusinesses (FAO, 2013, p. 13). Another USAID-developed approach, MEASURE, examines the responses of businesses to improvements in the enabling environment, in terms of the sophistication of their strategies. These include increasing the time horizon of strategies, willingness to invest, willingness to build personnel skills, collaboration with business networks and business-to-business (B2B) relationships (J.E. Austin Associates, Inc., 2009). Another effort is the World Bank's Enabling the Business of Agriculture project, which "aims to identify and monitor policies and regulations that impact how markets function in the agricultural sector" (World Bank, 2015a).

Some countries struggle with conflicting goals and limitations imposed by their specific histories of economic policy and governance, or management, national and international experiences with divestment of public ownership and liberalization, and the desire to harness private sector dynamism. In discussing licensing, monitoring and controls, FAO (2006) suggests that by devolving responsibility, a formal licence may not be necessary to secure a plant site on the basis that authorization is already in the works. A

proportionality principle can help guide government decision-making as to when a formal permitting process is necessary, and when discretion should instead be given to citizens, developers and local stakeholders. According to this principle, it may be inefficient to require a uniform process when local discretion will suffice (UNECE, 2008, p. 12).

5. *Provide or encourage enabling investment*, through direct (public) investment, private investment (which may involve a variety of financial and investment instruments) and/or donor-supported investments.

   The scale of investments required varies greatly among the five tools analysed. Incubators are often of a size that minimizes requirement for public investment; their investment requirements may not be vast. The private sector can readily step in and establish such facilities. When the public sector leads or partners in promoting incubators, it is often as part of national or local strategy and reflects the instigating role that it chooses to play in many economies. Agroparks and SEZs can also be instigated as private investments; smaller-scale and narrow tenancy will tend to encourage private investment, while facilities that serve or are viewed as public infrastructure, flagship initiatives or demonstrations will tend to utilize public budget or donor support for the investment. Corridors will typically require significant investment in infrastructure and services, and the enabling or platform investment is therefore typically from the public sector or donor support. Clusters, less centred on specific infrastructural investment, will nonetheless seek platform investment from the public sector.

   Public investment will most frequently be directed to core or platform infrastructure, such as agropark or SEZ facilities, that serves to enable or encourage subsequent investment. Similarly, the public sector will be prominent in enabling investments that connect facilities to markets or that permit access to the facilities, such as ports, roads and waterways.

   Public sector entities may take on responsibility for the design, construction and operation of the basic infrastructure or facilities. Or the public sector may put the enabling conditions in place that encourage the private sector to carry out these functions. Institutional, management and governance arrangements will need to be defined early on if the goal is to encourage the private sector to take on the early-stage investment role.

   The public sector will clearly seek private contractors to design and construct, and even operate, various publicly funded facilities – especially when budget or capacity to design and build the platform infrastructure and facilities is unavailable in the public sector. When operation or ownership is agreed to remain for a duration in the private sector, arrangement concepts such as build-operate-transfer (BOT) and build-own-operate (BOO) are relevant (Quiggin, 1998).

   These arrangements permit public sectors to foster core investments and retain some element of control or involvement, while allowing private investors to build the facilities and recoup a profit through temporary (concession period) or ongoing operation of the facility as an enterprise (ibid.).

   Actions to promote private investment are important at two stages in particular – when investment is sought in the development and management

of the actual agro-industrial initiative, and when investors are sought to populate and operate from within the SDI, often as tenants.

The public sector will often lead in investment promotion, although extensive private involvement from the industry or the community/region can be a strong promotional advantage. Potential investors will be particularly interested in other businesses' positive experiences, and in the welcome that they receive from local stakeholders. They will be encouraged by the positive response from their future supply and value chain collaborators. Potential investors in the maize sector in Bihar, India, were enticed by the public-private nature of the promotion of value-added investment in the sector (J.E. Austin Associates, Inc., 2010).

Public sector-led promotion efforts are typically the responsibility of an IPA, which in turn may typically report to a ministry of trade or finance, or, where more emphasis is desired, to a Board of Investment (BOI), which may have cabinet-level rank. PPP units, at either the national or decentralized level, and ministries of agriculture (which may have specialized agribusiness/agro-industry units that are familiar with investment promotion processes), are also frequent contributors to investment promotion efforts.

Promotion activities include, above all, making a carefully targeted audience aware of specific business opportunities or assets and helping them to become interested. Promotional activities include providing tax and other incentives, PPP arrangements, ensuring access to key resources (land, for example), and effective and sincere facilitation and aftercare. Other actions such as those already described – such as policy coordination, sound enabling environment and quality-enabling infrastructure and services – all become part of the promotional message and attraction to the investor.

Investment promotion has been discussed in greater detail in Chapter 7.

6. *Ensure that resources needed to catalyse the tool are available.* As already discussed, development strategies and supportive policies are crucial to the development and success of spatially defined agro-industrial initiatives and their investments. Access to investment and operating capital is also vital. Basic (enabling) infrastructure-based services are crucial – particularly access to power, water, communications and transport (which are often viewed as part of a corridor development). Issues involved in the provision of these resources are beyond the scope of this Sourcebook.

   Access to land and to a skilled workforce has enormous influence on the ability of a territorial initiative to attract investment. The public sector has an important influence over both.

   - *Availability, acquisition, security of ownership or use of land.* Land availability is often a risk to the private sector, creating a barrier to investing. The public sector can reduce the risk by ensuring that land is available. Depending on the SDI and the particularities of the country, ease and security of access to land may be a national, state or local affair and may in fact involve multiple jurisdictions that need to be coordinated. The public sector may intervene to reduce this risk, perhaps even by taking ownership of land and creating land banks in order to make land available to investors. However, in weighing up their options and actions,

public sector decision-makers must consider the impact of implied land subsidies and possible impacts on land markets.

Agro-industrial parks are examples of SDIs that often require government involvement at the outset, since the initiative requires secure access to land (FAO, 2006). Land access may be constrained (or facilitated) by national ownership. Landownership in many economies has been vested in communities or traditional arrangements, which complicates acquisition. In other economies, landownership is small and fragmented, with individuals owning only small plots. There is often concern about displacing populations and disrupting households if agro-industrial investments result in poorly managed or unfair access to land.

FAO (2006, p. 62) observes that, except for estate or plantation arrangements for industrial crops such as sugar, oil, tea and pyrethrum, agro-industrialists have at times not been permitted or encouraged to own agricultural land. FAO cites government legislation that allows the purchase of land for development by various industries, such as the reforms in India's Karnataka and Marahastra regions, as important incentives for the private sector to invest and develop agro-industrial parks. In Karnataka state, for example, a registered agro-industry can now legally own 50 ha of land.

- *Skills.* All parties should have a common interest in ensuring that skilled workers and specialized management personnel are readily available to staff the investment. The communities will have access to new jobs. The public sector will want to ensure that people have job opportunities. And investors will want to have access to a competent workforce.

  In practice, however, the responsiveness of skills provision may be hampered – for example, by rigidities (and outdated offerings) in curricula, weak instructional staff or unwillingness to plan with prospective investors. The public sector's responsibility is to ensure that young people have access to quality education and training that prepare them for productive jobs in the workforce.

  Investors recognizing that a location offers a resource of workers and other employees who are prepared for the workplace and have basic skills/more advanced training, will be more eager to invest. Schools – especially those providing technical and vocational education and training – that are willing and able to work with the business commmunity to design and offer quality training and certifications are a tremendous asset to investment locations.

7. *Ensure support from public sector ministries and agencies, and various jurisdictions*. The public sector appears in many jurisdictions – national, regional and local (including municipal or district), as well as semi-autonomous agencies. Coordination is therefore vital. Without coordination, ministries responsible for industry, commerce, trade, agriculture, internal affairs, local government and finance, among others, may have varying objectives, priorities, commitments, systems and bureaucracies – any of which could clash and therefore impose unwanted costs, delays and risks for the investor. When initiatives involve multiple jurisdictions, these need to collaborate to

facilitate implementation and operation. The efficiencies and reasonableness of a variety of more autonomous agencies such as customs, communications, power, investment promotion and facilitation can also impact on the success of an agro-industrial initiative.

Unambiguous statements of national and regional policy play a critical role in effective integration of actions among levels of government and between sectors. Policy statements should include a clear set of general goals and principles for spatial planning (UNECE, 2008; Wohlmuth, Kormawa and Devlin, 2012, p. 320). Some countries demonstrate major problems in coordinating agriculture and industry policies, which can have a significant impact on the growth and competitiveness of agro-industries. Poorly coordinated policy may lead to shortages of raw material or quality, perishability and transport problems as the result of weak value chain linkages between pre- and post-harvest activities. For example, Senegal struggled to organize agriculture and industry priorities, and to integrate donor policies and programmes with agriculture and agro-industrial support policies (see Box 68).

Agriculture is an arena in which governments have a major interest and high levels of involvement. Politically, this may then imply significant government involvement when compared with non-agricultural industrial developments. It may also create tensions that have to be managed within the array of bodies that are part of the public sector – for example, the interests and priorities of a ministry of agriculture versus a ministry of investment, trade or industry. The various public sector bodies can each play several roles. Whether and to what degree each should be involved is situational, and also depends on the size of the country. The principle of subsidiarity requires the decision-making process to be driven largely by local requirements. However, it also recognizes that higher-level decision-making may be required at times, where the scale or goal of an issue cannot be addressed at a local level, such as major transport infrastructure projects (UNECE, 2008, p. 11).

BOX 68

Senegal's challenges in integrating agriculture support policies: weak coordination

In 2012, Senegal faced severe implementation problems – the public sector was not well organized in coordinating policies to support agriculture and agro-industrial development. Public agencies played an increasing role, but lacked institutional capacity. The private sector coordinated itself through the National Council for Rural Cooperation and linked up with the Government and donors in policy design and formation. However, too many gaps still existed between government strategies and the needs of the private sector (Matsumoto-Izadifar, 2008, p. 16).

Source: Wohlmuth, Kormawa and Devlin, 2012.

The very nature of territorial development draws local government into promoting development. FAO (2010a) cites, as good practice, the examples of the wine clusters in Latin America, grape cluster in India and Malaysian palm-oil industrial clusters and export-oriented agricultural clusters (also called agri-export zones) in demonstrating collaboration and sharing of responsibilities by and among central and local government agencies. India's export-oriented agrocluster initiative uses a coordinated cluster approach to support agriculture exports that integrates various government initiatives and accounts for all stakeholders in the value chain and the linkages among them. Supporting the clusters is the shared responsibility of central and local governments.

The appropriate roles of national, regional and local governments are important in spatial planning, a theme that is closely related to territorial development. Special agencies may also play a role (UNECE, 2008).

The promotion of a territorially based initiative will intersect and interact with other policies and strategies. Agricultural and investment policies and strategies are, for instance, always relevant to an agro-industrial SDI. But a country or other jurisdiction may also be promoting specific strategies that facilitate or guide the use of tools, for example, Mozambique's "corridor" strategy, Senegal's cluster strategy and India's promotion of agroparks and agroclusters.

Given a proper decision-making and budget framework, national decentralization initiatives will impact on SDIs and encourage them. Decentralized responsibility may encourage the use of SDIs to achieve local objectives, with greater public-private collaboration and sharing of purpose. In the context of decentralization, subnational authorities may be given implementation responsibility (or opportunity) for nationally promoted programmes, policies or initiatives. This is a principle, for example, that is reportedly incorporated in India's National Mission on Food Processing (NMFP).

8. Almost any territorially configured agro-industrial SDI is predicated upon an accessible supply of agricultural raw materials and hence effective supply linkages with agricultural producers. Public sector actors need to understand investors' requirements and take action to *support market-based supply chain development and operation*.

   In terms of the public sector's role, the need for robust supply chains and linkage with farmers should emphasize coherence between the objectives and actions of ministries of agriculture with those of the ministries responsible for industry and for investment promotion.

   Governments may be persuaded to take an active part in managing relationships between producer and processor, too often in ways that involve subsidies or regulations in opposition to market forces and economic realities. Such situations often lead, down the line, to tensions with market forces, unsustained investment and low levels of competitiveness. Sometimes farmers will not cooperate. Sometimes they will not invest in their production. Sometimes prices are artificially supported or dampened, and their management is insufficiently supple to match global market pressures. Sometimes innovation and entrepreneurship will be curtailed.

With these cautions identified, it may be in all parties' interest to assist investors and supply chain actors actively to structure their relationships and value chains to align objectives and actions, for example, by encouraging forms of joint ownership or intermediary investment in primary processing facilities, and flexible pricing arrangements whereby producers and downstream buyers share in the variability of market prices.

Singh (2011) highlights the fact that the agricultural value chain, including both farming and off-farm activities, is particularly suitable for the establishment of business networks. The ability of these networks to promote agro-industries in developing countries depends largely on how they capture new opportunities while minimizing the risks posed by external threats. Singh suggests that it is crucial for government agencies to regulate the involvement of private stakeholders in agricultural markets, and design policies and governance mechanisms to protect farmers' interests, ensuring that projects are both efficient and fair for each party (Singh, 2011, p. 58). Singh does not believe that the state should necessarily intervene directly, but "rather set the framework within which public agencies and private entities work together with other players ... state agencies can be useful to introduce private players to project areas".

9. *Facilitate movement of goods and trade*. In many respects, the success of an agro-industrial investment is predicated on the movement of goods. Supply chains need to deliver products efficiently from farm to processor, often across subnational (district) boundaries, or across national boundaries. Processed goods must be exported, again across subnational boundaries or to other regional or global locations.

   This aspect needs highlighting, since it is a crucial responsibility of the public sector to do everything possible to ensure rapid, undamaged, low-cost movement of products. Contributing elements to this untrammelled movement are many – transportation and communication infrastructure, transport and logistics services, port operations, customs operations and so on. Complications and inefficiencies can arise in the context of decentralization initiatives, for example if subnational authorities try to exert authority on cross-boundary movements, or try to impose taxes or levies on the movements of goods.

   Public authorities would do well to listen to the private sector if there are discussions or complaints about transport and logistics, and act on these concerns. Businesses are acutely aware of the impact on their costs and competitiveness of the ease or difficulty in moving products. Transport and logistics factors can be benchmarked over time, and against comparator countries.

Public sector role has changed from provider/initiator to enabler/facilitator

The nine sets of roles and responsibilities described above will in turn lead to many other subdecisions and actions that are in whole or in part the responsibility of the public sector. These may, for example, be related to overview and accountability; linkage with special national or local initiatives (e.g. entrepreneurship and competitiveness); import policies and procedures; interjurisdictional collaboration;

free movement of agricultural products; harmonizing various policies and strategies; building institutional systems and capacities; reform of workforce training; environmental standards and their enforcement; and financing mechanisms. Agro-industrial initiatives can also contribute to a country's efforts to invest in learning, and to promote new technologies.

The public sector must decide on its roles, set clear boundaries for them and communicate them to partners and investors in a transparent fashion. For instance, in discussing cluster development, Singh (2003) describes three basic roles that the government should play, namely: provide suitable macroeconomic conditions, improve microeconomic capacity and establish a supportive and progressive regulatory environment. Citing Michael Porter's literature on clusters, Singh suggests that that these are necessary roles, but may not be sufficient in themselves. The government role should also include facilitating and upgrading cluster development and creating opportunities for productive dialogue to bring participants together.

The roles and expectations of government and the public sector with respect to agro-industry and territorial development have evolved over time. The adoption of PPPs has contributed to this evolution. Governments have recently begun to enable the private sector to play a significant part in the development process for infrastructure and agro-industry. The exact roles that the public and private sector should play are difficult to determine, and will vary by country and initiative. As discussed, the public sector's role must be at least to provide an enabling environment that minimizes private sector transaction costs and risks associated with investment and business operations.

Thus, in recent decades, the role of the public sector has changed from provider/initiator to enabler/facilitator. This change has occurred through the emergence of PPPs, in recognition that the private sector is a key stakeholder in the development of agro-industry sectors. The private sector has increasingly become the actor of change and is often found at the forefront of development. In turn, the government supports the private sector in creating an enabling environment for SEZs, clusters, corridors and technoparks to thrive through adequate policies, strong and efficient institutions and effective services.

Opinion and research are not uniform in stressing the growing role and increasing devolution of implementation responsibility to the private sector. Kjöllerström (2007) cites experiences in Chile and Malaysia in highlighting the alternative view that governments can effectively play a significant and varied role in developing successful clusters by providing business development services (BDS), infrastrucutre development, technical training and export assistance to the private sector. (The Chile case has been discussed in Chapter 3; see also Box 69). Kjöllerström agrees that private entrepreneurship has been important in identifying new goods and services, but also emphasizes that PPPs have, in many instances, been instrumental in creating profitable new initiatives, and that public sector interventions directed towards cost discovery and solving coordination problems have often been effective (Kjöllerström, 2007, p. 4).

In providing needed support or services, there is again a public-private continuum. Many services can be provided either by the private sector, the public sector or PPPs. Which services should the public sector provide? Although in many cases

BOX 69
Agrobased industries in Chile – success takes time

Chile is one of the world's success stories in terms of export growth of high-value agricultural products. These predominantly include fish, wine and fresh fruit. Chile's emphasis and efforts on developing these exports date from the 1960s; its actions were highly innovative in many respects, but also required much trial and error. The Chilean experience confirms that it takes time to diversify successfully away from primary exports towards greater reliance on higher-value-added products. Such endeavours require the right "soft" environment for the private sector to invest and gain in competitiveness. Governments can only create this environment through a trial-and-error process, long-term vision and continuous support.

The Government led the fruit sector's development at the outset. In the 1960s, a public development agency, the Production Development Corporation (CORFO), implemented a strategic plan for the fruit sector that included tax incentives, advantageous financial products for fruit exporters and public investments in post-harvest infrastructure, R&D and market research. The plan encompassed a strong knowledge component (training, cooperation agreements with overseas knowledge institutions, and research programmes to develop local fruit varieties). These initial actions were the first instigating steps towards developing a competitive fruit cluster.

The plan led to a concentration of human capital that was essential for adapting and adopting foreign technology and improving export infrastructure. This provided the foundation for private sector engagement, by reducing initial investment requirements and risk, with greater investment in fruit production and post-harvest activities. In the 1970s, large companies subsequently led the substantial increase in fruit exports, benefiting from a duty drawback system for non-traditional exports and exchange rate devaluation. In the 1980s, there was a shift towards supporting groups of medium to large producers through credit, agricultural extension and technology transfer programmes. Such an approach improved horizontal cooperation, and contributed to the formation of private sector associations that were instrumental in improving the competitiveness of the fruit cluster (ibid.).

Source: Kjöllerström, 2007, p. 4.

still a matter of political or economic philosophy, or even of inertia, current thinking is often that the public sector should leave responsibility to the private sector where the private sector has the capability to implement. Thus, the public sector's role emphasizes its enabling or catalytic capabilities. Its action is in large part directed to attracting private sector investors. The public institutions' role is therefore, at a minimum, to ensure or encourage governance and service provided effectively by someone – the public sector does not have to do everything itself. Many services are better provided by the private sector.

A trend of privately led and privately owned special zones has dominated zone development in the last 15 years. This shift confirms that failed experiences of government-run zones have built a perception in which privately led zones are more successful and hence supports the increasing trend to develop privately led zones.

However, this does not mean that government will not play an important role in development or management of the zones; its role will fall into place within the spectrum (World Bank, 2008).

Cautionary lessons: what might go wrong?

Political and legal factors can influence the development of agro-industries both positively and negatively. Government action in the form of policies and regulation can achieve sound enabling environments. However, distortionary effects have often increased the risk of doing business by crowding out private sector consumers and increasing transaction costs (FAO, 2011b, p. 18).

There is fairly uniform agreement that public sectors need to provide consistent facilitating support to territorial initiatives, and over long periods of time. In speaking of SEZs, Farole (2011) says that governments must maintain support for territorial initiatives for long periods of time for them to be successful, which is particularly challenging in countries with short political cycles. He cites several examples. In Bangladesh, the main SEZ contribution was the provision of serviced industrial land infrastructure and power supply, while incentives have had no measurable effect. In Honduras, a new law allowing the private development of zones transformed a dormant government-run initiative (Farole, 2011, pp. 9–10). The Honduran Government then focused on providing an improved regulatory framework and necessary infrastructure and services, in particular a high-quality port, road connections to the zones and on-site customs services that improved import and export procedures for investors (ibid.). The private sector responded to the new environment.

Referring to SEZs, but equally applicable to other initiatives, Farole (2011, pp. 11–14) draws lessons from some unsuccessful zone experiences:

- The commercial case is paramount. Projects must be designed on the basis of clear strategic plans, with a strong commercial case. And government commitment is needed.
- While zones are often seen as enclaves with good services and an enabling environment, "in practice their success is almost fully entwined with the competitiveness of the national economy and the national investment environment". Many zones operate in environments of poor national competitiveness; indeed, that is often their perceived rationale. But regardless of the quality of a zone, zones still depend on the physical and soft infrastructure that connects them to these global markets.
- Clear, transparent legal and regulatory frameworks are needed that codify the programme strategy and establish the "rules of the game" for all concerned stakeholders.
- Implementation is also important. Many initiatives suffer because the responsible authorities do not carry out their mandates.
- The success of a territorial investment promotion initiative will require implementation of much broader policies beyond the scope of any SEZ or other spatial development programme. Initiatives require, and can fail if they are not supported by, policies and programmes such as workforce development, freeing up labour markets, knowledge sharing, helping to integrate value chains within a region, promoting effective public-private institutions and promoting linkage to industry cluster development firms.

Governments and other stakeholders need to avoid politicization and similar skewing of SDI selection. The selection and even management of SDIs are often politicized through political interests, provincial equity or favoured constituencies. This tendency is an existential threat to territorial initiatives, because if investors suspect that these initiatives are not being screened and managed using sound economic principles, the rationale of investment "crowding-in" may rapidly be lost (i.e. when government spending stimulates or induces private investments) (Jourdan *et al.*, 1996).

An imperative for the public sector is to stay current. Irrespective of the definition of the public sector role, it is vital that the public sector stay current in executing its role. For example, building infrastructure is not a one-time investment. Nor is strategy. Nor is skills development. Infrastructure will need to be updated and renewed. Strategy must be reviewed to remain competitive in light of market trends, new product development and competitive forces. Businesses must be able to access personnel with up-to-date skills that are needed for competitive technologies. The public sector must therefore listen to business, markets and communities in order to play its roles effectively.

To promote agricultural clusters successfully, a public sector agency needs institutional continuity while also maintaining flexibility to adjust continually to events and shifting priorities. For instance, public research agencies must be able to adjust their research priorities in order to help growers and other agricultural cluster actors adapt to market changes (FAO, 2010a, p. 77).

8.5 ROLE OF PUBLIC–PRIVATE PARTNERSHIPS

FAO (2016) defines agri-PPPs as "formalized partnerships between public institutions and private partners (e.g. agribusinesses, farmer associations and NGOs) designed to address sustainable agricultural development objectives, where the public benefits are clearly defined (e.g. rural employment and income generation, food safety and food security, environmental protection, etc.), investment contributions and risk are shared, and active roles exist for all partners at various stages throughout the PPP project lifecycle". This definition is readily applied to agro-industrial objectives. Agri-PPPs can be complemented by B2B partnerships that are related or linked to PPP, for example, contract farming and other supply agreements within a value chain development framework (FAO, 2016).

Definitions and descriptions of PPPs cover a surprisingly wide range. The term in recent years seems to have been applied to a variety of circumstances, including formal own-operate partnerships, as well as looser, formal or informal collaborations and alliances. Definitions have proliferated at every level of jurisdiction and apply to many "working arrangements", as described by Singh (FAO, 2011c). Others limit PPPs to ventures in which both the private investor and the government have equity interest. Wohlmuth, Kormawa and Devlin (2012) describe a PPP as an agreement "with shared objectives for the delivery of public infrastructure or public services by the private sector … the government retains the major role in the partnership as the main purchaser of services or main enabler of the project. For its part, the private sector partner benefits financially according to predefined performance criteria that may be derived entirely from service tariffs, user charges, or directly from the government budget". With such a range of interpretations, the term PPP risks becoming a buzzword.

Because they are public and private in execution, PPPs imply public-private information exchange and dialogue. This dialogue platform can be expanded, through board membership, multistakeholder PPPs, or by the terms of the PPP agreement to provide dialogue platforms that include the various stakeholders involved in the joint development, implementation and monitoring of the strategy.

A crucial element of this definition is the formalization of public and private commitments. Private sector investors benefit from greater certainty that infrastructure, services and important enabling environment elements will be available according to a time line to support the private investment, including a greater likelihood that the private sector will meet commitments and will champion the initiative.

The public sector benefits by leveraging private sector finance, greater certainty of private investment, greater and quicker innovation and market access, and bottom-line business perspective. "PPPs are not only designed to attract private sector finance for national capital investment projects, but also bring private sector skills and managerial expertise to public service projects" (Wohlmuth, Kormawa and Devlin, 2012).

Frequently viewed as simply a means for budget-starved governments to harness the private sector's ability to access investment capital (hence similar in concept to a BOT or BOO investment) to develop infrastructure, PPPs can in fact deliver other benefits – such as access to skills and technologies, market access and industry knowledge – while still retaining a significant element of direct public sector stewardship and interest.

PPPs can be a preferred way of starting and implementing an initiative. They can provide a proxy or mechanism for desired government control, while at the same time placing management and operating responsibility in the more nimble hands of the private sector. They can offer a flexible way forward. PPPs can be initially highly inclusive of various stakeholders, giving parties a place at the table that can be helpful especially in jump-starting the initiative. But is a PPP necessary as a means to include these stakeholders? PPPs can be transient, as the less committed or involved stakeholders may retract or become silent as the initiative progresses.

PPPs can be viewed as a mechanism to move ahead quickly to achieve development goals and perhaps to minimize risks to both the public and private partners. They may be present at every point in the implementation plan, but what are the priorities in practical terms for public sector involvement? These must be understood in terms of factors such as equity and fairness, power accorded (or wielded) by each party, protections provided and impact on outcomes of the initiative.

The effectiveness of the PPP mechanism is predicated on sound, transparent legal frameworks and the ability of the partners to develop a trust-based relationship as well as a contractual one. Emmons (2000) highlights the risks to the private investor of changing expectations and pressures in public-private alliances (and indeed in any private investment that involves substantial fixed assets in environments that are not fully governed by an impartial legal framework).

Table 3 in Chapter 2 presents FAO's typology of public-private collaboration present in (agro)corridor programmes, including agribusiness, infrastructure, soft corridor and market-based PPPs. According to FAO's 2016 study on PPPs for agribusiness development, agribusiness PPPs in general can be grouped according to four main typologies:

- Value chain development (VCD);
- Innovation and technology transfer (ITT);
- Market infrastructure (MI);
- Business development/advisory services (BDS).

The scope of each type of PPP for agribusiness development is described in Box 70.

According to the study, VCD PPPs represent the majority of the 70 cases studied (57 percent), followed by ITT partnerships (23 percent), BDS PPPs (11 percent) and MI (9 percent). The distribution of cases in each category varies greatly from region to region. In Latin America and the Caribbean (LAC), PPPs identified fall into the VCD and BDS categories, while ITT and MI predominate in Asia. In Africa, VCD partnerships are dominant, followed by ITT.

BOX 70

Scope of agribusiness public-private partnership typologies

***VCD PPPs* are those designed to:**

- develop specific value chains to access domestic or export markets, often with a focus on achieving quality certification within the chain (e.g. good agricultural practices, organic and fairtrade);
- revitalize stagnating commodity sectors (e.g. rubber and sugar); and
- stimulate broad-based subsector development (e.g. oil palm and biofuel).

***ITT PPPs* are partnerships designed to:**

- commercialize innovative technology to improve productivity and/or market access including, for example, new seed varieties and small-scale technology such as plant disease test kits, fans for livestock production and biogas systems; and
- deliver specialized extension services such as sustainable integrated farming techniques and youth training in the development of high-technology agricultural enterprises.

***MI PPPs* focus on:**

- development of market trading centres;
- commodity storage facilities;
- agricultural product transport or logistics systems; and
- agrifood parks.

***BDS PPPs* include:**

- those aiming at the development of market information systems;
- management training for agrodealers;
- matching grants for farmers to access BDS to support on-farm/small group value addition; and
- subsidized BDS for small and medium agro-enterprises (SMAEs).

Source: FAO, 2016.

Mega agricultural PPPs are global multistakeholder partnership platforms created to promote extremely large-scale investments in agriculture, with the view of fostering smallholder inclusion and food security in low- and middle-income economies.

8.6 CASE STUDY: IMPLEMENTATION ISSUES FACING THE NATIONAL POLICY PROMOTING FOOD PROCESSING PARKS IN INDIA

What role does national policy play in agro-industrial development? Can a centrally managed agropark programme achieve results? What are the success factors and challenges to park creation? What are the institutional needs for investment promo-

BOX 71

Examples of mega agricultural public-private partnerships

G8's New Alliance for Food Security and Nutrition and the New Vision for Agriculture initiative[71] promoted by the World Economic Forum (WEF) are global multistakeholder partnerships that aim to accelerate investments in agriculture. These initiatives are notable because of their centrality of the use of the PPP model in the agribusiness sector and the level of awareness of government about this (donor-supported) concept. Eighteen countries are participating in the New Vision platform across Africa, Asia and Latin America (WEF, 2014).

At the country level, New Vision is implemented through a multistakeholder partnership. For example, as discussed in Chapter 2, in the United Republic of Tanzania a partnership was formed in 2010 to promote the development of the Southern Agricultural Growth Corridor (SAGCOT). In Indonesia, the Partnership for Indonesia Sustainable Agriculture (PISAgro), formally established in April 2012, regulates collaboration between the Indonesian Government and a number of companies, both Indonesian and international, to strengthen smallholder livelihoods, increase food security and improve sustainable production of target commodities: cocoa, maize, dairy, palm oil, potatoes, rice and soybeans. In Viet Nam, a Public-Private Task Force on Sustainable Agricultural Growth led jointly by government and industry was formed that same year to develop and test agricultural models in priority crops with the potential for rapid scaling (WEF, 2013).

The work of these platforms has started to resonate at national level, with the potential of triggering changes in agricultural and related policies and strategies based on lessons learned. To increase the probability of this happening, feedback mechanisms from these platforms to policy-makers need to be strengthened.

These mega-PPPs are a recent phenomenon that is contributing to the rising popularity of the PPP concept and its application to agriculture, but it is also under much criticism for being largely unproven and risky, increasing market power imbalances and transferring risks to the poorest and most vulnerable.

Source: Oxfam, 2014.

[71] New Vision brings together governments and agribusiness multinational companies that are industry partners of WEF to address three imperatives: ensuring food security, spurring agricultural production in an environmentally sustainable manner, and engendering inclusive economic growth. There are 28 companies championing the initiative at global level (WEF, 2013).

tion of agroparks? These questions are considered here by exploring India's efforts to modernize and expand its food processing industry.

National food processing objectives and context

India's Government has played an active role in promoting growth in India's food processing industry since the 1980s. Policy-makers recognized that food processing needed to expand and modernize to meet the needs of a growing population. Furthermore, agricultural production provided direct employment to 70 percent of the population and the sector endured significant post-harvest losses. A growing food processing sector, therefore, would maximize the value of the country's strong agricultural base, reduce waste, provide markets for rural producers and generate non-farm employment opportunities for rural communities. Furthermore, policy-makers sought to improve food safety, a problem for an estimated 35 percent of the food entering the domestic market (FAO, 2006; Aggarwal, 2014). The Ministry of Food Processing Industries (MOFPI) was established in 1988 as a new line ministry dedicated to developing the sector, with the long-term objective of entering the international market (MOFPI, 2014b).

In the 1950s, the food processing sector was largely informal. The sector has become more formal over time, but is largely composed of SMEs. Agroprocessing represents only 6 percent of production (Aggarwal, 2014). Therefore, any attempt to expand the industry meant working with SMEs that faced challenges in securing financing for capital investments in facilities such as cold storage, warehouses and waste treatment plants (FAO, 2006). Given these conditions, MOFPI focused efforts on establishing food parks across the country.[72] The food park scheme was

BOX 72
Indian food processing sector

The following numeric data refer to the Indian food processing sector:

- The industry accounts for 32 percent of the country's total food market
- Six percent of perishables are processed
- Estimated to be worth US$121 billion and growing 10 percent per annum
- One of the largest industries in India – fifth in terms of production, consumption and exports
- Employs 13 million people directly and 35 million people indirectly
- Accounts for 14 percent of manufacturing gross domestic product (GDP), nearly 13 percent of India's exports and 6 percent of total industrial investment
- Has 1.5 percent share in global food trade
- Received around US$6 billion foreign investment from April 2000 to September 2014

Sources: Invest India, 2015; Ministry of External Affairs, 2015.

[72] MOFPI also launched an agrobased SEZ scheme in 2006 after the Indian Parliament passed the SEZ Act in 2005 (Aggarwal, 2014). The performance of MOFPI is not the subject of this case study.

launched in 1992. It provided financial assistance in the form of grants for the construction of shared facilities and land preparation for co-location of SMEs in an agroprocessing industrial park. The food park scheme envisaged shared facilities that included cold storage, warehouses, quality control laboratories, and water and by-product treatment facilities, among others.

Evolution of the Indian national food park policy

The food park policy has evolved through five phases over the past 20-plus years, beginning with the Eighth Five Year Plan (1992–1997) up to India's current Twelfth Five Year Plan (2012–2017) (FAO, 2006; MOFPI, 2011). Policy thrusts for each five-year plan are summarized below:

- *Eighth Plan* (1992–1997). Concept development and implementation mechanisms established.
- *Ninth Plan* (1997–2002). Financial assistance committed to projects culminating in the approval of 56 parks and launch of 45 food parks.
- *Tenth Plan* (2002–2007). Slow ramping up of operations at approved food parks. By 2007, only 28 units in eight food parks were operational (Planning Commision, 2008).
- *Eleventh Plan* (2007–2012). Introduction of the Mega Food Parks Scheme (MFPS), which replaced the food park scheme. Introduction of the Infrastructure Development Scheme, which addressed key logistics bottlenecks in cold chain, value addition and preservation infrastructure. It also supported the meat industry in modernizing abattoirs; established industry-level organizations such as the National Meat and Poultry Processing Board and Indian Grape Processing Board; supported technology modernization entrepreneurship and research; and strengthened backward linkages between processing and raw material production.
- *Twelfth Plan* (2012–2017). Continued emphasis on infrastructure development; new emphasis on institution building and skills development; decentralization of park creation; and monitoring responsibilities to state governments.

The food park initiative began slowly, with parks established only between ten and 15 years after the launch of MOFPI. MOFPI made a series of adjustments with the Eleventh and Twelfth Plans, based on experience in establishing parks and feedback from industry (MOFPI, 2011; FICCI, 2010).

How it works: strict criteria for investor partnerships and two-phase approvals process

The Government of India allocates funding for each five-year MOFPI plan. Eligibility criteria, such as financial and technical viability and funding limits for available grants, are publicized. It is the responsibility of private investors to present applications that meet the criteria. Public-private collaboration is not explicitly required for proposals but is implicit, given the number of permits and approvals obtained from state agencies. MOFPI is careful to distribute funds evenly among states. According to MFPS guidelines, it is estimated that each park will house between 30 and 35 processing units with a collective investment of Rs350 crore (approx. US$56 million). Up to 10 percent of the total area is dedicated to housing SMEs. All business

activity is expected to lead to an annual turnover of approximately Rs450–500 crore (US$73–80 million) and create direct and indirect employment for 30 000 people. Site development is expected to include industrial plots, boundary walls, roads, drainage, water supply, electricity supply, an effluent treatment plant, telecommunication lines, parking bay, administrative buildings, training centre, canteen, workers' hostel and other non-core infrastructure. Land acquisition must consist of at least 50 acres (approximately 20 ha) of contiguous land through direct purchase or lease of at least 25 years. MOFPI provides up to 50 percent of the project cost in the form of a capital grant for most areas and 75 percent in "difficult and hilly areas", up to a maximum of Rs50 crore (US$8 million) per project.

Food processing parks were initially fully funded, owned and operated by national (centralized) MOFPI with little, if any, participation from states (KINFRA, 2015). The Eleventh Plan changed ownership requirements to encourage greater participation of the private sector as well as states. Mega Food Parks have to be owned and managed by a partnership of companies with up to 26 percent ownership permitted (not required) by central government agencies and no limitations on ownership shares by state government entities or cooperatives (MOFPI, 2014c). The anchor investor should have at least a 51 percent stake in the processing units. MOFPI requires at least three independent businesses to form a Special Purpose Vehicle (SPV) for park ownership and management. Collectively, the SPV partnership must possess a certain threshold for its net worth to ensure that it can put forth the needed investment in the park and withstand delayed returns to investment (MOFPI, 2011).

The current MFPS has a two-phase approval process (expression of interest followed by detailed project proposal), which allows time for applicants to meet all criteria. Both approval processes can collectively take approximately ten months. The process can take longer if companies fail to meet project conditions for final approval (MOFPI, 2011). Land acquisition, for example, is required for final approval but has proved a challenge to many investors (see Box 73). Final approval is given by an Inter-Ministerial Approval Committee, comprised of two representatives from MOFPI, and representatives from the Ministry of Agriculture, the Agricultural and Processed Food Products Export Development Authority (APEDA), Indian Council of Agricultural Research (ICAR) and the state government of the application's origin.

BOX 73
Land acquisition requirement

Final approval requires the submission of proof of possession of at least 50 acres (20 ha) of contiguous land by the SPV within six months of approval of the expression of interest. The land should also have permission for change of land use for industrial/infrastructure purposes. If the SPV fails to submit all required documentation within the six-month time frame, approval for the expression of interest will automatically be cancelled unless an extension is granted by MOFPI.

Source: MOFPI, 2014c.

MOFPI will appoint a third party (outsourced) programme management agency to assist in the implementation and monitoring of the park once it has received final approval. The grant is released to the SPV in four instalments based on progress milestones (MOFPI, 2014c).

How it works: arms-length investment promotion efforts yield unsatisfactory results

The national MOFPI and state nodal agencies are responsible for assisting investors in land procurement, obtainment of all requisite clearances and obtaining benefits outlined in state and national policies (MOFPI, 2014c). The various MOFPI schemes are widely publicized and policies and guidelines for proposal development are easily accessible online.

Under MFPS, it is primarily the responsibility of SPV investors to promote and attract businesses to locate/invest within their respective parks, although state nodal agencies are also implicated to some extent. Performance to date is poor in filling the parks' available facilities. Judging by the vacancies in many of the newly constructed food parks, investors have not performed well in attracting businesses to their parks and their host states have limited capacity to help (MOFPI, 2014a).

Andhra Pradesh state, for example, is home to the first mega food park, Srini Food Park. Yet this park still remains 40 percent vacant (15 vacancies of 35 units), five years after receiving final approval from MOFPI. Srini is not alone in its high vacancy rate. Srini Food Park and other parks were profiled in an October 2014 national conference, Mega Food Parks – Attracting Investment in the Food Processing Sector, held in Jaipur, Rajasthan. However, rather than making an effort to fill the vacancies of existing food parks, the main objectives of the conference were to raise awareness of MOFPI food park schemes and attract investment for the creation of new mega food parks (MOFPI, 2014a). Furthermore, despite Srini's high vacancy rate, MOFPI has approved two other mega food parks for the state (Economic Times, 2014). The emphasis, at least at national level, is clearly "build it and they will come". Businesses are not rushing to locate within these parks, however, and seemingly little effective effort is being made to attract businesses to the parks, either during the proposal phase or after construction is complete.

MOFPI seems to take some responsibility for promoting investment in the food parks across the country through its Investors' Portal, created in 2013 (MOFPI, 2015). User experience of the portal, however, leaves much to be desired in terms of accessing useful information for potential investors of business units. The portal is designed to provide high-level profiles about India, sectors (e.g. grains, milk products, fruit and vegetables), government policies, fiscal incentives and state profiles. The information has been, however, insufficient to lead potential investors to food park vacancies. Indeed, many of the Web sites tend to be either incomplete (under construction), or lacking in links to actual site details. Again, the emphasis is on investment for development of new parks throughout the country rather than generating activity within existing and forthcoming parks.

Progress and lessons learned

India's first food park was established in 1980 in Mysore, Karnataka state. As of December 2014, 56 food parks, five mega food parks (another 20 under development), 17 cold chain centres and two abattoirs have been established with MOFPI

assistance (MOFPI, 2014a). The MOFPI goal for the Eleventh and Twelfth Plans is to have 42 mega food parks in total (in addition to the existing 56 food parks already established under previous plans). Of the 42, 25 parks have been approved from a pool of 72 proposals received. Investment from both public and private sources totals approximately US$400 million (MOFPI, 2014a).

Results of this national initiative have been mixed. At the aggregate level, the food processing sector grew by approximately 7 percent annually from 1994 to 2004 (FAO, 2006). Growth rate has increased to above 13 percent annually since 2004–2005. The sector has increasingly become more formalized, whereby 35 percent of food processing businesses are now informal, as opposed to 73 percent in the 1950s. The sector has also become more organized and concentrated with large domestic and foreign companies entering the market, although SMEs still dominate. The sector is also modernizing, with greater use of automation, preservation and packaging technologies (Aggarwal, 2014).

Despite positive national indicators for the food processing industry, most MOFPI-sponsored parks have yet to become fully operational and have not attracted the "critical mass" that was originally envisaged. As of March 2007, none of the 45 parks established in 2002 were fully operational and one-third of total investment in the parks was from government funding (Aggarwal, 2014). Aggarwal concludes in his assessment of the Indian food parks programme in 2014: "There have been delays in approval and implementation. Most projects are languishing in the absence of facilitating institutions for land acquisition, labour recruitment and availability of capital. These are large projects that require constant government support and incentives throughout their implementation, but there is no such institutional support mechanism". The following examples illustrate the types of factors that have influenced the successes and failures of India's food processing parks.

Connectivity to markets and access to skilled labour

Rai Food Park in Haryana state is located just 7 km from the Delhi border on a major highway. Close proximity to large consumer markets, access to skilled labour and to a strong agricultural base are three factors contributing to the success of this food park. As of 2012, only a few of the 223 plots were vacant and some of the occupants are big industry players, including Danone (France), Sky Lark and Yakult (Japan) (Aggarwal, 2014). The Haryana State Industrial and Infrastructure Development Corporation (HSIIDC) is tasked with developing and managing the 118-acre (48-ha) food park, as well as information technology parks in the state. Shared facilities constructed by HSIIDC in the Rai park include power, cold storage, road, water and sewage treatment facilities.

Perhaps the most compelling reason for the success of this park has been the serendipitous edict from the government of Delhi to move all factories outside the city limits. Nevertheless, the Rai success subsequently encouraged HSIIDC to develop a mega food park. It has purchased 595 acres (241 ha) of land and has already attracted some anchor tenants. HSIIDC will use Haryana state funding to develop the park, foregoing the MOFPI grant (Aggarwal, 2014).

In contrast to the Rai example, Srini Food Park in Andhra Pradesh is located just 30 km from a city, but not well connected by transport infrastructure. The isolation has hindered the park's ability to attract tenants as well as skilled labour. Its

footprint of 140 acres (57 ha) can host up to 100 enterprises that will benefit from state-of-the-art shared infrastructure within the park. Srini is being developed by the Andhra Pradesh Infrastructure Investment Corporation. Despite close proximity to mango-producing areas, it has not been successful in attracting businesses to the park. To demonstrate some forward movement, the SPV developers themselves have established three operations of mango pulping and Tetra paks®, but are having trouble securing raw material because of competition from other established businesses in the area (Aggarwal, 2014). As of October 2014, the park remained underutilized, with only 60 percent occupancy (MOFPI, 2014a).

Performance of state agencies in clearing bureaucratic approvals and attracting investment

Indian states vary significantly in their commitment and capacity to develop food processing industries within their borders. The nation's Twelfth Plan describes a lack of ownership from state governments in expediting approvals for park startup, such as land leases, and that states had not contributed their share for park construction (MOFPI, 2011; Aggarwal, 2014). For example, bureaucratic delays were cited as the reason Western Agri Food Park pulled out of the process for developing a mega food park in Maharashtra state (Economic Times, 2011). This issue has been partially addressed in the current five-year plan by requiring greater state participation in the selection and implementation of food parks in the spirit of decentralization and bureaucratic efficiencies. There is also a requirement for a state government nominee to be on each SPV Board (MOFPI, 2014c).

Stakeholders have complained of delays because of the complexity of structuring a multistakeholder SPV and acquiring land (MOFPI, 2011). SPV conditions have been said to discourage large food processors from investing in such schemes because of the cumbersome SPV partnership requirements. MOFPI has already reduced the required number of SPV partners from five entities to three (MOFPI, 2011).

Two examples of Indian states that have prioritized food processing growth through supportive policies and institutional capacity are Kerala and Karnataka. Kerala established the Kerala Industrial Infrastructure Development Corporation (KINFRA) in 1993 to spearhead industrial growth for the state for multiple sectors. Food processing was one of the highest priorities for the state, given its historical experience with food production and processing, particularly with cashews, seafood and spices (Ramnath, n.d.). KINFRA is the state nodal agency for the administration of MOFPI park schemes. It created a dedicated division focused on food processing, the Agency for Development of Food Processing Industries (ADFIK) in 2004. The organization is proud of its proactive facilitation role for the industry and single window clearance process. KINFRA has four food parks operating under its umbrella: Kakkncherry, Mazhuvannur and Pathanamthitta, and a joint venture seafood park in Alappuzha district (Ramnath, n.d.).

Karnataka, too, has demonstrated institutional competency in expanding its food processing industry. Maximizing the state's wide variety of agricultural production (horticulture, coffee, cocoa, grapes, cereals, spices), Karnataka has four existing food parks and six additional food parks proposed for future development (Karnataka Udyog Mitra, 2012). The Karnataka Industrial Area Development Board (KIADB) is the state nodal agency for the development of industrial estates.

In 2003, KIADB established Food Karnataka Limited as a subsidiary company to lead the specialized needs of the food processing industry. It undertakes investment promotion efforts for park occupancy and can access external services and expertise to expedite approvals and operations (Rao, 2006). An example cited for its quick implementation timeline is a 2010 investment by Nestlé India for its "Instant Noodles & Mixed Condiments and Seasonings" plant in Karnataka, with a sizeable investment of USD 72.76 million. The State's dedicated and specialized agencies allowed Nestlé to implement the project within a mere eight months (Karnataka Udyog Mitra, 2012).

In addition to creating agencies dedicated to the food processing industry, both Kerala and Karnataka have aligned policies with national priorities. Both states have fostered industrial links with academia for research and labour skills development. Both provide food processing industries with fiscal incentives for new investment. For example, Karnataka offers food processing companies exemption from stamp duty, entry tax, electricity duty and special incentives in selected zones (Karnataka Udyog Mitra, 2012).

Recognizing institutional weaknesses in promoting investment in food parks, MOFPI has taken steps to provide some level of support at national level. In 2013, for example, it created the Investors' Portal, accessible via its Web site (MOFPI, 2015). However, there still seems to be little support provided directly from MOFPI to state nodal agencies for improving investment promotion performance.

Strength of backward (upstream) linkages

Many businesses have cited problems with raw material supply (FICCI, 2010). MOFPI modified its approach in 2007 from the old food park concept (whereby a single park was established without clear linkages to raw material supply) to the mega food park concept, by elevating the emphasis on backward linkages to primary production. Mega food parks are designed, therefore, to have a "hub and spoke" approach, which has a central processing centre (hub), and collection and primary processing centres (spokes) to ensure availability of raw materials for food processing units by consolidating products from area smallholder farmers and improving post-harvest handling practices. The Eleventh Plan also introduced the Infrastructure Development Scheme that addressed key logistics bottlenecks through cold chain, value addition and preservation infrastructure. The scheme has been well received by the business community, although it is still in its infancy for demonstrating on-the-ground progress (FICCI, 2010). Delays may also be attributed to the same bureaucratic red tape cited for the mega food park process.

National policy discrepancies and gaps

The food processing industry still operates in an opaque policy environment that hinders investment and progress across the country. Three of the top five challenges identified by industry stakeholders in the 2010 FICCI survey were related to the lack of a comprehensive national policy for the food processing sector, the inconsistency of food safety laws and discrepancies between central and state policies. In its report, FICCI describes the regulatory environment thus: "The Indian food regulations comprise various food policies that have been enacted at different points of time, and are under the ambit of various ministries of the Government of India.

This incremental approach has led to incoherence and inconsistency in the food sector regulatory scenario. In addition, the multiplicity of ministries and administering authorities at both central and state level has resulted in a complex regulatory system that is not well integrated, adding an additional burden on the food industry". Part of the rationale for the emphasis on decentralization of the food park scheme in the Twelfth Plan was to free MOFPI resources to focus on leading the effort to streamline food laws and regulatory authorities in the sector (MOFPI, 2011). As yet, there is little visible progress in addressing these policy discrepancies.

Conclusions

In a country as large and diverse as India, a centrally planned spatial initiative has proved challenging to implement. Only a few state nodal agencies have demonstrated sufficient capacity to implement food parks consistent with the national initiative. Most approved food parks remain underutilized for lack of capacity or lack of incentives for businesses to locate within them. Existing food processing businesses may not find re-location to be cost effective if fiscal or bureaucratic incentives are not compelling. Furthermore, businesses operate in a murky enabling environment whereby laws and regulations governing the industry are cumbersome to navigate. Such an environment deters informal businesses from moving into formal operations and presents challenges to SME growth.

India's MOFPI has succeeded in putting forth a policy that captures the primary needs of the industry and demonstrated its ability to modify policy as lessons are learned from experience. However, its role in facilitating growth in the industry has perhaps been "short of the mark". To start, some advocate for a change to MOFPI's decision-making criteria to allow the best proposals to win regardless of their location (i.e. even if they are grouped in fewer states). Instead, MOFPI's policy is to support parks evenly across the states (i.e. one park per state). Current policy does not reflect differences in competitiveness or even interest among states. There is a need to strengthen the capacity of state nodal agencies to engage stakeholders – especially the private sector, promote investment and foster stronger forward and backward linkages. Finally, working more closely with private businesses during the early phases of park design, and identifying anchor investors, would help to fill park vacancies more quickly and ensure park facilities meet operational needs.

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Chapter 9

Conclusions and checklists for designing and implementing agroterritorial initiatives

9.1 CONCLUSIONS

Having looked in detail at the instruments for spatial approaches to promote investment in agro-industry and at the promotional, governance and public sector aspects, this section summarizes several core themes and highlights a number of important conclusions and lessons.

Chapter 1 presented an overview and rationale for these approaches, whereas Chapters 2 to 6 examined in depth five territorially focused instruments to promote agro-industrial investment, together with the governance and contextual issues crucial for their effectiveness. The Sourcebook has described successes and failures, strengths and weaknesses in conceptualization, design and implementation.

The five instruments share many cross-cutting themes and issues, which are widely discussed in the chapters on individual instruments. However, investment promotion, governance and the role of the public sector are matters of common import, and these have been discussed in depth in Chapters 7 and 8. They discuss the key initiatives and capacities that are actively needed to identify and draw in investors. When dealing with governance, finance and ownership and the role of the private sector, they consider governance principles and mechanisms, and the balancing of roles between the public and private sector that are instrumental for the effectiveness, profitability and sustainability of each of the five instruments.

Instruments were selected in large part because of their potential for catalytic impact. Every country and region, every urban agglomeration, every population aspires to increase incomes, reduce business risks and increase employment. The key to attaining these objectives is the promotion of economic sectors and industries with the potential to deliver sustainable growth. In developing countries, agriculture is often the sector that has comparative advantages. Measures can be taken to free agribusiness and agro-industry stakeholders to turn comparative into competitive advantages, and enable them to grow in a productive and sustainable manner.

Instruments are fairly distinct in terms of their management and operation, but can be combined in useful ways. Incubators are often operated within agroparks and clusters, for example. Clusters, SEZs and agroparks are often part of corridor initiatives. In other words, instruments that are delimited in geographic scope can be effective components of wider approaches.

The Masterplan for Acceleration and Expansion of Indonesia's Economic Development 2011–2025 (MP3EI) is explicit about these linkages, as seen in Figure 26.

Each of the instruments is designed to contribute to achieving the three overarching objectives of agroterritorial development discussed in Chapter 1:

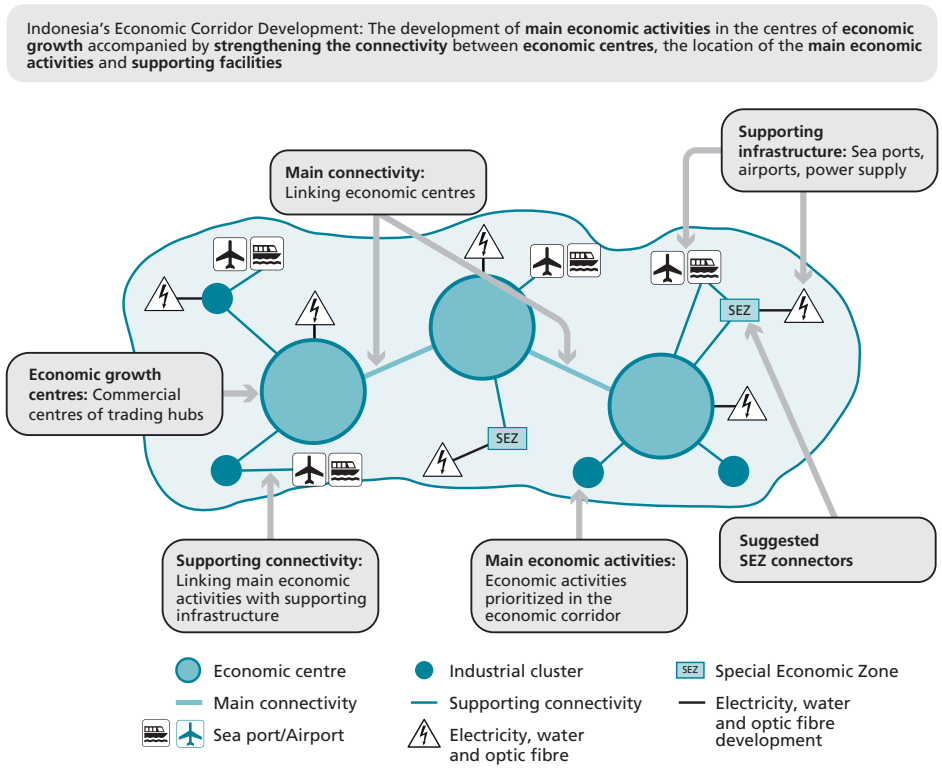
- Promoting spatially bound agribusiness/agro-industrial investments
- Building agribusiness and agro-industrial competitiveness
- Enhancing food security

Although important in a nation's tool chest to generate value-added growth and increased trade, these instruments can also catalyse agriculture production and productivity, and decentralized (subnational) development. The Southern Agricultural Growth Corridor of Tanzania (SAGCOT) initiative was established on these lines.

Instruments, and the investment they generate, can contribute to the achievement of many other national and subnational objectives. They can help create jobs, access new technologies, improve skills levels and encourage new business formation.

Each instrument seeks to generate private business response. Each instrument provides business with access to new sources of raw materials, new markets, cost efficiencies and similar advantages. Promoters will be more successful in encourag-

FIGURE 26
Economic corridor development in Indonesia's Masterplan 2011–2025



Source: Republic of Indonesia, 2011, p. 32.

ing business investment since these instruments lower the barriers and transaction costs involved in business operation and investment.

Although business objectives are relatively straightforward in terms of realizing strategies related to companies' business models, government objectives are complex. Governments must balance legitimate political interests, economic growth objectives (including concepts of regional equality), social partnership objectives, decentralization and regional development objectives, tradition, philosophical perspectives and much more. The public sector serves different and more varied constituencies than those of business investors.

As summarized in the Table 25, each territorial approach attracts investment in a different way and incorporates significant differences in terms of scope, scale and nature of investments.

The various instruments may be more or less relevant depending on the level of economic development of a particular region. For countries with substantial civil and political tranquillity that can afford to invest in platform infrastructure and education, the approaches can be highly relevant in building subsequent steps in agricultural value added and focusing on underdeveloped regions. For middle-income countries and advanced agro-industrial regional economies, the more sophisticated forms of regional cluster development will be applicable.

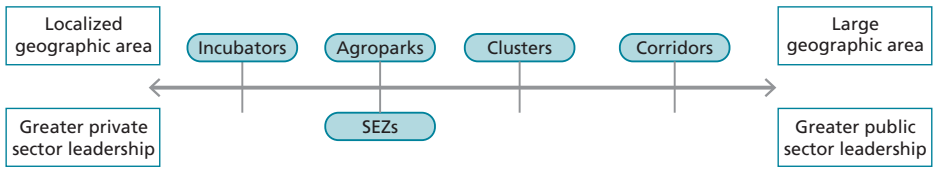
Different investment promotion tools speak to different territorial interests. Applicability of these tools is matched by variation in the role of public and private leadership in conceptualization, implementation and management. This form of leadership was discussed in Chapter 8 (and is illustrated in Figure 27).

TABLE 25
Main features of agro-industry investment promotion tools

	MAIN FEATURES		
	Overall purpose	**Geographic scope**	**Means of attracting investment**
Agrocorridor	Integrated planning of infrastructure and agribusiness interventions	Regional, national or supranational (might encompass smaller spatial development initiatives); linear agglomeration spanning across hundreds or thousands of km	Coupling infrastructure investments with trade and regulatory policy reforms and sectoral development plans
Agrobased cluster	Network linkages	Regional or provincial agglomeration (revolving around production area); from hundreds to thousands of ha	Benefits of agglomeration economies and promotion of collective action
Agro-industrial park	Value addition by processing and innovation	Urban (accessible distance from production area); a few ha	Common infrastructure, logistics facilities and dedicated services
Special economic zone (SEZ)	Export and promotion of foreign direct investment	Urban (possibly near to port area if an export promotion zone); a few ha	Advantageous economic and regulatory frameworks
Agro-incubators	Entrepreneurship development	Urban; a few hundred m^2	Common infrastructure (not always) and dedicated services to create and coach new agribusiness firms

Source: authors' elaboration.

FIGURE 27
Investment promotion tools



Source: authors' elaboration.

Research in Viet Nam and the Philippines discussed in Chapter 2 (Corridors) shows that farmer productivity and profitability derive substantially from improved connectivity and value chain-based services (World Bank, 2014). Although frequently highlighted throughout this Sourcebook, further elaboration on the latter is beyond the scope of the book. Perhaps the main point for stakeholders to incorporate in their planning and implementation is that supply chain and value chain interventions that reduce the costs of services, increase competition in providing services, and improve the quality of services go hand in hand with the five territorial instruments. Farmer connectivity can be facilitated by the instruments themselves. However, due attention to hard and soft mechanisms to link upstream producers in the value chain with corridors, clusters, agroparks, SEZs and incubators can also extend and intensify sourcing by downstream agro-industrial investors, and improve the ability of local producers to play a cost competitive and quality competitive role in their sourcing.

Policy instruments should accompany the development of most tools. The policy action may be highly complex, or as simple as a budget allocation, especially when it is a private initiative that includes a public-private element.

Successful territorially based approaches to development and investment attraction should be implemented in a context where appropriate macroeconomic and other national policies are in place, or at least where such policies do not overly constrain either regional development actors or investment promotion officers. For example, national policies related to land tenure, infrastructure and central versus regional governance may have an impact on both regional development and investment attraction. These issues are of great concern, for example, in the planning of India's agroparks and cluster initiatives.

As has been seen, SEZs are essentially a policy-led approach, with SEZ development defined and established through legislation. Corridor development typically involves a great deal of policy and budgeting effort – shown by the substantial public sector roles described in the Greater Mekong and SAGCOT cases.

Government leadership and involvement are generally much less, and more discretionary, in the case of effective agroparks, clusters and incubators.

Because of the great variety of potential and sometimes conflicting, yet legitimate, interests (and even some unproductive or non-legitimate ones, possibly involving corruption, structural inefficiencies, weak capacities and conflicting mandates), promoters

of these agro-industrial investment tools should recognize that their sustainability and success depend upon promoters and stakeholders respecting certain core principles:

- *Business focus.* Tools are designed to encourage domestic and international business investment. They must therefore facilitate investors' global competitiveness and profitability. They must allow investors to target appropriate markets, and to operate efficiently.
- *Shared benefits.* Since initiatives are territorial in nature, they are dependent on and must partner with local communities and populations. Land availability requires legal and social agreement. Employees come from communities. Supply chains are grounded in local agriculture and agricultural enterprises. Consequently, local constituents must feel that they benefit from the operations.
- *Effective implementation and management.* Management must respect sound business principles. Operations must be efficient and cost effective.
- *Effective governance*. Even more than the above, governance of the initiatives must be accountable, participatory, predictable, fair and transparent.

As emphasized in Indonesia's MP3EI Masterplan, governments have limited funds for investments, and seek to encourage private investment. MP3EI seeks to encourage PPP collaboration between the Government of Indonesia and the private sector to attract and encourage domestic and foreign investment. MP3EI identifies the requirement for a sound enabling environment "to encourage trust and maximum participation from investors to build much needed industries and infrastructure". It describes the "role of Government in the implementation of MP3EI [as providing] a set of rules and regulations that provide incentives for investors to build sectoral industries and infrastructure" (Republic of Indonesia, 2011, p. 21).

Every commodity system has unique characteristics, and each country and region has its own history, topography, culture and economic philosophies, making it difficult to generalize or to be totally doctrinaire about the application of best practice. Consequently, this Sourcebook, while citing important principles, good practices and lessons learned, is not prescriptive.

Leaders need to make sound choices that respect important principles and follow best practices for effective planning and implementation of each of the instruments. Poor implementation is a waste. It will also be a waste if the principles and good practice are not respected to the best of stakeholders' abilities. Compromises may seem prudent and will, in many cases, be necessary, but good leadership, governance and management also imply a strong communications and education function, so that all parties respect and expect competitively directed choices that are wise and fair. Implementation is not a cut-and-dried process, so that implementers would do well to be aware of lessons from both successful and unsuccessful initiatives around the world.

The main factors on which to base choices are the following:

- whether and why the tool makes sense for the economy;
- how to fit with national and subnational priorities, policies and objectives;
- how to provide platform infrastructure and services;
- enabling legislation;
- roles of public and private stakeholders in conceptualizing, planning, implementing and managing – and how these might change over time;

- PPP arrangements;
- how to provide access to land;
- how to ensure stakeholder participation, collaboration and benefits;
- how to ensure a world-class enabling environment that provides access to services at a reasonable cost.

While stories of hurdles and failure are legion, there have also been many successes. Thus, the overall lessons in this Sourcebook are that the effective choice and use of territorially based investment promotion tools are specific to location and situation; and attention to demonstrated principles and good practices is vital for success.

For many reasons – such as increased globalization, better understanding of value chains, food security imperatives, greater availability of success stories, new technologies, new perspectives on economic drivers, availability of more data and examples – there is renewed and new interest in implementing territorial approaches to investment promotion. From incubators to corridor mega-initiatives, proponents are able to learn from earlier efforts and experiences. There is little doubt that accumulated experience has led to well-defined good practices – much more is known about which principles to adopt and how initiatives should be implemented. New approaches are evolving: agropoles (in France, Mali and Mozambique) and incubators are relatively new developments, but are firmly based on past experience.

The tone of this Sourcebook is optimistic. There is no doubt that territorial approaches to encouraging investment in agro-industry can be a boon to economic growth, and to achieving many allied objectives. It is hoped that the information and guidance in the book will assist decision-makers, planners and implementers to make wise choices, and effect successful implementation.

9.2 CHECKLISTS FOR DESIGNING AND IMPLEMENTING AGROTERRITORIAL INITIATIVES

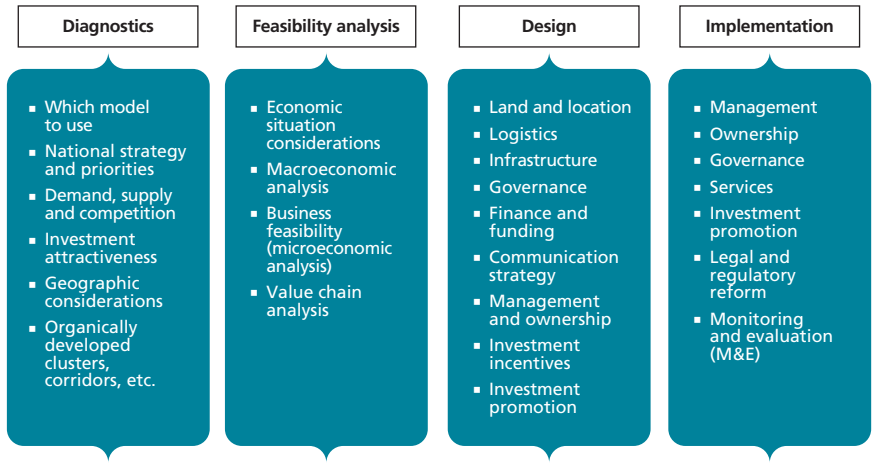
The set of four checklists is designed to guide agro-industrial planners, experts, donors and municipalities in determining which territorially based approach for economic and agro-industrial development would best fit their location and objectives, and how to design and implement the selected approach. By carefully addressing the checklist questions and tasks, users should be able to make well-informed choices and ensure considered development and implementation.

The four checklists can be used by framers and implementers of investment promotion initiatives to ensure that key steps are carried out, important information considered and appropriate choices made.

Help in responding to certain elements in the checklists can be obtained through desk research, and through interviews with government officers, private agribusinesses, potential international investors and development agencies. Other elements will require more analysis, action and consultation.

The checklists are organized around four basic themes: diagnostics, feasibility analysis, design and implementation (see Figure 28). In practice, there will be certain common elements; for example, governance considerations are as important during the design stage as during implementation.

FIGURE 28
Factors to be considered in the four checklists



Source: authors' elaboration.

CHECKLIST 1. DIAGNOSTICS – WHICH MODEL TO USE?

The diagnostics checklist will help users identify when to use one of the investment promotion tools and to identify which model (or models) should be used. In particular, it gives a list of factors to be considered in choosing a model that supports the country's economic and agro-industrial objectives, as well as being the most appropriate for the specific location.

Choosing a model

- How, and how well does the model fit with and potentially serve the country's development priorities?
- Is the model/tool consistent with the country's agro-industrial development strategy?
- Can the model (e.g. clusters) be allowed to emerge organically?
- Will the model fit with and potentially serve particular value chain development strategies?
- Will the model respond effectively to global/regional/country trends?
- Which industry and market segments will the model enable producers and investors to target?
- How do the country's production, logistics and skills bases or comparative advantages potentially respond to industry needs?
- Which model will attract a larger amount of foreign and domestic investment, and promote the competititiveness of the country/location?
- What impact will the model have on the competitive environment in the country? In the industry/concerned value chains?
- Which model(s) will overcome gaps and market failures to interest potential investors?

- How easy will it be to align the interests of members of the necessary decision-making and implementing stakeholder groups?
- Which population will be impacted by choosing a specific model, and to what degree? What are the positive and negative impacts?
- What expected impacts (nutrition, incomes, livelihoods) will the model have on affected/beneficiary populations?
- What impact will the model have on the environment at the location?

Geographic considerations

- Identify the geographic area to be targeted and the rationale for targeting.
- Are there geographies that offer a competitive advantage?
- How will the model respond to the area's geographic opportunities and challenges?
- What infrastructure gaps will need to be addressed and is the cost to close these gaps practical?
- Are there historical corridors or transit routes that could benefit several potential subsectors? Are there natural clusters that could be capitalized and developed further?
- What is the existing or potential logistics base to transport or receive/export goods?
- Are there advantages (or insurmountable obstacles) with the physical infrastructure – e.g. quick access to state-of-the art port facilities for special economic zones (SEZs) or agroparks?
- Are target stakeholders or beneficiaries geographically concentrated?
- Is agricultural production geographically concentrated?
- Is production localized in a way that justifies a geographic approach or the use of one or more of the models?
- What implications does the geographic dispersion of producers have for the location, logistical control and vulnerability of agronomic supply?
- Do the value chains of potential subsectors intersect geographically? How could this be leveraged to benefit these value chains?
- Is there a source of labour that justifies a model in a specific location?
- Can skilled technicians and professional managers be readily recruited at the proposed location to address the workforce needs for facilities and tenants?
- Are there other opportunities or binding constraints among any potential subsectors that the model could help to address?

Further considerations

- To what extent will integration (e.g. into agroparks or SEZs) offer cost, synergy and other advantages?
- Numbers of producers, transporters and buyers operating in the existing agro system. What are the implications of these numbers for the organization and implementation of a specific model?
- Where are the buyers located? What are their current supply and logistics and how will the country and model serve their competitive requirements?
- What percentage of total marketed produce would the model (incubator, agropark) handle? Is this sufficient to justify investment?

- What are the transportation costs/delays for getting the agricultural products to a collection point (e.g. cold chain logistics)?
- Are there transportation costs/delays/risks for getting the products to export markets?

CHECKLIST 2. FEASIBILITY ANALYSIS – WILL IT WORK?

This second checklist is for users to investigate the economic and business feasibility of the identified initiative. In most cases, a concise prefeasibility assessment will indicate whether a full feasibility analysis is justified.

Macroeconomic analysis

Economic considerations

- Impact on national priorities.
  - Taxes and revenues
  - Foreign exchange
  - Employment
  - Incomes and poverty
  - Investment
  - Exports
- What would be the economic rate of return (ERR) of the project? Does it justify the project?
- Are stakeholders ready for expansion/improvement over time?
- Is business registration/licensing problematic? What other business enabling environment (BEE) constraints are there for investors and operators?
- Are domestic agroprocessors protected by trade barriers, both tariff and non-tariff? How lasting are they?
- Are there adequate health and quality standards for food products?
- Are there adequate intellectual property protections and enforcement?
- Are there issues for streamlined, market-based linkages with domestic suppliers?
- Can processed products (or unused inputs) be sold on the domestic market?
- Is there political support (or opposition) for the model?
- What is the quality of the entrepreneurial ecosystem? How easy is it for new businesses to start up to serve the model? What hurdles exist?
- Does the economy facilitate innovation, technology adoption and R&D?
- What will be the impact of import duties or exchange rates on operation or supply, for example?
- Sensitivity analysis to consider the impact of changing economic conditions.
  - How would a 20 or 40+ percent change in raw materials or logistics costs affect profits and return on investment (ROI)? How likely are these changes?
  - What is the sensitivity of the model to energy prices?
  - What is the sensitivity of the model to variations in local or global demand factors?
  - What is the sensitivity of the model to variations in taxes, levies, import controls and exchange rates?

Microeconomic analysis

Business considerations

- Profitability/ROI.
- Location (accessibility to raw materials, labour and markets).
- Availability of/access to needed services.
- Market feasibility (including market access, target markets, volume and value of unsatisfied demand).
- Analysis of competition and competitive factors.
- In-depth value chain analysis.
- Supply issues (volumes, quality, reliability, cost; domestic and imported inputs).
- Projected sales, terms of business, organization.
- Technical feasibility.
- Labour and skills required.
- Equipment and utilities required.
- Operating costs.
- Financial feasibility, cash flow projections, financing needs and sources.
- Sensitivity to government policy (subsidies, incentives, taxation, exchange rates, etc.).
- What are the risks during implementation? For example, sale prices, input prices, utility costs, government policy, logistics delays and financing costs.
- Expected support or opposition from communities and other stakeholders.

The business feasibility analysis should include analysis of the model itself (from the owner and operator's perspective), as well as modelling of feasibility from the perspective of potential (target) tenants. It should include benchmarking of key competitive factors and assessment of exposure to competitive forces.

CHECKLIST 3. DESIGN

This checklist includes key design elements such as logistics, infrastructure, physical design, ownership, governance and public consultation.

Land and location

Actions to be undertaken include the following:

- Ensure access to quality industrial land (and possibly land for commercial production) at reasonable prices.
- Ensure availability of sound enabling infrastructure (e.g. ports, port access, roads, storage, power) to fill gaps, as well as decrease supply, operating and market access costs for the model.
- Ensure investment in the corridor, cluster, agropark, SEZ or incubator facilities, as appropriate.
- Identify and implement reforms to remove administrative hurdles and costs relating to enabling environment issues such as customs procedures, and licensing and registration.
- Involve the private sector in site and facilities design.
- Ensure budget and financing for design, construction and startup.
- Identify responsibilities for carrying out the above elements.
- Identify investments that will facilitate small-scale service providers to realize economies.

- Identify and implement reforms to offer BEE advantages for a concentrated location.
- Plan for sound environmental stewardship and environmental mitigation, as needed.
- Incorporate the model into the broader and longer-term policy reform and economic growth agendas.

Governance, finance and ownership

- Identify and select arrangements for development, ownership and operation from private, public and public-private partnership (PPP) options.
- Identify and deal with social, political or legal barriers for adopting the specific model.
- Identify governance, structure, incentives, subsidies or other arrangements that might affect the supply chain and implement initiatives for dealing with them. Identify and address issues that might affect the performance or responsiveness of producers.
- Ensure effective coordination among the various public sector jurisdictions and organizations that will affect the success of the investment promotion initiative.
- Ensure high-level championship (both public and private) to develop the model and meet public sector commitments.
- Ensure that political barriers to reforms are well understood and addressed for each key issue.
- Engage stakeholders in the design of the model. Implement effective public-private dialogue (PPD) and decision-making mechanisms. Identify and implement PPD mechanisms to engage stakeholders in design scenarios and decision-making.
- Establish governance structures that include stakeholder consultation and participation.
- Involve the private sector in the financial planning and financing of a model.
- Implement governance mechanisms that emphasize a sound business foundation and send investors a clear signal about the government's commitment to enforcing property rights. Ensure the inclusion of affected stakeholders.
- Implement supporting outreach, communications and trust-building mechanisms.
- Establish the objective for sustainable, bottom-line profitability.
- Design a monitoring and evaluation (M&E) plan to monitor and evaluate progress and results.

CHECKLIST 4. IMPLEMENTATION

This checklist regards implementation issues relating to management, governance, investment promotion and services. It deals with important actions needed for the implementation and governance of the locational models:

- Market and promote facilities and tenancy investments for prospective investors.
- Negotiate ownership arrangements and public-private engagements (including PPPs).
- Ensure ongoing high-level leadership commitment (from all stakeholders).
- Carry out preparatory work to select location.

- Secure land or facilitate private access to land, when needed.
- Pass enabling acts.
- Establish governance structures. Implement multistakeholder mechanisms.
- Implement financing arrangements. Provide or attract financing.
- Provide enabling infrastructure and facilities.
- Encourage domestic sourcing and strong supply chain linkages; address supply chain weaknesses.
- Implement supportive skills and workforce development programmes.
- Manage (or outsource management of) the model. Ensure an efficient, business-oriented management structure of the model.
- Develop/improve supporting entrepreneurship ecosystem.
- Establish a supervisory body responsible for ensuring performance, accountability, monitoring and reporting on results.
- Develop and implement a communication strategy for ongoing communication with stakeholders.
- Assign clear responsibility and time line for each task. Assign responsibility for "supervising implementers".
- Implement mechanisms to ensure collaboration among jurisdictions and public sector organizations.
- Develop and implement clear plans and targets for self-financing.
- Implement plan for M&E of progress and results. Assign responsible parties for monitoring results, outcomes and impacts. Ensure each target result is specific, measurable, attainable, realistic and time bound.

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Territorial tools for agro-industry development

A Sourcebook

Territorial approaches to foster agro-industrial investment at local, country and regional levels are becoming increasingly relevant as policy-makers acknowledge the influence of place-specific factors – the endowment of natural and other productive resources together with social, institutional and knowledge capital. As a consequence, a number of instruments to attract agro-industrial investments into specific locations are becoming mainstream, namely agrobased corridors, clusters and special economic zones, as well as agro-industrial parks and incubators.

This sourcebook appraises these instruments and considers their nature and objectives, their potential benefits and challenges and the approaches used to implement them. It also examines the practices that have led to both successful and unsuccessful outcomes. The publication provides a comprehensive review of the potential of these tools to enhance value addition, deliver jobs, increase exports and provide markets for new and existing producers in the targeted territories. It notes, however, that implementation of these tools poses a number of challenges. For example, planners and practitioners sometimes use them interchangeably, thus ignoring the specificities of the investments, policies and processes required, and their expected outcomes. The sourcebook concludes that these tools have potential for catalytic impact, but planners need to make sound choices that respect demonstrated principles and follow good practices for effective design and implementation.

Food and Agriculture Organization of the United Nations (FAO)
Viale delle Terme di Caracalla
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www.fao.org

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