Food and Agriculture Organization of the United Nations

Developing bankable business plans

A learning guide for forest producers and their organizations

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A learning guide for forest producers and their organizations

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Cover photograph: Acacia plants being planted for future charcoal production in Yanonge, DRC. ©CIFOR/Axel Fassio

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Abbreviations and acronyms

CAPEX	capital expenditure
CIFOR	Center for International Forestry Research
DBH	[tree] diameter at breast height
DD	due diligence
DFI	development finance institution
DSCR	debt-service (coverage) ratio
EBITDA	earnings before interest, taxes, depreciation and amortization
EIB	European Investment Bank
ESG	environmental, social and governance
ESIA	environmental and social impact assessment
ESMMP	environmental and social management and monitoring plan
ESMP	environmental and social management plan
FAO	Food and Agriculture Organization of the United Nations
FFF	Forest and Farm Facility
FFPO	forest and farm producer organization
FLR	forest and landscape restoration
FLRM	Forest and Landscape Restoration Mechanism
FMU	farm/forest management unit
FSC	Forest Stewardship Council
GDP	gross domestic product
HR	human resources
IFAD	International Fund for Agricultural Development
IRR	internal rate of return
IUCN	International Union for Conservation of Nature
KPI	key performance indicators
MA&D	market analysis and development
MAI	mean annual increment
NGO	non-governmental organization
NPV	net present value
NWFP	non-wood forest product
OPEX	operating expenditure
PBP	payback period
PEFC	Programme for the Endorsement of Forest Certification
PO	producer organization
ROAM	restoration opportunities assessment methodology
ROI	return on investment

SDGs	Sustainable Development Goals
SME	small and medium-sized enterprise
SPGS	Sawlog Production Grant Scheme
SRI	sustainable and responsible investments
SWOT	strengths, weaknesses, opportunities and threats
TGAN	Tree Growers Association of Nyandarua (Kenya)
TNC	The Nature Conservancy (Kenya)
UNCTAD	United Nations Conference on Trade and Development
WRI	World Resources Institute

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1. Introduction

1.1 WHY THIS LEARNING GUIDE?

This guide was developed to improve the capacity of small producers, their organizations and small and medium-sized enterprises to access private investment and finance for sustainable forest-based businesses. With strengthened business planning capacity, small holders and SMEs are better able to participate in forest value chains and derive increased socio-economic benefits from them.

Mobilizing and leveraging private investment that complements public investments promises to be transformational for rural economies in many developing countries[1] since the investments required to achieve the Sustainable Development Goals (SDGs) cannot be met through official development assistance and government resources alone.[2]

A wide variety of investment funds and funding instruments is currently available for financing forestry businesses. They range from traditional development finance institutions, philanthropic foundations and local capital entities, to new investors such as sustainable and responsible investors, impact funds, and business acceleration and incubation organizations. In addition, a growing number of financial investors promote sustainable investments as a strategic objective and are actively exploring business opportunities in developing countries.

However, smallholders and their producer organizations (POs), small and medium-sized enterprises (SMEs), and communities in low-income countries have historically struggled to access finance due to a number of obstacles such as:

- limited business development capacities;
- limited scale of operations;
- poor awareness of natural resource use and management, and of available processing technologies;
- insecure tenure rights;
- insufficient capacity to access markets and lack of integration among market participants along value chains;
- weak organizational structures and management capacities; and
- poor understanding of the criteria (and standards) needed for investment.

[1] This is also helped by momentum around the development of the bioeconomy.

[2] FAO and Global Mechanism of the UNCCD (2015) estimated that USD 36 billion (per year) will be needed to meet the Bonn Challenge target alone, and more than USD 318 billion per year must be invested to reach full land degradation neutrality. FAO, the International Fund for Agricultural Development (IFAD) and the World Food Programme (WFP) estimate that an additional USD 140 billion per year (globally) must be invested directly in agriculture and rural development in order to achieve SDGs 1 and 2 (FAO, IFAD and WFP, 2015). http://www.fao.org/3/a-i4951e.pdf. More recently, the Sustainable Development Solutions Network (2019) estimated a total SDG financing gap for 59 low-income developing countries on the order of USD 400 billion per year through 2030.

In addition, interested investors frequently voice concerns about the limited pipeline of potential bankable business plans in developing countries, especially in forestry; poor and inconsistent information on the investment environment; and few examples of successful business and investment cases. Both impact and commercial investors observe that many of the project proposals they evaluate do not meet their minimum investment criteria, provide little detail, and/or have risks that are perceived to be too many, too high or unclear.

As a result, POs and SMEs need improved skills to properly value their assets, position and integrate into value chains, scale up their operations and develop sustainable businesses.

Scaling up the development of sustainable forest-based value chains will have major climate and development benefits: increased productivity, increased carbon stocks (in forest assets, in wood products and through substitution of non-renewable materials and energy) and improved resilience against climate change effects. It will also contribute to reducing poverty through increased employment and incomes, and to closing the wood gap between supply and demand anticipated as a result of population and economic growth (World Bank *et al*., 2017). In addition, many forests are crucial for food production, supporting watersheds and soils, and reducing the risks of floods, landslides and other natural disasters.

Several opportunities to develop and scale up sustainable forest value chains and businesses are emerging with the global shift toward promoting greener, climate-smart bioeconomies. This shift emphasizes the use of sustainable wood products, recycled products, renewable energy, and the restoration of ecosystems.

For example, the upcoming UN Decade on Ecosystem Restoration (2021–2030), together with the call for scaled-up action to tackle climate change, will mobilize resources for sustainable forest-based activities. It will also create important opportunities and synergies to link restoration activities to income-generating opportunities for rural populations, thus giving local populations a stake in the long-term success of those efforts.

It is widely acknowledged that ecosystem restoration and businesses that operate in sustainable forest value chains are key to achieving various Sustainable Development Goals (SDGs), such as those relating to climate change, poverty eradication, food security, water and biodiversity conservation.

FAO and the United Nations Convention to Combat Desertification (UNCCD) (2015) have suggested that forest and landscape restoration (FLR),[3] can offer significant returns (7–79 percent) on investments in restoration, depending on the objectives of the restoration action. Other studies (e.g. Verdone and Seidl, 2017) estimate that every USD 1 invested in restoring degraded forests can yield between USD 7 and USD 30 in economic benefits, when the value of multiple ecosystem services is considered.[4] This

[3] FLR is the ongoing process of regaining ecological functionality and enhancing human well-being across deforested or degraded forest landscapes. FLR is more than just planting trees – it is restoring an entire landscape to meet present and future needs and offer multiple benefits and land uses over time.

[4] Additional estimates on the return of businesses that generate economic value by improving nature can be found in WEF (2020): http://www3.weforum.org/docs/WEF_The_Future_Of_Nature_And_Business_2020.pdf; or TNC (2020): https://www.nature.org/en-us/what-we-do/our-insights/reports/financing-nature-biodiversity-report/. Commonland and KPMG (2020).

guide can help turn restoration activities into viable businesses, which in turn will increase momentum towards the achievement of the Sustainable Development Goals.

FAO and partners are actively supporting capacity-building and knowledge-sharing on value chain development and finance. In April 2019, as part of the activities of the joint initiative of the Collaborative Partnership on Forests (CPF) Sustainable Wood for a Sustainable World (SW4SW), FAO organized an expert meeting on "Catalyzing private finance for inclusive and sustainable forest value chains" with the active participation of private companies, investment funds, development finance institutions, SMEs, producer organizations, development agencies and sector experts.[5] A key conclusion was that, while opportunities exist to mobilize private capital for sustainable forestry value chains, unlocking this potential requires: (1) training and mentoring to strengthen business development capacities of producer organizations and SMEs; (2) enhancing communication between the forest and finance sectors; (3) improving the availability, quality and transparency of information on forestry value chains; and (4) enhancing the investment environment. This guide follows up on the expert meeting conclusions offering a practical tool to start addressing these challenges.

1.2 OBJECTIVES OF THIS GUIDE

The learning guide has been developed to **assist smallholders, producer organizations and enterprises in the preparation of bankable business plans**. It offers a *framework* to think through, organize and develop a convincing investment proposal.

The guide introduces ten key elements, presented as modules, which should be included in any bankable business plan.[6] Templates, tips and advice also provide users with a structured way to think through and compile information related to each of these elements.

The goal is to increase the attractiveness of the business proposal to funding sources and thus facilitate access to finance. The guide is especially aimed at those producer organizations and companies that seek to scale up operations and need the know-how to do it themselves.

This guide is not meant as a comprehensive toolkit and additional resources may be needed to develop specific aspects of a business plan. Some relevant resources are suggested within each module. Deciding which additional material to consult will depend on the objectives of the business plan, the level of investment sought, and the specific circumstances in which the business operates.

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[5] Participants included development finance institutions: IFC, EIB, FMO and Finnfund; companies/funds operating in developing countries: Criterion Africa Partners, Form Ghana, Komaza, IWC, Ecosystem Services, 12Tree Finance, responsAbility, GreenWood Resources and Dasos Capital; and consultant companies Indufor and Lexeme Consulting. http://www.fao.org/forestry/48858-064440fb9719c37f1b-7b2a3e957b017c1.pdf

[6] Most associations and small enterprises will have some of these elements already, but not all. For example, associations may already have conducted a preliminary exploration of potential business ideas and gathered information on production levels and possible markets. However, this information alone is not sufficient for a funding source to appraise the soundness of the business.

This guide complements other activities supported by FAO and other development agencies, such as the facilitation of dialogue between forest and finance sectors and other efforts to strengthen legal and sustainable forest-based value chains.[7]

1.3 WHO CAN BENEFIT FROM THIS GUIDE?

The learning guide was developed to support:

- **forest and farm producer organizations (FFPOs)**, including smallholders and their associations;
- **small and medium-sized forest enterprises (SMEs)**; and
- **other organizations and companies** that provide technical assistance to local projects in forest-based value chains.

In order to take full advantage of this guide, it is highly recommended that a concrete business idea is clearly identified and that a promising and accessible market exists. The guide would be most beneficial for organizations/enterprises with annual sales in the tens of thousands of dollars, which are seeking to mobilize finance of at least USD 50 000 to 100 000, depending on local contexts. The higher the amount of financing sought, the more evidence may be required by the lender. It is less suitable for accessing funding from microfinance institutions that rarely finance long-term investments.

If, on the other hand, these conditions do not yet exist, other tools are available to initiate a business exploration, such as FAO's market analysis and development (MA&D) (FAO, 2011), or the International Union for Conservation of Nature (IUCN) and World Resources Institute (WRI) guide to the restoration opportunities assessment methodology (ROAM) (IUCN and WRI, 2014).

The guide can be adapted to the specific needs of established businesses that seek financing to expand or improve their existing activities, as well as start-ups.

Individual modules can also be used independently for a specific purpose. For example, the first module can help to prepare businesses for an initial conversation with funding sources. Organizations that have some, but not all, information can use other modules to collect and organize information that has been requested by the funding source.

The guide can also be used by technical assistance providers who work with producer organizations and companies to strengthen their capacities in business planning for inclusive and sustainable forest-based value chain investments.

Finally, the authors believe that it will be useful to forestry, restoration and livelihood development investors, programmes and projects that need to mobilize finance to strengthen sustainable forest-based value chains in order to achieve their goals.

[7] These initiatives include FAO's work through its Forest and Farm Facility, the FLR Mechanism and SW4SW; The World Bank's PROGREEN programme; the Center for International Forestry Research (CIFOR)'s work on value chains, finance and investments; and the Global Forest Financing Facilitation Network (GFFFN) of the United Nations Forum on Forests, among others.

1.4 HOW TO USE THIS GUIDE

Individuals or groups might use some or all of the guide to develop their bankable business plan independently. The authors tested this material using the following modalities, which can be replicated:

- **In-person training.** Providers of technical assistance may adapt this material to develop training programmes.
- **Semi-structured mentoring and coaching.** The guide has been piloted with a selected group of producer organizations[8] which were mentored by a team of experts over the course of ten weeks. As they worked their way through the modules, the POs completed specific tasks for each component, presented their work and received feedback from the mentoring team. This systematic, supported process was highly successful. It broke down the required work into manageable pieces, and provided structure and targeted input for their specific plan.

1.5 WHAT IS INCLUDED IN THIS GUIDE?

The learning guide is organized into four main chapters. Further to this **introductory chapter, Chapter 2** begins with a description of what makes a project's business plan bankable and includes ten modules that provide a roadmap to develop the user's own plan.

Each module provides:

- **a short description** of the component that should be included in the plan, and why it is important;
- **ready-to-use templates and tools** to organize information and think through key questions relating to the component;
- **examples** from actual cases that illustrate how some businesses presented that information;
- **useful references**, such as published and open-access reports, articles, documents and databases to enhance learning; and
- **checklists** to keep the user on track and ensure that the common concerns of creditors and investors are addressed.

Chapter 3 provides an overview of the most common **financial instruments** as well as **the criteria** adopted by **creditors and investors** to evaluate a business plan. It is useful to know these criteria in advance and assess a business plan against them to judge the feasibility of accessing these funds. For example, size of investment (often referred to as ticket size), financial criteria based on cash flows (such as debt service, return on investment – ROI), scalability, sustainability, and proven track record with competent management.

Chapter 4 suggests possible ways forward to business developers and development partners.

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[8] These POs intend to present their business proposals to a set of finance institutions that have already expressed interest in financing initiatives that can deliver modest returns while contributing to the achievement of the SDGs.

2. How to develop a bankable business plan

2.1 WHAT IS A BANKABLE BUSINESS PLAN?

What is a bankable business plan and what should it include? A business plan is a rational presentation of a business idea that uses language and performance metrics familiar to potential investors (see, for example, IFC, 2019). It presents the business concept and its aims and describes how they will be reached in a systematic way. In order to be considered "bankable" the plan must present a clear and credible earning logic.

For practical purposes, the process of developing a bankable business plan can be broken down into **ten modules**, as shown in Figure 1.

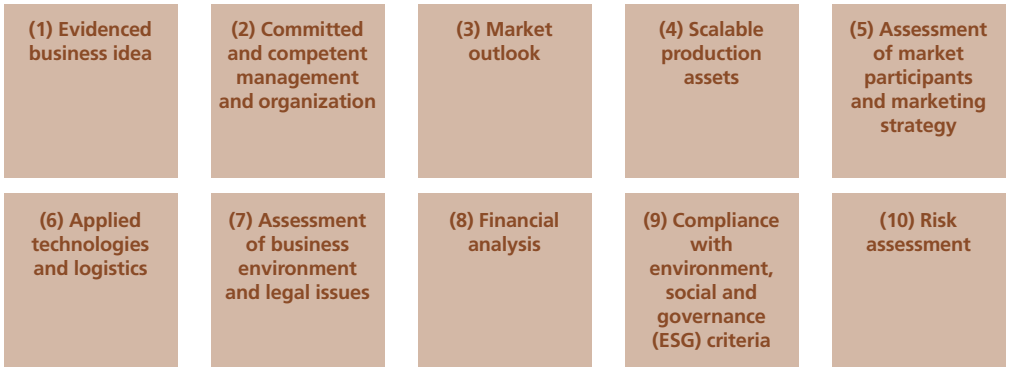


Figure 1. The ten modules for developing a bankable business plan

Source: Authors' elaboration.

The separation into modules is meant to provide manageable building blocks to facilitate the preparation of a plan. The modules are connected and, together, affect the overall sustainability of the business idea. Each financing source may have its own forms or templates highlighting the kind of information required. The information generated by working through the ten modules will provide a base and reference to complete them. Therefore, the amount of information and sequence suggested in this guide is only indicative.

How to present a business plan? A business plan should be presented as a **brief but comprehensive document** where, in principle, all ten modules are addressed and evidenced. Nevertheless, there is no need to report or attach all the technical

documentation, studies and data sheets (though their availability should be mentioned in a business plan and they should be kept readily accessible, as a business plan evaluator may ask for further material).

Data are of key importance as they link the idea to verifiable evidence and a clear earning logic. Finally, as a business plan may be evaluated by experts who may not be familiar with the specific business area or some technical terms, the language used should be **simple, clear** and **convincing**, without sounding overly enthusiastic or critical. Balanced recognition of challenges and transparent discussion of past mistakes inhibiting success are well regarded by potential investors, particularly when the plan shows how the business has learned from experience and plans to use these lessons for improvement.

How is a business plan "bankability" evaluated by creditors? Bankability is evaluated by creditors or investors in a process known as **due diligence** (DD). This is an investigation or audit of a potential investment opportunity or use of lender's funds. Essentially, it covers investigation into all relevant aspects of the past, present and predictable future of the business, covering: (1) quantity and quality assessment of the available or required assets to be owned or managed, financial statements, basic assumptions and legality of the planned business; (2) evaluation of factors that may have a future impact on the business or assets; and (3) confirmation of information provided by the project developer. DD is commonly carried out in the investing/lending phase but is also applied, on behalf of a lender, to monitor and assess the performance and use of funds of the company/enterprise that has received the funds.

The preparation of a plan requires **multiple skills** and **competencies** in technical and operational topics, business organization and management, financial modelling, market analysis, legal and institutional issues assessment, as well as a minimal understanding of the institutional framework and policy instruments that impact the business environment.

As some organizations or enterprises may not have all of these skills, they may benefit from assistance through **early-stage business development programmes** such as accelerators and incubators, or **support from appropriate experts**[9] or mentors. This assistance might be needed to accompany an organization through the whole guide or used to provide targeted input on specific modules.

[9] Such as forestry consulting companies, law firms, accountants, consultants, non-governmental organizations (NGOs), development partners, project developers.

2.2 OVERVIEW OF THE TEN MODULES

Table 1 introduces the ten modules addressed in this learning guide.

Table 1. The ten modules in brief

(1) EVIDENCED BUSINESS IDEA	
What do you want to do? And why?	A **business idea** is compelling when it demonstrates the **competitive advantage** and **uniqueness** of the venture, as well as the existence of the expertise and commitment to adequately implement it. This will include a clear idea of the purpose of the business, the product or service provided, the customers, and the problems that the business will address, as well as a simplified description of elements such as the resources involved and the earning logic. For producer organizations, it is important that members agree with the business idea and are committed to it. In addition, it is an advantage if the business idea already has a credit or sales track record, as investors seldom want to take risks with ideas that have not been at least piloted with promising results*.
(2) COMMITTED AND COMPETENT MANAGEMENT AND ORGANIZATION	
Do you have the competent and committed people to carry out the idea?	The project has to have a **committed "doer"**. This cannot be over-emphasized. There has to be a well-structured organization/enterprise and a **committed management team** devoted to carrying out the business. This can be a farmer with a vision and entrepreneurial mindset or an organization with a lean structure. Lack of a clear and committed manager or organization in charge cannot be substituted by any other criteria, even if the business environment is favourable. Key competencies also need to be in place. For producer organizations, internal governance is also key (it is a serious risk if farmers do not explicitly support the people running the organization).
(3) MARKET OUTLOOK	
Is there a market demand?	The market analysis provides **evidence of the current demand** for different products or services and the **drivers of future demand**. This is also important because it determines the potential **scale of a business** and consequently the **investment required** (e.g. volume of production, operating costs).
(4) SCALABLE PRODUCTION ASSETS	
Do you have access to a sustainable supply of resources to go ahead? Can they be scaled up?	The planned business must prove that tenure rights are secured and that production **assets** – e.g. land, forests, trees, human resources – **are in place** and that they **can be scaled up** to meet market requirements. In forestry, this means that the areas, species and productivity (e.g. growth and yield) can be or have been verified. It is important to provide documentation of property or use rights, as well as how the resource can be sustainably managed (e.g. information on forest management regime). Scaling up can take place, for example, by expanding assets, aggregating the production of additional smallholders, or establishing partnerships between companies and farmers (outgrower schemes) or among companies. In the case of niche value chains, sometimes scalability is less important, as the focus (and requirement) here is on high quality and/or a compelling story behind the product.
(5) ASSESSMENT OF MARKET PARTICIPANTS AND MARKETING STRATEGY	
Who are the market participants and how do you plan to reach your market?	A key element in business planning is a strategic assessment of the value chain and identification of market participants, who might be partners or competitors. A SWOT (strengths, weaknesses, opportunities and threats) analysis can be used to assess the competitive advantage of a business over competitors. The business plan should also include the marketing strategy, describing how the organization/enterprise plans to reach the market.

(Cont.)

(6) APPLIED TECHNOLOGIES AND LOGISTICS	
How do you want to proceed? Using which technologies? Is the infrastructure adequate?	A business plan describes the existing and planned **infrastructure** needed to implement a business. It includes specifications of the technologies to be adopted and the **required capital expenditures (CAPEX)** and **required skill sets and resources**. Investments that increase productivity, scale up production or use raw materials more efficiently and better position products in markets can be referred to as **new or improved technologies**.
(7) ASSESSMENT OF BUSINESS ENVIRONMENT AND LEGAL ISSUES	
Can you formally proceed? What are the limitations or supporting factors?	It is important to assess the environment within which a business will operate and determine if it is favourable. In practice, this requires an assessment of factors such as regulation, taxation, trade restrictions, prevalence of illegal activities, or other incentives/disincentives. A plan must also indicate how the business follows national as well as relevant international law and fulfils legal procedures. Additional information, including political stability and governance, may also be useful and can be mentioned.
(8) Financial analysis	
Is the plan financially viable? Is the cash available to pay for operating expenses? Is the project profitable?	The heart of a business plan is a **financial model** that aggregates the **costs**, **revenues** and **anticipated risks**. The result is an estimate of the cash flows with clearly substantiated underlying assumptions such as product prices, volumes, costs and risks over time. The anticipated costs have to be clearly indicated: e.g. what are the operational costs, capital expenditures, etc. Ideally, the costs are typically compared with industry benchmarks that should be available for different contexts. In addition, it is important that the financial model robustness and resilience is tested, through sensitivity analyses, against different hypothesis or scenarios (e.g. normal, optimistic, poor).
(9) COMPLIANCE WITH ESG CRITERIA	
What are the environmental, social and governance impacts?	Assessment of **environmental, social and governance (ESG) issues** is a crucial requirement for **impact** and **sustainable and responsible investors****. A statement of the ESG impacts of the business is very important for judging its all-round sustainability, but it is also an important component of the business strategy and risk management. This module is key to clarify the contribution the business makes to FLR.
(10) RISK ASSESSMENT	
What are the risks and how can you mitigate them?	**Risk assessments** and **respective mitigation measures** are fundamental to any financing decision. The risks can be categorized as business environment (political risks, market risks, operational and organizational risks) and sustainability-related risks (environment, climate, social and global health risks). The outcome of the risk assessment will impact the financial analysis (e.g. sensitivity analysis and selection of the discount rate). This module is strongly connected to the previous one and the two are often conducted simultaneously.

Notes: * For forest-based value chains, the value added proposition can originate from scaling up activities (and securing better prices/conditions); value addition through improved/higher value processing; market diversification; increased access to markets with unmet demands; resource efficiency/better use of residues; or a combination of the above. ** The assessment is accompanied by an environmental and social management plan (ESMP).

EXAMPLES: Overview of the business cases reported in this guide

The learning guide refers to business plans from actual initiatives developed by producer organizations from **Kenya, Uganda, the United Republic of Tanzania and Zambia**.

Tree Growers Association of Nyandarua in Kenya

In 2019, the Tree Growers Association of Nyandarua (TGAN), with FAO and Forest and Farm Facility (FFF) support, began to develop an ambitious business plan to set up a Timber Trading Cooperative. The objective is to aggregate all the timber sales of its members and consequently give farmers a stronger market position. Thanks to the favourable climate, soils and land available for tree farming, together with the efforts of development agencies to promote private commercial forestry, Nyandarua County is currently among the main suppliers of wood material to Kenya's major cities.

Green Charcoal Uganda: briquettes from agricultural waste in Uganda

In Uganda, two engineers founded Green Charcoal Uganda in 2015, a successful SME that is producing cheap and "green" briquettes from agricultural waste such as palm kernel husks, as an alternative to traditional charcoal, therefore reducing local deforestation. In a country where 90 percent of the energy comes from biomass, this solution can alleviate pressure on Uganda's already strained forest ecosystems. The aim of the business is twofold: find an alternative source of fuel and create an additional source of income for the smallholder farmers. In fact, Green Charcoal Uganda also works together with the smallholder farmers, teaching them to char the waste using locally fabricated carbonizers and then buying their char powder to manufacture carbonized briquettes. http://greencharcoalug.com

Central Park Bees (Swahili Honey), honey production in the United Republic of Tanzania

A locally sourced honey producer, Central Park Bees, has grown its business from supplying the major cities of Tanzania, to exporting internationally to such places as the Comoros, Dubai, Kenya, Mozambique and Oman. Central Park Bees has been in business since 2015 and in 2017 it launched the Swahili Honey brand, focusing on the production of jars of pure honey with the idea of bringing a world-class and ethically sourced honey to the market, produced by smallholder farmers and traditional beekeepers in rural areas. Central Park Bees works with more than 780 smallholder farmers from rural Tanzania, providing them with training in modern beekeeping techniques, access to beekeeping equipment loans, securing a reliable market for their honey, increasing the price received and overcoming obstacles to market access. Given that bees need open spaces with access to flowers for pollen/nectar, the beekeepers' groups and cooperatives are maintaining and restoring forest landscapes. https://swahilihoney.co.tz/

(Cont.)

Cotton stalks and other biomass-based pellets and briquettes in Zambia
This business plan was developed in 2018 by the United Nations Conference on Trade and Development (UNCTAD) in Zambia.[10] It supports and encourages business development diversification of the country's cotton producers. The development of an alternative modern and ecofriendly energy source responds to a market need to cater for the growing demand for cooking and heating fuels in Zambia, thus contributing to the goal of universal access to modern and clean energy in the country by 2030. In particular, it focuses on the use of cotton stalks and other agroforestry waste/biomass as feedstock for producing pellets and briquettes, thereby reducing pressure on forest ecosystems. The business plan content addresses most of the aspects needed in a business plan at macro-level, with the aim of overcoming the barriers of limited information on the techno-economic viability and on product development and promotion. FAO has been supporting the Cotton Association of Zambia (CAZ) through mentoring to adapt this business profile.

Note: * Green Charcoal Uganda and Central Park Bees successfully participated and received investments from ECOSTAR-The Nature-Accelerator, an intensive acceleration programme developed by ETIFOR (University of Padua, Italy) for early-stage impactful start-ups creating sustainable solutions in the agriculture, forestry, natural resource and ecotourism sectors. The acceleration programme took place from May to July 2018 in Italy and was powered by the impact investor Fledge. https://www.ecostarhub.com/nature-accelerator/.

2.3 MODULE 1: EVIDENCED BUSINESS IDEA

The first step in business planning is to clarify the key aspects of the business idea, such as its purpose, the product or service provided, the problems it will solve and the target market. In addition, the business idea should provide a concise overview of key elements such as the location, resources, investment needed and the earning logic. It is essential that the business idea gets the product-market fit right and is compatible with its business environment.

Given that the presentation of the business idea is typically an introduction to a business plan, it is particularly important to communicate it in a simple but effective way. Table 2 provides a template for organizing these ideas.

Table 2. Key questions to define your business idea

[10] UNCTAD commissioned this investment profile as part of the United Nations Development Account Project 1617K, promoting cotton by-products in Eastern and Southern Africa (ESA), intended as a tool for the Government of Zambia to promote investments in the sector. The full report is available at https://unctad.org/en/PublicationsLibrary/ditccominf2019d2_en.pdf

Business idea
Why do you want to start a business, expand an existing one, or develop a new product? What is the purpose of the business?*
What is the specific product/service you are offering?
Who is your direct off-taker?[11]
How is the product/service solving customer's problems?
What are the commercial goals (e.g. anticipated sales)?
Where will it take place and why?
Which activities will need to be undertaken?
Who will run it and why?
What resources do you have?
What type and amount of investments are needed?
What is the earning logic?

Note: * The following additional questions may help to clarify the purpose and the problems to be addressed (see FAO's RuralInvest, Lesson 3, slide 12): (1) What are the major trends affecting this group – population, territory, natural resources, environment, etc.?; (2) What are the community main strengths and opportunities?; (3) What problems arise in exploiting these opportunities?; (4) What are the group's main weaknesses and threats?; (5) What problems arise in mitigating them?; (6) Based on the above, what are the key problems? Which are crucial and which are secondary? The idea is to move from problems to priorities to solutions to investments. https://elearning.fao.org/course/view.php?id=185.

Many **business plan templates** are also available online for organizing and summarizing a business idea, such as the one used by the Central Park Bees example.

[11] The term "direct off-taker" is used in order to avoid confusion with end-consumers of the product, which are not necessarily the same (e.g. supermarkets are the direct off-takers of many cooperatives while the end-consumers are the general public or a publicly funded school).

EXAMPLE: Central Park Bees (Swahili Honey) business model Canvas

An interesting and effective template is the business model Canvas*, which is a visual chart containing and linking all the elements evidencing the business idea. The business model Canvas template is widely used, in particular by impact investors in start-up acceleration programmes. The template consists of nine connected boxes, showing how all the different components of the business idea can be linked in order to work successfully (see Figures 2 and 2a).

The template is particularly useful for brainstorming a business idea, and it can be outlined on a whiteboard, sheet of paper or notepad.

Figure 2 gives an example of a business model Canvas compiled by Central Park Bees.

Figure 2. Central Park Bees (Swahili Honey) business model Canvas

PROBLEM

List your top 1-3 problems.

- Increasing demand of honey in Tanzania;
- Lack of strong market connections for smallholder farmers in rural areas;
- Lack of knowledge on conservation and beekeeping by honey producers.

EXISTING ALTERNATIVES

List how these problems are solved today.

- Expensive and (often) imported honey in the market.

SOLUTION

Outline a possible solution for each problem.

- A world-class and ethically sourced honey;
- Providing a reliable market for smallholder farmers and beekeepers in rural areas;
- Training and support to new beekeepers in rural areas;
- Strong sales team & customer care.

KEY METRICS

List the key numbers that tell you how your business is doing.

- Physical *i.e.* factory and warehouse building;
- Human resources *i.e.* sales & marketing, factory operations team, collection officers;
- Technological *i.e.* machines.

UNIQUE VALUE PROPOSITION

Single, clear, compelling message that states why you are different.

- Originality and traceability;
- Consistent honey quality;
- Ethics & sustainability;
- Mutual rewarding business, relationship with our beekeepers;
- Maintain and ensure the health of honeybees & environment.

HIGH-LEVEL CONCEPT

List your X for Y analogy e.g. YouTube = Flickr for videos.

UNFAIR ADVANTAGE

Something that cannot easily be bought or copied.

- The manufacturing process;
- The quality control;

CHANNELS

List your path to customers (inbound or outbound).

- Direct selling through our honey shop and designed stands;
- Door-to-door distribution by agents/wholesalers;
- Trade fairs and exhibitions;
- Website.

CUSTOMER SEGMENTS

List your target customers and users.

- Middle and upper-class consumers;
- Large honey packers;
- Hotels, restaurants, coffee shops and bakeries;
- Students;

EARLY ADOPTERS

List the characteristics of your ideal customers.

- Hotels chains;
- Students (a 12g honey sachet produced specifically for them;

COST STRUCTURE

List your fixed and variable costs.

- Operational cost;
- Investment cost;
- Transportation cost.

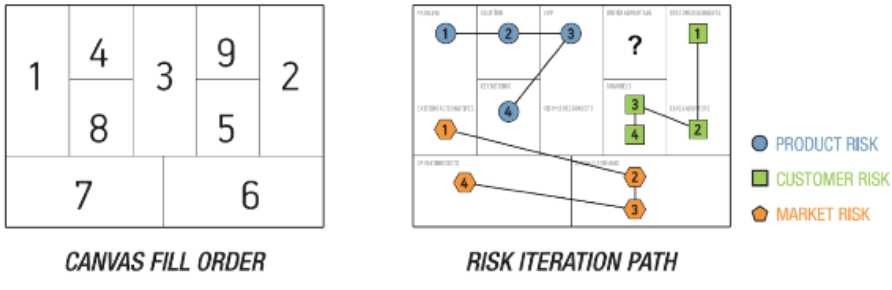
REVENUE STREAMS

List your sources of revenue.

- Sale of honey products and beeswax.

Source: Authors' elaboration based on Central Park Bees

Figure 2a. Canvas fill order and risk iteration path



Source of business model Canvas: https://bmtoolbox.net/tools/lean-canvas/.

Note: * Lean business-plan templates, available at https://bmtoolbox.net/tools/lean-canva

USEFUL REFERENCES

- **EIB.** 2020. *Investing in nature: financing conservation and nature-based solutions*. A Practical Guide for Europe. Luxembourg, European Investment Bank. (also available at https://www.eib.org/attachments/pj/ncff-invest-nature-report-en.pdf .
- **FAO.** undated. *RuralInvest toolkit*. Module 3, "Detailed project formulation and analysis" [online]. Rome. http://www.fao.org/in-action/rural-invest/toolkit/en/
- **FAO.** 2019. *RuralInvest – preparing effective investment project proposals*. E-learning course, Lessons 1 and 2 [online]. Rome. https://elearning.fao.org/course/view.php?id=185
- **IFC.** 2020. *Investment proposals* [online]. Washington, DC, International Finance Corporation, World Bank Group. https://www.ifc.org/wps/wcm/connect/corp_ext_content/ifc_external_corporate_site/solutions/investment-proposals
- **WUR.** 2020. *Landscape finance: investing in innovation for sustainable landscapes*. E-learning course [online]. Netherlands, Wageningen University & Research. https://www.wur.nl/en/show/Landscape-Finance-Investing-in-Innovation-for-Sustainable-Landscapes-3.htm

MODULE 1 CHECKLIST

- ☐ Is the business idea a proven concept (i.e. you have evidence it has worked in similar cases and could work in this case)?
- ☐ Is there sufficient clarity in terms of: (1) the problem it solves; (2) the market it serves; (3) the value it creates; (4) the earning logic; (5) the anticipated economic, social and environmental impacts?
- ☐ Is the business idea agreed and supported by stakeholders?
- ☐ Has the business idea been validated with technical experts, associated stakeholders and potential off-takers? Remember that there is seldom room for experimental ventures that are very risky from the viewpoint of the investor.
- ☐ Does the planned business have the required skills, resources and commitment to carry on with the idea and deal with the unavoidable issues that will arise?

For producer organizations, it is important that members agree with the business idea. Therefore, the process of answering these questions could be done in a **participatory way**, with trusted stakeholders and people/technicians familiar with the business. This process will also help a business developer to better understand local needs and priorities, identify workable solutions, make a preliminary assessment of the pros and cons, and verify the existence of a clear earning logic. This is also an opportunity to create/foster a sense of commitment and ownership among founders and stakeholders. Finally, providers of technical assistance can provide valuable feedback and suggestions, which could help to better understand the business plan implications, address potential limitations or reduce the time wasted on ideas that are not useful for the success of the business.

2.4 MODULE 2: COMMITTED AND COMPETENT MANAGEMENT AND ORGANIZATION

A key aspect of a business plan is to **demonstrate the organizational sustainability of the planned business**, i.e. that the business and its management are credible and capable of running in such a way as to be operational in the long term. To do so, a business plan must include information on the planned business **legal status and structure**, as well as **management staff skills and expertise**.[12] Table 3 can help to organize this information.

Table 3. Key aspects of organizational sustainability

Planned business organizational structure	
Legal form	
History, vision and mission	
Management objectives	
Organizational assets	
Organizational structure	(for FFPOs) Number of members (by age, gender)
	(for FFPOs) Information on membership fees
	(for FFPOs) Members' rights and responsibilities, e.g. what is required to be a member and what are the rights (including decision-making and financial and non-financial benefits sharing)
	(for SMEs) Shareholder structure
Human resources (HR)	Profiles of management
	Number and type of employees
	Incentives and remuneration policies (if available)
	Management and staff turnover
Accounting and management	Accounting/accountability systems in place
	Internal control mechanisms (if available)
	Annual reporting (if available)

The **legal form** is important because it defines the legal framework and the personal, financial and tax requirements with which the planned business must comply. The legal form can be changed over time according to the planned business growth or because of changes in the legal framework.

Investors are unlikely to fund an informal entity. In this case, the informal entities will need to access finance through intermediaries or other stakeholders along the value chain. In some regions, intermediation is through local funds managed by civil society organizations. The pros and cons of formalization have been discussed, for example by Dau and Cuervo-Cazurra (2014) and Colombijn and Morbidini (2017). Due to the numerous implications of choosing a specific legal form, consulting an expert is recommended. For forest and farm producer organizations (FFPOs), it is not always necessary to be formally registered by the government. However, formal status may be needed to increase

[12] In some cases, a score card can be used (in combination with financial information) to assess the health of the organization and if it is holistically moving towards a better situation in the long term.

the confidence of investors. In the case of smallholder associations, it may be helpful to share the history of how the association was formed and how it supports members. This history often links to its vision and mission, and criteria for membership. Information on the membership, by age and gender, may also be useful to certain investors.

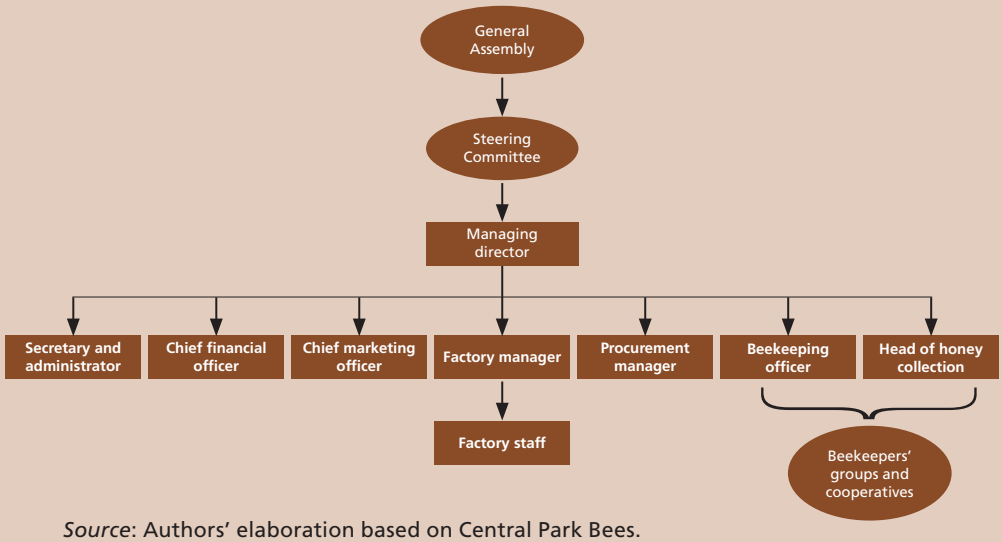
In addition, it is worth stressing the vital importance of **reliable accounting systems and transparent annual reporting** for the planned business. This is key to accessing finance as well as improving management and business decisions.

A successful business must have a **committed management** devoted to carrying it forward. This might be a farmer with a vision and entrepreneurial mindset or an organization with a lean structure. A common failing in business development is to install managers based on customary authority rather than competence and track record. Managers chosen on the basis of customary authority are often simply not equipped for the job. If there is no clear manager or organization in charge, it is unlikely that the business will be successful. Personal investment (e.g. land, capital, labour), demonstrating interest in the business (e.g. physical presence at business site), sense of purpose that goes beyond economic return (e.g. concern for members, employees) and the ability to work together and build partnerships are all revealing signs of a committed management. Organizational structure can be summarized in an **organogram**, which visually represents the structure, positions and hierarchy, as in the Central Park Bees example. Names of the key members/ shareholders and staff member could also be provided.

EXAMPLE: Central Park Bees (United Republic of Tanzania) organization and management

The management team of Central Park Bees is made up of eight people, as shown in the business organogram in Figure 3.

Figure 3. Central Park Bees business organogram



Source: Authors' elaboration based on Central Park Bees.

(Cont.)

The role and duties of each member of the management team have been reported in a business plan. Some examples are given in Table 4.

Table 4. Examples of management team members' duties

Managing director	Chief financial officer	Factory manager
Oversee all elected positions and operations to assure an effective and functioning company. Be responsible for looking for business opportunities to propose to the steering committee. Be responsible for the establishment of business contacts until the first sale, supply, or other service. Be responsible for all negotiations in sales, suppliers, or other services subject to the approval of the steering committee. Be the liaison for customer complaints, concerns, or questions outside the control of the secretary. Oversee and report to the steering committee and investors all matters pertinent to the business.	Be responsible for always knowing the financial standing of the company. Act as the liaison for all banking or financial operations. Be responsible for depositing cash or cheque deposits to the appropriate company bank account. Report all financial, banking and deposit records to the secretary for filing. Be responsible for the company's financial books, which shall be audited once a year for tax purposes by an outside party not related to the company. Render a report at each meeting concerning the updated financial affairs of the company. Be responsible for every financial calculation, including but not limited to payments via cheque, payments via cash, deposits, transfers, purchases and receipts. Collect all fees or other money belonging to the company. Keep a permanent record of all receipts and disbursements. Disburse all funds belonging to the company, pay all claims to the treasury, and keep an accurate account of all money received and expended. File all tax and audit forms to Tanzania Revenue Authority.	Plan, organize, direct and run optimum day-to-day operations to exceed customer expectations. Increase production, assets capacity and flexibility while minimizing unnecessary costs and maintaining current quality standards. Be responsible for production output, product quality and timely shipping. Implement strategies in alignment with strategic initiatives and provide a clear sense of direction and focus. Monitor operations and trigger corrective actions. Share a trusting relationship with workgroup, and recruit, manage and develop plant staff. Commit to plant safety procedures. Address employees' issues or grievances and administer collective bargaining agreements. Stay up to date with latest production management best practices and concepts. Factory inventory control.

Management staff competencies are crucial to bankability because the investor needs to know who is in charge and taking strategic decisions on behalf of the planned business and assess whether those in charge have the appropriate competencies and experience. A business plan must therefore show that the roles are clearly defined. The plan should also demonstrate the track record and show a well-structured curriculum for key staff that justifies their responsibility. A manager, accountant, supply coordinator, production manager and head of sales are some of the typical important roles that should be covered in an organization. Of course, some of these roles may be assigned to a single person, but everyone must understand who is in charge of what. In the case of producer organizations, competency in management and leadership may also be needed, along with accountability systems. Table 5 provides a matrix to organize the management team information and can be adapted to a specific organizational structure.

Table 5. Management team information matrix

Management team:						
Role examples	General manager	Accountant	Supply coordinator	Production manager	Head of sales	…
Name						
Responsibility						
Skills and experience						

MODULE 2 CHECKLIST

- ☐ Are the legal status and governance arrangements of the organization/enterprise defined?
- ☐ Is the annual reporting quality reviewed against best practices and legal requirements?
- ☐ Are the vision, management objectives, organizational hierarchy and functions of the organization/enterprise shared and well understood by key staff and shareholders? Investors are very sensitive to this and might carry out surveys/interviews among the staff and shareholders.
- ☐ Are all the data and information on the planned business reported?
- ☐ Is an HR policy implemented? How does the organization ensure commitment?
- ☐ Are the financial and technical management capacities adequate for business needs? Investors might assess the key managerial staff and management systems, job descriptions and process manuals.
- ☐ Are business organograms, written job descriptions with clearly defined responsibilities, business track records and curricula of management team reported?

2.5 MODULE 3: MARKET OUTLOOK

Secured markets are normally the starting point to any successful business plan. A business plan should include a **quantitative and qualitative examination of direct market demand**, investigating the current and potential off-takers, the drivers of future demand, the volumes, qualities and prices of products as well as the foreseen market channels. An example of anticipated wood demand and supply in Africa is provided in Box 1.

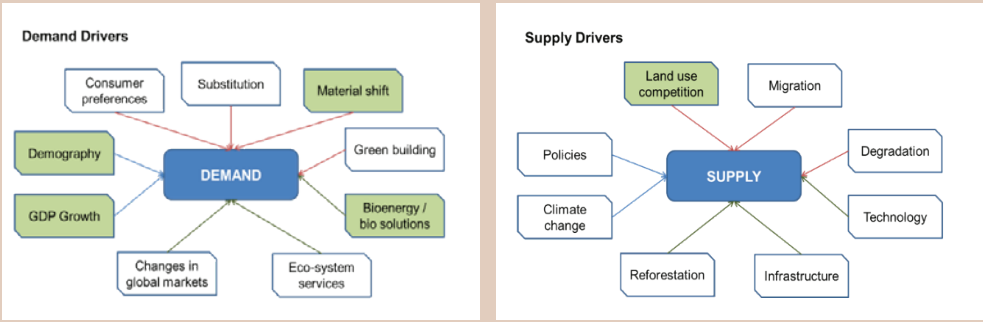
The assessment of market demand is of key importance. On the one hand, it defines the **characteristics that the product or service must have** in order to satisfy the buyer's needs (e.g. volume, price, quality, market channels or point of sales, labelling, packaging), elements which will then be needed to elaborate a first market strategy (Module 4). On the other hand, it broadly defines the existing and potential **scale of the business** and consequently the scale of the **investment** (in terms of volume of production, costs, etc.).

Different market channels may exist for different products. Typically, the highest value is gained from products that are exported. However, the highest volumes are sold to local and national markets. Where demand is increasing, for example because of economic or population growth, or because of trade limitations (such as those imposed by the COVID-19 pandemic), catering for local and national markets can be a good strategy when building resilient forest value chains.

BOX 1. Drivers of wood supply and demand in Africa

Demand and supply set the long-term foundations for forest-based value chains. Understanding these drivers can help identify investment and business opportunities in wood value chains. Figure 4 illustrates the key demand and supply drivers for forestry products.

Figure 4. Overview of demand and supply drivers



Source: adapted from FSC, 2012.

Population growth is one of the key drivers of demand for wood and wood products. Between 1960 and 2018, global industrial roundwood consumption has largely followed

(Cont.)

the trend of population growth almost doubling in size from 1 to 1.9 billion m^3. Urbanization and migration also influence future wood consumption patterns (UNPD, 2019; FAOSTAT, 2018).

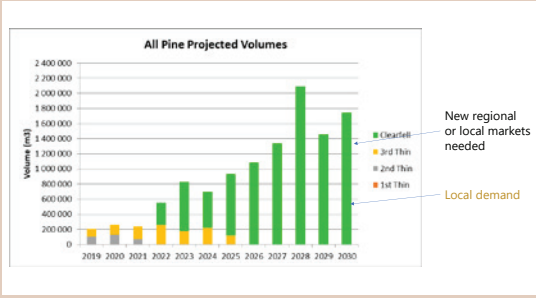
Economic development is another key driver of demand for roundwood and wood products and it is realistic to expect that the demand for roundwood will continue increasing with the growth in global gross domestic product (GDP). This demand is typically measured as consumption per capita, and an increase in GDP usually leads to a higher standard of living and thus higher roundwood consumption per capita.

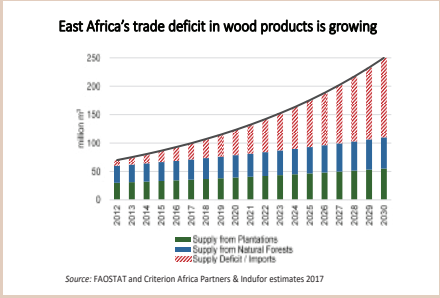
Other important drivers in the demand for wood products include:

- **shifts** from non-renewable materials and energy **towards renewable materials, such as wood**;
- **technological development** leading to material shift and use of new materials; and
- **digitalization**, web-based trade and consumer preferences.

Sub-Saharan Africa already became a net importer (in value terms) of wood products a decade ago. This offers an indication of a significant opportunity for wood-based value chains in the region (Figure 5).

Figure 5. East Africa (2012–2030) and Uganda (2019–2030) trade deficit in wood products





Future demand driven by population and economic growth tends to be more predictable than future political decisions that might temporarily interfere with markets. Only growing industrial production or trade can satisfy the growing demand for wood products. More can be produced either by increasing productivity or by expanding the scale. Either way, more investments are needed.

How is market demand evaluated? At this stage, some key information that should be collected by a business developer for the market outlook is presented in Table 6.

Table 6. Key information to be collected for an effective market outlook

Market outlook
Identification of direct off-takers
Current demand for the product or service in question, including minimum quality required
Drivers of future demand
Estimation of the quantity of the product or service that consumers or the off-taker of the end user would buy
Estimation of the price and quality that direct off-takers are willing to pay for the product or service
Typical market channels or points of sale
Labelling and packaging requirements

Table 7 provides a framework for the identification of the product or service category and the most convenient approaches to market demand evaluation.

Table 7. Market demand assessment framework

Category	Basic commodities	Perishable commodities	Innovative or specialized products	Services
Features	Non-perishable and widely sold products	Widely sold products that deteriorate or lose quality rapidly	Products that are not standardized and are not available in all the markets	Not physical items
Examples	• Bioenergy products • Industrial roundwood • Primary processed products, e.g. saw logs, veneer logs, poles • Non-wood forest products (NWFPs), e.g. oils, resins, honey, nuts and fibre products	• NTFPs such as fresh food products (fruits and berries), medicinal plants and flowers	• Secondary processed products, e.g. furniture or shaped wood • Engineered wood • Wooden handicrafts • Processed foodstuffs	• Tourism • Transport • Agricultural and forestry services • Technical consultancies • Market brokering

(Cont.)

Category	Basic commodities	Perishable commodities	Innovative or specialized products	Services
Approach to market demand evaluation	This is the easiest category to evaluate because the level of demand, price and specification of the products required by the market can be assessed quite simply. The key aspects to consider: • Medium-term trends (not simply the price at one point in time and particularly not the highest price recorded). • The product's characteristics that are required by the market (for these types of product even a small difference in size or colour can be relevant). • Identify key distributors/ wholesalers and investigate the margins they charge for their service. This is a key part of the market evaluation for these products.	These products usually have well-established markets. However, given their short life, market evaluation should be carried out very carefully, assessing when the product is going to be delivered to the market and the expected sale price at that time. There are some aspects that need to be taken into account: • These products are subject to large price fluctuations, especially in small markets, due to their variable supply in terms of volume. A good approach is to interview sellers and other market participants to assess the volumes passing through the potential market. • High prices can be caused by unexpected conditions (e.g. droughts or pests). • Seasonality is key to fresh agricultural produce. • Physical losses of products should be taken into consideration.	For these products, market evaluation requires a different approach because the level of demand and price strongly depend on the nature of the product. Given that an innovative product usually has a non-existent or limited market, the key aspects to be considered are: • The characteristics (in terms of price, quality and other novel elements) that will attract the attention of direct off-takers. • Identify the type of consumers who will most likely buy the product(s). • Select the most appropriate market channel and marketing strategy to use. • Labelling and packaging are of vital importance, in particular for processed products.	The evaluation of market demand for services raises quite different issues. Typically, services are characterized by stable supply but varying demand, therefore constant prices are difficult to calculate. The key aspects to take into consideration are: • It is crucial (although sometimes difficult) to try and establish the pattern of demand over the span of one year, and not assume a constant demand. • Several pricing options could be explored, especially if the demand is estimated to fluctuate significantly. • A challenging element for services is that the market tends to continuously change, together with the solutions proposed by other market participants.

Source: adapted from FAO *RuralInvest* toolkit, 2019.

Market information and data can be **collected through specific market studies. However,** in cases where there are no reliable market studies in place, basic information can be used from trade statistics published by national public institutions or international agencies, available grey literature (e.g. past market studies), and by conducting interviews/surveys with people familiar with the market and direct off-takers.

It is vital that the market analysis is not carried out as a static exercise, but that the organization/enterprise **monitors and keeps up-to-date information on the market**. In this case, FAO and partners can provide guidance in creating market information systems and carrying out outlook studies.

EXAMPLE: Demand assessment for Green Charcoal in Uganda

In order to assess the potential market demand for its product, Green Charcoal Uganda analysed existing studies on energy and woodfuel consumption, collected data from national statistics, and carried out interviews with potential consumers and market participants. Based on the information collected, it was able to segment market demand into two categories:

- Households: the total annual consumption for domestic biomass in Uganda was estimated at 850 000 tonnes.
- Cement factories, confectionery industries and schools: in this case it was estimated that the cement factories alone consume about 320 000 tonnes of biomass annually and the confectioneries another 300 000 tonnes.

Looking at future market trends, official studies forecast that the demand for firewood and charcoal in Uganda will increase by 70 percent by 2030, in line with the population growth and rate of urbanization. In parallel, traditional charcoal burners and firewood harvesters are facing challenges of wood scarcity. It must be considered that an average urban household in Uganda consumes 1 tonne of charcoal annually, which is equivalent to cutting down about 88 medium-sized trees. Green Charcoal Uganda planned to increase the production of briquettes to 4 500 tonnes by 2022. In addition, based on the information collected by interviewing potential consumers, they identified the distribution channels – supermarkets, retail shops and charcoal sellers for reaching households, and direct sales to cement factories, confectionery industries and schools – and defined the prices and promotion strategy.

USEFUL REFERENCES

- **FAO**. undated. *RuralInvest toolkit*. Module 3, "Detailed project formulation and analysis" [online]. Rome. http://www.fao.org/in-action/rural-invest/toolkit/en/
- **FAO.** undated. FAOSTAT [online]. Rome. http://www.fao.org/faostat/en/
- **FAO.** 2011. *Community-based tree and forest product enterprises: market analysis and development (MA&D)*. Manual. Rome. (also available at http://www.fao.org/3/a-i2394e.pdf).
- **Jacovelli, P**. 2010. Uganda's Sawlog Production Grant Scheme: a success story from Africa. *International Forestry Review*, 11: 119–125. https://doi.org/10.1505/ifor.11.1.119
- **SPGS**. 2010. *Sawlog Production Grant Scheme timber market study*. Uganda, Ministry of Water and Environment. http://spgs.mwe.go.ug/sites/files/Timber%20Market%20Study%202010_0.pdf

MODULE 3 CHECKLIST

- ☐ Is there evidence of a gap between demand and supply that warrants entering this market?
- ☐ Has the validity of demand projections for the products or services been assessed?
- ☐ Are the anticipated prices for products or services realistic?
- ☐ Are these prices competitive under current and anticipated conditions?
- ☐ Have the market channels been identified?

2.6 MODULE 4: SCALABLE PRODUCTION ASSETS

As a starting point, a business plan needs to entail a description of the **extent and nature of the scalable production assets**, i.e. the **resources** owned/managed by the organization or enterprise for which it has secured clearly defined commercial or customary rights and which can potentially be scaled up to meet market requirements.

Scaling of the assets can take place by expanding those resources (for example through reforestation/afforestation or acquisition or lease of new land) but also by aggregating smallholders with producer organizations or with company outgrower schemes (see Box 2 below). In some cases, scalability is not so important, as even small assets can provide sufficient scale for niche value chains. At this stage, it is also of key importance to provide **evidence of the assets' property or commercial/customary rights**, for example land register or contracts references. In the case of FFPOs, it is fundamental to keep up-to-date information and documentation of the members' area.

In particular, for business plans based on the use of forest or land resources, it is strongly suggested that an inventory **of forest or land resources be provided**, along with a clear description of **current and future management regimes** as evidence of raw material availability and sustainable management of the resources in question. Table 8 provides a sample template for organizing this information. It is recommended that this information be presented by **farm** or **forest management unit (FMU)**, although organizations with many members will present it in an aggregated way (for example grouped by area, type of farmer, or characteristics of the resource).

Table 8. Key information on forest and land resources availability, productivity and management

Forest and land resources and management	
Farm(land)/forest management unit (F/FMU)	
Ownership	
Type of land use	
Hectares (net planted and gross)	
Morphology and soil data	
Climate data (e.g. temperatures, rainfall, extent of dry season and/or high rainfall)	
Infrastructures present in the area	
Forest	Description of the management regime (e.g. for even-aged forests, age of thinning and final harvest; for uneven-aged forests, minimum diameter cutting limits, felling cycle, etc.)
	Tree species and percentage of each per hectare
	Current age and diameter distribution
	Growth and yield model (e.g. commercial mean annual increment [MAI], by species)
	Harvesting volumes by wood assortment (size and quality), by year
	Stumpage, roadside or mill gate price
	Distance from existing processing industry
Farm(land)	Description of the management regime
	Crop species
	Growth and yield model
	Harvesting volumes
	Land unit area
	Number of producers per unit

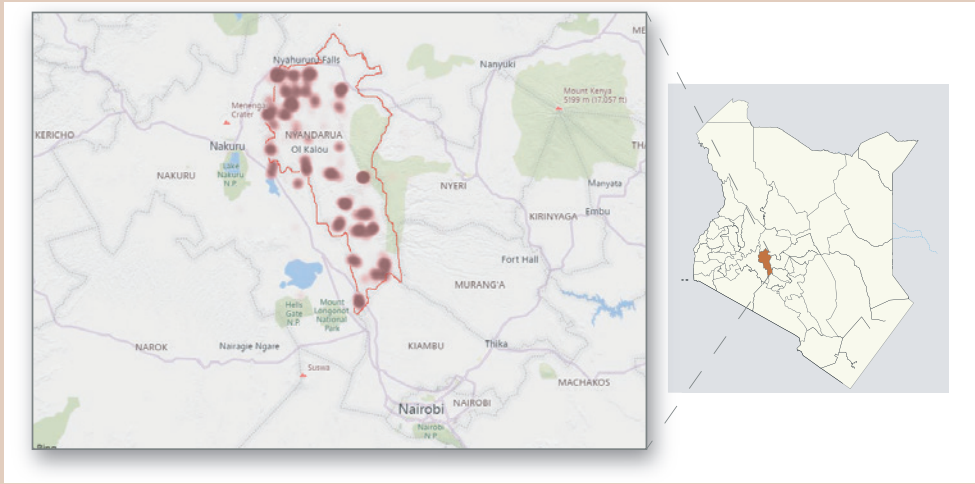
For businesses based on processing (e.g. production of sawnwood or charcoal) or on production of non-wood forest products (NWFPs, e.g. honey, nuts), information needs to be collected on production levels achievable with existing technologies or management regimes.

If possible, and relevant, over time the organization or enterprise should develop or adapt information systems that contain **geospatial information** (e.g. GIS-based maps), ideally by farm/FMU. If the base exists, it will be easy to add details on species, age classes, growth and yields, ownership, infrastructure and other relevant information. FAO and its partners can provide guidance in finding the adequate solutions and appropriate toolsets to create information systems.

EXAMPLE: Resource base for Tree Growers Association of Nyandarua in Kenya

In order to determine its resource base and upscaling opportunities, TGAN carried out a tree inventory to collect data among its members. The inventory, completed in 2020, showed that around 3 000 farmers (2 064 male and 936 female) have around 1 500 ha of tree plantations, representing approximately 0.5 percent of the total land area of Nyandarua County (Figure 6).

Figure 6. Map of TGAN tree farmers (clusters of forest farms in red)



The inventory gathered data on species (i.e. 48 percent eucalyptus, 44 percent cypress, 3 percent pine and 6 percent other species) and tree size. Volumes have been estimated. Potential harvestable levels were calculated by applying basic growth and yield models. Figure 7 reports the inventory summary.

TGAN's business idea is to:

- increase efficiency of production by realizing economies of scale through the establishment of a cooperative that would aggregate, sort and market production;

(Cont.)

- expand the volume and quality of timber to be sold in the local market; and
- collectively negotiate fairer prices for tree products.

Based on the inventory data, TGAN is also planning to expand both the number of participating farmers and the area allocated to tree planting by farmers (from an average of 0.5 ha/farmer to about 1 ha/farmer), reaching a planted area of about 3 000 ha by 2025 and doubling the current wood flows in five years. This would allow TGAN to become a major wood trader in the regional market.

Figure 7. TGAN inventory summary

Estimates from inventory

Extrapolated volumes from inventory

Values		Average/ha	Notes
Total Volume M^3	341,479.00	330.61	Extrapolated from a sample of 62,015 trees
Sawlog Volume M^3	150,071.00	145.29	Trees above 20 cm DBH*, not transmission poles
Firewood Volume M^3	83,810.00	81.14	Trees not sawlogs or transmission poles greater than 15 cm DBH
Number of Transmission Poles	217,791.00	210.86	Eucalyptus between 16 and 30 cm dbh
Hectares of Trees	1,032.88		
Count of Farms	2,473.00		
Number of trees	1,706,359.00	1,652.04	Extrapolated from a sample of 62,015 trees

Estimated MAI** weighted by tree prevalence		% volume	MAI/tree type	Weighted MAI
Values				
Sum of Cypress M^3	147,752.27	44%	20	8.72
Sum of Eucalyptus M^3	161,091.84	48%	14	6.66
Sum of Pine M^3	10,781.04	3%	18	0.57
Sum of Others M^3	19,174.52	6%	14	0.79
			Mean MAI/HA	**16.74**

* DBH Diameter of a tree at 1.3 meters (breast height)
**MIA: mean annual increment, M^3/ha/year

Assumptions:	Year 1	Year 2	Year 3	Year 4	Year 5	Notes
Farmer enrollment in TGAN	50%	65%	80%	95%	100%	Assumed percentage of the farmers in the inventory who sell through TGAN
Additional area planted	10%	40%	60%	90%	100%	Assumed percentage of the reported additional area available for tree planting planted
calculated						
Area from the TGAN (cumulat	*516*	*671*	*826*	*981*	*1033*	
Additional area available for p	*46*	*184*	*277*	*415*	*461*	

Summary results

Products Available	2020	2021	2022	2023	2024	Notes
Carbon (tonnes)*	251	1,256	2,762	5,022	7,533	Area enrolled x MAI/ha x 0.5 (dry weight wood) x .5 (proportion carbon in wood)
Sawlogs (cubic meters)	3,800	4,940	6,080	7,220	7,600	Area enrolled x Proportion of total volume that is sawlogs in the inventory x MAI
Firewood (cubic meters)	2,122	2,759	3,396	4,032	4,245	Area enrolled x Proportion of total volume that is firewood in the inventory x MAI
Transmission poles (count of	108,896	141,564	174,233	206,901	217,791	Transmission poles/ha x Area enrolled

**Assumes 709,000 tCO2e sequestered over 30 years*

Assets		Notes
Carbon (tonnes)	85,370	Total volume x 0.5 (dry weight wood) x .5 (proportion carbon in wood)
Sawlogs (cubic meters)	150,071	Trees above 20 cm DBH*, not transmission poles
Firewood (cubic meters)	83,810	Trees not sawlogs or transmission poles greater than 15 cm DBH
Transmission poles (# all class	217,791	Eucalyptus between 16 and 30 cm dbh
Hectares of trees	1,033	Sum of reported area in inventory
Number of farmers	2,196	Sum of reported farmers in inventory
Additional hectares available	461	Sum of reported area in inventory

Box 2. Partnering for scale

Partnering with established businesses is another option for smallholders and their associations to scale up and finance operations.

Some of these established businesses[13] explicitly seek to work with smallholders for a number of reasons, such as to: (1) secure larger volumes of raw material supply and achieve economies of scale; (2) increase business sustainability; (3) reduce risks; and (4) improve their performance on environmental, social and governance (ESG) criteria, advancing their mission and strategy, which includes social and environmental impact. Broadening and diversifying the sourcing of raw material, and attending to environmental and social aspects, contribute to reducing risks, increasing the long-term profitability of the business and attracting further capital.

By partnering with smallholders (e.g. through outgrower schemes), the company can secure greater volumes of raw material supply, advance social and environmental objectives, and reduce certain risks (e.g. fire, because local communities become vested in the success of the business and can contribute to fire monitoring/management practices). For smallholders and communities, the partnership is a way to integrate their productive activities into a value chain and can help to secure markets for their products over multiple years, fair payment for their products, access to quality input materials (e.g. seedlings), technical assistance and training, finance, and employment opportunities.

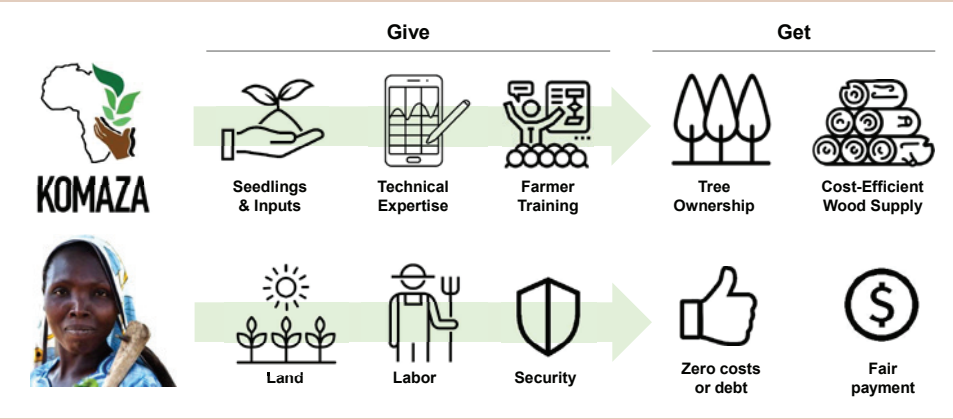
One example is Komaza's partnership model with smallholder farmers. Komaza, established in 2006, is owned by private investors. The company operates an innovative "smallholder forestry vehicle" model with the goal of becoming Africa's largest forest business. It partners with rural farmers to plant woodlots that are managed collectively (Figure 8). According to the World Resources Institute and The Nature Conservancy (WRI and TNC, 2018), as of 2018 Komaza had planted over 2 million trees with more than 9 000 farmers, providing direct support via a network of 350 rural field staff who assist farmers through the forestry life cycle and plan to restore 5 000 ha by 2020. Smallholder plantations cover an area of 3 800 ha. When the timber is ready for harvest, Komaza buys the trees from the farmers at a fair farm gate price. The price is determined every year based on an algorithm that starts with the retail price of raw wood and subtracts all costs to calculate the price to be paid to the producer. After purchase, Komaza processes raw wood into higher-value products, such as building poles and fence posts, and sells those to the broader market.

Komaza was considered by WRI and TNC as a company that is commercially viable, scalable, replicable, and environmentally and socially beneficial.

[13] These include Kilombero Valley Teak Company (United Republic of Tanzania), Komaza (Kenya), Green Resources (Uganda), New Forests (United Republic of Tanzania), IWC, Form Ghana (Ghana), 12Tree (Colombia, Costa Rica, Dominican Republic, Ecuador, Guatemala, Panama, Peru).

(Cont.)

Figure 8. Komaza partnership model with smallholder farmers



Source: Komaza.

Partnering with an established business can also promote the active conservation of wildlife and natural areas (e.g. forests, grasslands, wetlands).

For smallholders, however, working with established businesses is not a panacea. For example, the partnership agreement may split most of the advantages in favour of the business or fail to include important clauses (such as provisions for grievance mechanisms). Working with a bigger business may also foster dependency that is difficult to break out from, and/or limit future options.

For these reasons, it is recommended that, before entering into an agreement, its terms are carefully assessed. FAO and the International Institute for Sustainable Development's Model Agreement for Responsible Contract Farming (2018) is a useful reference in this respect.

USEFUL REFERENCES

- **Abed, T. & Stephens, N.C.** 2003. *Tree measurement manual for farm foresters*. 2nd edn. M. Parsons, ed. Canberra, Australia, Bureau of Rural Sciences, National Forest Inventory. (also available at http://data.daff.gov.au/mapserv/plant/report_list.phtml).
- **Caldwell, B. *et al.*** forthcoming. *Taking stock: what we grow together counts*. Rome, FAO.
- **FAO.** undated. Open Foris – a set of free and open-source software tools that facilitates flexible and efficient data collection, analysis and reporting. [online]. Rome. http://www.openforis.org/
- **FAO.** undated. Open Tenure – open-source software designed by FAO to empower communities. [online]. Rome. http://www.fao.org/e-agriculture/news/open-tenure-open-source-software-designed-fao-empower-communities
- **FAO.** 1981, reprinted 1992. *Manual of forest inventory: with special reference to mixed tropical forests.* FAO Forestry Paper No. 27. Rome. (also available at http://www.fao.org/3/ap358e/ap358e00.pdf).
- **FAO.** 2008. *National Forest Monitoring and Assessment. Manual for integrated field data collection*. Working Paper NFMA 37/E. Rome. (also available at http://www.fao.org/forestry/14727-072b68bcfa49334202f1586889517ce24.pdf).
- **FAO.** 2020. *Global Forest Resources Assessment (FRA 2020)*. Rome. (also available at http://www.fao.org/forest-resources-assessment/en/).

MODULE 4 CHECKLIST

- ☐ Have the land tenure rights been clearly defined and documented? Can they be verified?
- ☐ Are verifiable data on land area and other resources available and reported in the business plan?
- ☐ Are future, regularly occurring maintenance (or reinvestment) costs included in the business plan?
- ☐ If use of forest or land resources is foreseen, are data on productivity and management available? Can these data be verified?
- ☐ Does the organization/enterprise have the capacity (e.g. an information system) to monitor changes in forest and land resources?

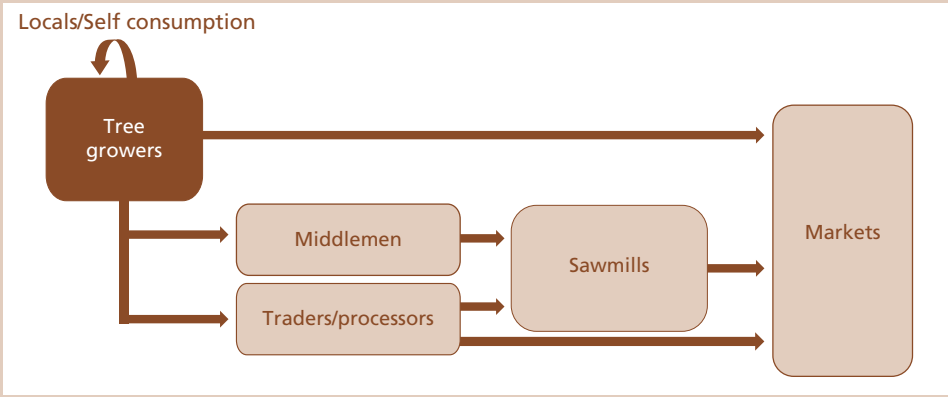
2.7 MODULE 5: ASSESSMENT OF MARKET PARTICIPANTS AND MARKETING STRATEGY

A business plan should also indicate how it will **ensure a strong position in competitive markets**. This requires **assessing the market participants** and sketching out a **marketing strategy**. This is key to clearly identifying who the market participants are, assessing their **status and role**, and discerning their potential as partners or competitors. A useful way to start is to carry out a simple mapping of main relevant businesses that operate in the value chain, as in the roundwood example from Kenya. It is useful to define the specific **position of the planned business compared to other businesses within the value chain**. This exercise is better done with the support of trusted stakeholders and people familiar with the market.

EXAMPLE: Roundwood value chain in Nyandarua County (Kenya)

Figure 9 represents the roundwood value chain mapping exercise carried out by the Tree Growers Association of Nyandarua (TGAN).

Figure 9. Example of value chain mapping



Source: Authors' elaborations.

The stakeholders in the Nyandarua .County roundwood value chain have been identified as follows:

- Tree growers: small- and medium-scale farmers managing woodlots and typically selling the wood on stumpage.
- Middlemen: buying standing trees from tree growers and selling to a trader processing the trees into sawn timber. Middlemen are not always part of the trade, as tree growers also sell directly to traders.
- Traders/processors: buying standing trees from tree growers or middlemen. A trader may operate within the county and/or transport the timber to other markets.
- Treatment plant: buying eucalyptus poles at stumpage or factory gate from middlemen.
- Power chainsaw operators: hired by a trader to harvest the trees. Chainsaw operators generally lack safety awareness and protective gear and are weak on cutting skills to maximize sawn timber volumes.

(Cont.)

- Processing entrepreneurs: hired by a trader to process logs into sawn timber in designated timber yards (not permanent as they relocate with the availability of raw materials, normally on leased premises). In most cases, the trader owns the processing machinery.
- Transport entrepreneur: hired by a trader to transport logs and sawn timber to markets. A trader sometimes has own transport facilities.

The main final consumer of transmission poles in Nyandarua County is the Kenya Power & Lighting Company (KPLC). Currently, due to the Rural Electrification project implemented by the government, the demand for poles outweighs the supply. However, due to quality challenges, KPLC is considering sourcing poles from outside Kenya and using alternatives such as concrete poles. TGAN identified the opportunity to replace the middlemen in the transmission poles (among other products) business. Working directly with farmers, TGAN would have a strong competitive advantage and could tap the opportunity for both improving the quality of poles on the supply side and increasing the tree growers' income on the market side.

For small producers, other market participants may often provide business support (see Box 3). For example, middlemen, traders and processors often enable production with advance payments to small producers. As small producers organize themselves and engage in collective bargaining and marketing, they may begin to perceive other market participants as competitors.

Box 3. The market as a source of finance

For many producers, other stakeholders along the value chain can be, and often are, a source of finance. Traders and middlemen often pay producers in advance, thus enabling the payment of labourers, harvesting, transport, etc. This advance cash (a form of **product financing**) can be a necessary requirement for production to take place when producers do not have cash at their disposal. Alternatively, the future purchase of products can be formalized in a contract, and the contract can be taken to a bank and used as collateral to request a loan.

Another form of value chain finance is **contract farming**, where transactions (including finance) between small producers and other value chain stakeholders are governed by pre-established agreements that can be more or less formal. Some forms of contract farming can be seen as outsourced production (often called *outgrower schemes*), where small producers receive technical assistance, seedlings and other inputs from a larger operator (e.g. larger producer, processor, etc.) in exchange for a commitment to sell their products under agreed conditions.

Further information on these forms of finance can be found in Miller and Jones (2010), Macqueen *et al.* (2018), and in FAO's Contract Farming Resource Centre: http://www.fao.org/in-action/contract-farming/en/.

It is important at this stage to reassess whether the other market participants are indeed competitors or could actually become partners. For example, processors could be seen as natural partners for timber growers, as they will seek to buy wood. However, in some cases, processors may also have their own plantations and seek a monopolistic position in the market. To counter these tendencies, the organized producers need to make sure that they control a sufficient part of the raw material supply.

Table 9 can be used to **organize information about other value chain participants** and how they can contribute to (or hinder) the success of the business.

Table 9. Framework for assessing the market participants

Market participants						
Category example	Tree grower	Primary processor	Manufacturer	Trader	Retailer	...
Organization/enterprise						
Location						
Products/services offered						
Partner or competitor						
If partner, potential synergies						
If competitor, competitive advantage						

EXAMPLE: Central Park Bees (Swahili Honey) competitor matrix

In the United Republic of Tanzania's honey production market, a number of similar companies sell pure honey in supermarkets and commercial stores. Central Park Bees carried out a competitor analysis on these companies' quality versus prices for the amount of pure honey they sell alongside Swahili Honey's product (Figure 10). This matrix exercise allowed Central Park Bees to better define its market position and competitive advantages and disadvantages.

Figure 10. Swahili Honey competitor analysis matrix

It is important to understand the **potential synergies with partners** and the **competitive advantage over competitors**. Several tools are available for this. A useful exercise is to map potential competitors and partners based on strategic market positioning variables, as in the Central Park Bees example. It is worth mentioning that a foresighted business developer would not only look at the current market participants but, based on the business growth strategy, also identify and assess **who the partners and competitors will be once the business grows**.

To assess the competitive advantage of the business over competitors, a common practice is to carry out a **SWOT analysis**. SWOT is a simple and practical tool that allows identification of an organization's or enterprise's **strengths, weaknesses, opportunities and threats in relation to the competitive environment**. The SWOT analysis (Figure 11) is done in two steps: (1) identifying the key **strengths and weaknesses** of the organization/enterprise – these are internal factors that can represent an advantage or disadvantage against the competitors (e.g. resources, management, technology); and (2) identifying **opportunities and threats** – these are external factors or situations that may bring an advantage or damage the business, usually linked to the business climate or competitors' actions. A SWOT analysis is more effective when it is done in a participatory way by a group of people directly involved in business planning, with the support of key technicians and stakeholders.

Figure 11. SWOT analysis framework

Using the information from the SWOT analysis on the target market,[14] potential partners and competitors, the business is ready to develop its own **marketing strategy**. A marketing strategy refers to the set of actions that the organization/enterprise plans to implement in order to reach the market and promote its product or service value proposition, i.e. how it helps consumers to achieve their results and why it is better than similar products or services on the market.

A common marketing strategy is based on the so-called "4Ps": (1) **price**, that is the value of a product (or service); (2) **presentation**, specifically the characteristics (quantity, quality) of the product or service; (3) **promotion**, meaning the actions to reach and enter the market; and (4) **place**, i.e. where and when the product or service will be sold. These elements form the base of a coherent and well-structured marketing strategy. Table 10 lists the key aspects to include in a business plan's marketing strategy.

Table 10. Key information to include in a marketing strategy

Marketing strategy
Pricing of the product or service
Product or service characteristics (e.g. sizes or assortments, quality, labelling and packaging, etc.)
Promotion strategy (e.g. advertising, media, participation in fairs, word of mouth, etc.)
Market channels or points of sale (e.g. wholesaler, retail, online sales, etc.)
Time delivery (e.g. when products and services will be delivered)

In general, the competitive environment is not static. On the contrary, partners and competitors change their strategies, adopt new technologies and explore new markets. Therefore it is essential that the organization or enterprise **monitors the actions of the partners and competitors** in order to **respond and adapt rapidly to a changing business environment**.

[14] Additional tools and frameworks are available to assess the market structure (e.g. competitor concentration, barriers to entry). **Porter's Five Forces** can be used to analyse and understand the competitive forces in a market and help to define a business' marketing strategy. For more information: https://www.isc.hbs.edu/strategy/business-strategy/Pages/the-five-forces.aspx

USEFUL REFERENCES

- **Bolin, A., Macqueen, D., Greijmans, M., Humphries, S. & Ochaeta Castellanos, J.J., eds.** 2016. *Securing forest business. A risk-management toolkit for locally controlled forest businesses*. London, International Institute for Environment and Development. (also available at https://pubs.iied.org/13583IIED/).
- **Bolin, A., Macqueen, D., Greijmans, M., Grouwels, S., Camara, K. & Ndethiu, L., eds.** 2018. *ForBInc. Forest business incubation toolkit by and for forest and farm producer organisations*. London, International Institute for Environment and Development. (also available at https://pubs.iied.org/13596IIED/).
- **Macqueen, D. (ed.) *et al.*** 2012. *Supporting small forest enterprises – a facilitator's toolkit. Pocket guidance not rocket science!* IIED Small and Medium Forest Enterprise Series No. 29. Edinburgh, UK, International Institute for Environment and Development. (also available at https://pubs.iied.org/13558IIED/).
- **Udemy.** *Value proposition design: develop compelling value propositions for your products & services using a worldclass business tool.* E-learning course [online]. California, USA. https://www.udemy.com/course/create-products-services-that-customers-want/

MODULE 5 CHECKLIST

- ☐ Is the market and value chain positioning of the planned business clear?
- ☐ Have the market participants, including both competitors and partners, been assessed?
- ☐ Have the potential synergies (with partners) and competitive advantages (against competitors) been defined?
- ☐ Has the organization/enterprise developed a first marketing strategy, providing insights on which actions are planned in order to promote the product or service?

2.8 MODULE 6: APPLIED TECHNOLOGIES AND LOGISTICS

Applied technologies, infrastructure and equipment influence the ability to access value chains as well as influence the characteristics of the product or service that can be marketed. As such, they determine the investment need, ecological footprint, productivity of the business, possibility of scaling up production, workforce skills needed, and efficient use of raw materials and other inputs. Therefore, a business plan should specify **the technologies that will be used** as well as the **logistics** required to carry out activities such as harvest, aggregation, storage, transport and processing. If relevant, the business plan should mention the capital expenditures (to acquire technology or equipment) and the skill sets needed to operate them. It is worth highlighting that aspects such as **access to energy** and **availability of the required skill set and equipment** are particularly crucial in developing country contexts and must be carefully taken into consideration by a business developer.

If the business envisions the adoption of or investment in technology, it is important to: (1) consider the existing and planned technologies, and assess their pros and cons; and (2) look for technology benchmarks and options from the region (e.g. capacity, required skills, equipment and energy resources and costs) and identify the most appropriate option.[15] This information can be organized in the following template (Table 11).

Table 11. Key information to include regarding technology

Planned technological options	
Technology	
Specific function	
Raw material use	
Processed volume quantities and qualities	
Availability of required resources	Equipment
	Skill set
	Energy
Investment	Capital expenditure (CAPEX) estimate
	Expected duration
	Operating costs per year
	Maintenance costs per year

[15] Even if the implementation of some technologies is not feasible, perhaps due to costs, comparison of technologies is always recommended as this helps to select the best in the short term, and to plan future improvements in the long term.

EXAMPLE: Technical and economic viability of investing in a biomass briquetting plant in Zambia

This example shows how information on a planned technology could be concisely reported in a business plan.

A biomass briquetting plant with a production capacity of 8 tonnes/day has been proposed under this business plan in Zambia. The chosen briquetting mill models use a wide range of raw materials, including cotton stalks and residues from soybean, maize and other agroforestry residues. The technical specifications of the briquetting mill are summarized in Table 12.

Table 12. Technical specifications for a briquetting plant

Item	Specifications
Product and raw materials	
Finished product	75 mm diameter, 50 350 mm in length cylindrical briquettes
Production capacity	800–1 000 kg/hour depending on raw materials
Raw material size and moisture content	Up to 10 mm size raw materials of 8–12% moisture content
Electricity/power requirements	
Required power connection	59 hp/45 kW
Amp load	59–73 amp approximate
Power consumption	Unit/hour

Concerning operation and implementation, the proposed briquetting mill could start with a single eight-hour shift for 150 days (from June/July to November/December) per year, expected to increase by 16 percent annually until it hits 300 days of production per annum. For implementation, the following support infrastructure has been identified:

- up to 3 000 m^2 of land, i.e. 150 m^2 space for the mill, 500 m^2 product storage, 50 m^2 office space, and the remaining 2 300 m^2 space for raw materials in bulk and future expansion area;
- three-phase electricity supply connection;
- reliable water source; and
- good access roads and telecommunications coverage.

Table 13 shows the estimated planned capital costs for the investment, including costs for the land and building, plant and assorted equipment such as tractor and trailer, light truck and a raw materials chipper. Project development fees are assumed to be 5 percent of all the other capital costs.

(Cont.)

Table 13. Total briquetting plant capital expenditure

Capital costs	USD
Land and buildings	17 750
Mill and equipment	40 000
Tractor and trailer	18 000
Chipper	4 000
Light truck	15 000
Project development fees (5% of costs)	4 737
Total	99 487

Most briquetting mills are modular and their production capacity can easily be increased by adding more units.

Besides the available technology, the state of **logistics and infrastructure** needed to move the products to the points of sale must also be assessed. For example, lengthy and costly transport due to distances, road conditions, and the presence of nontariff barriers (e.g. police roadblocks, inspection blocks) can make wood and non-wood-based businesses uneconomic. The plan should convey that the conditions of **transport infrastructure** (e.g. main, secondary and forest roads as well as rail, ports, airports and sometimes rivers) have been verified. If vital to the business, it is also important to verify the availability, conditions and costs of **storage and collection facilities** (e.g. collection yards, pits, shed storage). A practical way to introduce these business logistics is to draw a map indicating, for example, the location of tree growing, mills, points of sale, etc.

AVAILABLE TOOL: OpenStreetMap

For drawing up a map, an open-source provider such as OpenStreetMap is freely available. www.openstreetmap.org

Along with the infrastructure conditions, the **availability, capacity and costs of external services** must also be verified in advance, starting from the elements listed in Table 14. External services refer to all those providers that are needed to run the business. For example, if the business involves shipping, access to ports, shipping costs, storage and loading capacity have to be assessed in a business plan.

Table 14. Key elements of external services

Availability, capacity and costs of external services
Availability of external services needed to run the business (e.g. harvesting operators, truck transport operators, shipping operators)
Capacity size of external services
Costs of external services

USEFUL REFERENCES

- **ANSI.** undated. American National Standards Institute Webstore [online]. Washington, DC. http://webstore.ansi.org
- **ASTM International.** undated. Wood Standards. West Conshohocken, USA. (also available at http://www.astm.org/Standards/wood-standards.html).
- **EU.** undated. Standards in Europe. Brussels, European Union. https://europa.eu/youreurope/business/product/standardisation-in-europe/index_en.htm
- **FAO.** 1992. *Cost control in forest harvesting and road construction*. Rome. (also available at http://www.fao.org/3/T0579E/T0579E00.htm).
- **Gatsby.** undated. Kenyan Forestry Sector. London, Gatsby Charitable Foundation. https://www.gatsby.org.uk/africa/programmes/kenyan-forestry-sector
- **PFP.** 2016. *Value chain analysis of plantation wood from the Southern Highlands*. Iringa, United Republic of Tanzania, Private Forestry Programme. (also available at http://www.privateforestry.or.tz/en/resources/view/value-chain-analysis-of-wood-plantation-from-the-southern-highlands).

MODULE 6 CHECKLIST

- ☐ Is a list provided of the main technology planned for use, with associated detailed information?
- ☐ Has energy access, including costs, been assessed?
- ☐ Does the organization/enterprise have the required skill set for adopting the planned technologies?
- ☐ Have the conditions of the infrastructure been assessed?
- ☐ Have the availability, capacity size and costs of external services needed to run the planned business been assessed?

2.9 MODULE 7: ASSESSMENT OF BUSINESS ENVIRONMENT AND LEGAL ISSUES

It is important for a business plan to convey some understanding of the operating environment: what regulations, taxation, trade restrictions, prevalence of illegal activities, or other incentives/disincentives does the business face? Institutional and legal issues that the planned business might face need to be clear. Compliance with the law may influence the selection of, and the arrangements with, contractors and suppliers. It may also involve costs. Some of the key institutional and legal aspects to be addressed are listed in Table 15.

Table 15. Key institutional and legal issues

Institutional and legal aspects
Regulations (permits and licences, certifications, e.g. for harvesting and transport)
Taxation (paying attention to the different types and level of taxes, e.g. income taxes, labour taxes, trade taxes, etc.)
Import/export procedures and certifications and/or presence of trade restrictions
Tenure-related issues
Presence of subsidies and other government incentives to business

Depending on whether or not the business developer is the landowner, the most common system for tracing wood and non-wood forest products (NWFPs) is based on the cadastral parcel, within which the producer has real rights. If the producer is not the landowner, then the legal and fiscal requirements set by local, regional and national legislation must be ensured for each of the stakeholders in the business supply chain.

Given the importance of an **appropriate institutional, political and economic setting** for the success of a business, developers may benefit from reviewing existing reports on **the overall business environment**, i.e. the **governance and macro-economic factors** that affect development (e.g. economic and political stability, national security,[16] rule of law, regulatory quality, clarity and stability of taxation, corruption rate, etc.).

Specific information can be found in national public institutions or international agency statistics, or by using existing tools, as made available by international statistics agencies, for example:

- **World Bank International Finance Corporation**, Doing Business: https://www.doingbusiness.org/
- **World Bank**, Enabling the Business of Agriculture (country profiles): https://eba.worldbank.org/
- **World Economic Forum**, Global Competitiveness Report: http://www3.weforum.org/docs/WEF_TheGlobalCompetitivenessReport2019.pdf
- **World Bank**, Worldwide Governance Indicators: https://info.worldbank.org/governance/wgi/

These reports can provide hints on which environmental factors could most seriously affect the planned business and thus need attentive monitoring.

[16] In developing countries, this can be a significant operational risk as social unrest in the form of demonstrations or terrorist organizations can impact business in several ways.

EXAMPLES: Legal and policy framework for cotton stalks in Zambia

An interesting approach, which can help to strengthen a business plan, is to provide a reference to the supportive national policy framework. This has been done in Zambia for the cotton stalks and other biomass-based pellet and briquettes business plan. The business profile shows that there are at least three strategic policy tools that support the proposed business idea (see UNCTAD 2019):

- Zambia's Seventh National Development Plan (7NDP 2017–21) aims to create a diversified and resilient national economy for sustained growth and socio-economic transformation. Processing cotton stalks and other biomass into cleaner and more efficient cooking and heating fuel is in line with the 7NDP 2017–21 goals and objectives. Through increased investments in value addition and industrialization of cotton by-products, the proposed processing of cotton stalks into pellets and briquettes is expected to give rise to improvements and positive impacts on employment and wealth creation.
- The Second National Agriculture Policy (NAP) is another key national development policy that seeks to develop an efficient, competitive and sustainable agricultural sector. Improved cotton-stalk processing is also in line with the NAP's prime objective of increased employment opportunities and incomes.
- The National Industrial Policy 2018 (NIP) identifies cotton as one of the eight manufacturing subsectors to prioritize.

More generally, the business profile also shows that Zambia has an adequate body of laws to facilitate and nurture the proposed investment. Primary legal frameworks include the Zambia Development Agency Act, which facilitates SME development, investment promotion and trade; the Citizens Economic Empowerment Act of 2006; the Business Regulatory Act of 2014; the Compulsory Standards Act of 2017; the National Technical Regulations Act of 2017; and the Patents Act of 2016.

USEFUL REFERENCES

- **Castrén, T., Katila, M. & Lehtonen, P.** 2014. *Business climate for forest investments: a survey*. Washington, DC, World Bank Program on Forests. (also available at https://www.cbd.int/financial/doc/wb-busclimateforst2014.pdf).
- **FAO.** undated. *Creating an enabling environment for responsible investment in agriculture and food systems*. E-learning course [online]. Rome. http://elearning.fao.org/course/view.php?id=455
- **FAO & WHO.** *Codex Alimentarius. International Food Standards.*[17] Rome, FAO, and World Health Organization. (also available at www.fao.org/fao-who-codexalimentarius/en).
- **World Bank.** 2009. Clusters for competitiveness – a practical guide & policy implications for developing cluster initiatives. Washington, DC. (also available at http://www.fao.org/sustainable-food-value-chains/library/details/en/c/267097/).

MODULE 7 CHECKLIST

- ☐ Are sufficient indications provided on the overall business environment (e.g. regulations, requirements, restrictions, incentives)?
- ☐ Have the norms that regulate the business been identified and reviewed?
- ☐ Have the specific factors influencing the sector and business been assessed?

[17] The *Codex Alimentarius* was established in 1963 to develop harmonized international food standards, which protect consumer health and promote fair practices in food trade.

2.10 MODULE 8: FINANCIAL ANALYSIS

The heart of a business plan is a **financial model** that assesses the financial sustainability of the business. This type of analysis quantifies whether the planned business is financially viable (i.e. answering the question of how bills are paid) and profitable (i.e. answering the question of how much net income is made over time).

As a result, the business plan has to provide an estimate of cash flows with clearly evidenced underlying assumptions such as product prices, volumes, costs and risks over time. The anticipated costs have to be clearly indicated, i.e. operational costs, capital expenditures, etc. An investor should always compare the costs with industry benchmarks, when available.[18]

If the business developer has no experience in financial analysis, seeking technical assistance from experienced providers is recommended. A poorly done financial analysis can lead to business failure.

For existing businesses, a financial analysis will rely on accounting and management records such as balance sheets and financial reports that help assess their financial sustainability. For existing businesses, balance sheets and financial reporting are important and among the first things a bank looks at when evaluating a loan request. It is therefore essential, once a business is established, that it carries out proper and transparent financial management practices. Further guidance on financial statements and on how to set up a financial management system can be found in publications such as *Financial Intelligence* by Berman and Knight (2013) or websites like www.inc.com. This module covers the main elements of a financial analysis process (i.e. cash flow, financial indicators, sensitivity analysis).

The main steps in a financial analysis include:

1. collecting data on revenues and costs;
2. developing cash-flow tables;
3. computing financial indicators; and
4. running a sensitivity analysis.

These are briefly described in turn. This information can be organized and computed using Excel spreadsheets (FAO can provide templates on request). Specific FAO software is also available (see FAO *RuralInvest* tool).

1. Collecting data on revenues and costs

A typical financial plan will have monthly or annual revenues and costs forecast for a number of years, depending on the nature of the business and the investor request. For forest-based businesses, this is likely to reach even 30 or 50 years. For example, it

[18] Benchmarking is the practice of comparing business processes and performance metrics to industry bests and best practices from regional competitors. Dimensions typically measured are quality, time and cost. Common metrics in forestry include mean annual increment (MAI), the cost of a product at the point of sale (e.g. stumpage price, farm gate price, mill price, etc.), recovery rates (e.g. for processing plants), the cost of inputs (e.g. skilled or unskilled labour, electricity, etc.), and productivity (e.g. costs to deliver a unit of product).

AVAILABLE TOOL: FAO *RuralInvest* software for financial calculations

The *RuralInvest* software, developed by the FAO Investment Centre, automates many financial calculations needed to analyse project proposals. It considers all elements, allows for comparison of alternatives and can also be used to monitor and evaluate proposals. Major outputs generated by *RuralInvest* include annual cash flow; internal rate of return (IRR); net present value (NPV); costs, income and net income; and number of direct and indirect beneficiaries. The demonstration software and guidelines are available at: http://www.fao.org/in-action/rural-invest/toolkit/en/

is not uncommon for businesses that emphasize sustainable wood production to look at returns and impacts that occur in 30 years.

The first step is to collect data on: (1) **revenues**; (2) **costs** or **expenditures**; and (3) **other input data** (e.g. tax regime[19]).

Revenues. Table 16 provides a template for organizing the data needed to estimate revenues. The input information can be based on past results (if the business is already operating), or market studies.

Table 16. Revenues data template

Revenues				
Product example	Sale unit (e.g. tree, log, m^3, tonne).	Unit price	No. of units forecasted to be sold annually	Annual revenue
	a	*b*	*c*	*d = a x b x c*
Principal product				
By-product				
…				

Products are sold at different steps of the value chain. For example, trees can be bought or sold "on the stump", at the farm gate, collection yard, processing unit, or at market centres by wholesalers or retailers. In estimating revenues, it is therefore important to specify the price to be paid given certain **product characteristics** (e.g. species, dimensions, grade/quality), **how the product is sold** (e.g. "on the stump", roundwood, sawnwood) as well as the **unit of sale** (e.g. tree, log, m^3, tonne). Revenues can be earned not only from the sale of products but also from the provision of services. In this case, revenues should specify the basis for the revenue collection (for example, service fees could be charged on the basis of area, volume, value, etc.).

Costs or expenditures are categorized as operating expenditures (OPEX, sometimes called working capital) and capital expenditures (CAPEX).

Operating expenditures (OPEX, often referred to as annual costs) are those costs that are required to run the operations and occur periodically throughout the year.

[19] As mentioned in module 2, formal status is important to access finance as investors are unlikely to fund an informal entity.

There are two types of operating costs:[20]

- **variable costs**[21], which are directly related to the scale of operations (e.g. costs of raw materials, consumables, labour, transport, energy, etc.). They are normally expressed as costs per unit of production;
- **fixed costs**[22], which do not depend on the scale of operations (e.g. management costs, salaries, rent, maintenance, etc.).

It is important to **identify all costs that might occur**, break them down into categories and, if possible, validate them with technicians or specialists. Tables 17 and 18 provide templates that can be helpful in organizing variable and fixed costs.

Table 17. Variable costs (per unit of production) data template

Inputs / Consumables / Materials	Unit of measurement	No. of units per year	Cost per unit	Transport cost	Annual cost
	a	*b*	*c*	*d*	*e = b x (c+d)*
				Sub-total (materials)	
Contract labour (not included in payroll)	**No. of persons**	**Work period (days, months)**	**No. of periods per year**	**Cost per period**	**Annual cost**
	f	*g*	*h*	*i*	*j = f x h x i*
				Sub-totals (contract labour)	
				Total variable costs	*Sum of sub-totals*

Variable costs will be organized around key activities (e.g. felling, skidding, loading, unloading, etc., in the case of tree harvesting) and be reported referring to these activities (e.g. cost of felling, in USD/m³) when reliable activity-level cost estimates are available.

If an activity is subcontracted (e.g., a third party is hired to transport the products) the cost of their service can be inserted on the line item associated with that activity (see TGAN example below).

[20] Companies aim to minimize fixed costs so that when production volumes decrease, costs also decrease. This is why some business functions are outsourced.

[21] In FAO's RuralInvest software, variable costs are also referred to as production costs.

[22] In FAO's RuralInvest software, fixed costs are referred to as general or recurrent costs.

EXAMPLE: Tree Growers Association of Nyandarua (TGAN), Kenya

The Tree Growers Association of Nyandarua (TGAN) is exploring the development of a business based on the establishment of a timber trade cooperative that would allow individual growers to aggregate their production and collectively sell their timber. Tree growers will join the cooperative gradually over time until a total area of 3 600 ha is reached by 2034. They initially plan to hire harvesting and transport services from third parties. The information they collect allows them to estimate that the cost of harvesting, skidding, loading and unloading will be in the range of USD 10/m^3. The cost of transport to the aggregation yard, assuming an average distance of 20 km, will be USD 4/m^3.

Fixed costs do not depend on production levels and typically include payroll costs (e.g. management and administration costs) or other non-payroll costs such as rent or marketing. A template to account for fixed costs is provided in Table 18.

Table 18. Fixed costs data template

Payroll costs	No. of persons	Work period (days, months)	No. of periods per year	Cost per period	Annual cost
	a	*b*	*c*	*d*	*e = a x c x d*
Employee 1					
Employee 2					
Employee 3, etc.					
Sub-total (payroll costs)					
Non-payroll costs (examples)					**Annual cost**
Equipment rentals and supplies					
Facilities rentals					
Utilities					
Maintenance					
Insurance					
Marketing/advertising					
Legal and professional services					
Fees (e.g. registration, licences, permits, contractual payments to communities for leaseholds)					
Other (e.g. trainings)					
Sub-total (non-payroll costs)					
Total fixed costs					Sum of sub-totals

Capital expenditures[23] (CAPEX) refer to all one-off costs incurred to acquire assets (e.g. purchase of machinery or land). Table 19 provides a template to organize the data on capital expenditures to be included in the financial analysis.

Table 19. Capital expenditures data template (examples)

Investment item example	Investment cost	Useful life (years)	Salvage value	Annual reserve
	a	*b*	*c*	*(a–c)/b*
Nursery				
Irrigation system				
Roads and/or other infrastructure				
Land for industrial site				
Storage units				
Processing equipment, sawmill machinery				
Kiln dryers				
Transport vehicles				
Chipper				
Project development fees				
…				

EXAMPLE: Hypothetical investments needed for farmers to aggregate and organize their supply

Table 20 reports a hypothetical example of investments needed by the Tree Growers Association of Nyandarua (TGAN) to operationalize the establishment of a timber trade cooperative that would allow individual growers to aggregate their production and collectively sell their timber.

Table 20. Hypothetical example of capital expenditures

Investment item	Cost	Useful life	Salvage value	Annual reserve
Harvesting equipment	2 500	5	-	500
Land and buildings	10 000	20	-	500
Sale plan preparation	2 000	10	-	200
Total	14 500		-	1 200

[23] In FAO's RuralInvest software, capital expenditures are called investment costs.

2. Developing cash-flow tables

The **cash-flow table** is developed prior to the calculation of financial indicators. The table includes the revenues (cash inflows) and expenditures (cash outflows) produced by each activity over time, including only those transactions which lead directly to a change in cash. Table 21 provides a template for a simple cash-flow analysis.

Table 21. Cash-flow template

				Year					
				0	1	2	3	…	n
Revenues	…								
	…								
	…								
	Total revenues		*a*						
OPEX	Variable costs	…							
		…							
		Total variable costs							
	Fixed costs	…							
		…							
		Total fixed costs							
	Total operating costs		*b*						
CAPEX									
	Total capital expenditures		*c*						
Earnings before interest, taxes, depreciation and amortization (EBITDA)[24]			*a-b-c*						

A basic cash-flow table is developed at current prices and not considering inflation. The cash-flow table is useful to determine if the annual revenues are sufficient to cover annual costs (can bills be paid?), to assess whether income (net of operating costs) is sufficient to replace investments at the end of their useful life, and to estimate how many years of business operation will be needed to pay back the capital expenditures.

Some businesses may require a loan or equity in order to cover their capital expenditures. The cash-flow table is generally sufficient for the business to approach a financial institution. The financing institution, after reviewing the cash flow table and determining the financial viability of the business, will work together with the project developer to prepare a financing plan.

It is advisable to calculate the financing costs (loan repayments in the form of principal and interest) of the potential loan. Subtracting the financing costs (and eventual depreciation and amortization costs) from the EBITDA allows the business to estimate its cash flow (profit before tax). Subtracting taxes (e.g. value added tax, corporate income tax, sales taxes, etc.) from this cash flow generates profits after tax.

[24] Also called operating profit or cash flow before financing and taxes (see PFP 2018).

EXAMPLE: Cotton stalks and other biomass-based pellets and briquettes in Zambia

The business will use cotton stalks and other agroforestry waste/biomass as feedstock for producing pellets and briquettes. In the scenario of an investment in an 8 tonne-per-day (TPD) briquetting plant, the study assumes that 40 percent of the project costs would be in the form of equity (USD 45 475) while debt will make up for the remaining 60%. Table 22 below summarizes the revenues, operating costs and financing costs of a proposed briquetting plant which can be used to compute the cash flow (UNCTAD, 2019).

Table 22. Cash flow for a briquetting plant in Zambia

Year	1	2	3	4	5	6
Revenue (USD)						
Sales	168,000.00	212,419.20	268,585.84	339,596.14	429,385.36	468,030.04
Other income						
Total Revenues	**168,000.00**	**212,419.20**	**268,585.84**	**339,596.14**	**429,385.36**	**468,030.04**
Operating Costs						
Raw Materials	55,104.00	69,673.50	68,095.17	111,387.53	140,838.40	153,513.85
Electricity	9,643.20	12,192.86	14,416.65	19,492.82	24,646.72	26,864.92
Wages and Salaries	8,265.60	10,451.02	13,214.28	16,708.13	21,125.72	23,027.08
Marketing & Selling costs	27,552.00	34,836.75	44,047.59	55,693.77	70,419.20	76,756.93
Repairs and Maintenance	13,776.00	17,418.37	22,023.79	27,846.88	35,209.60	38,378.46
Packaging	1,377.00	1,741.84	2,202.38	2,784.69	3,520.96	3,837.85
General Expenses	22,041.60	27,859.40	35,238.07	44,555.01	56,335.36	31,405.54
Total Operating Expenses	137,760.00	174,183.74	220,237.93	278,468.83	352,095.99	383,784.63
Earnings Before Interest and Tax (EBIT)	**30,240.00**	**38,235.46**	**48,344.91**	**61,127.30**	**77,289.36**	**84,245.41**
Debt Service						
Interest	7,503.38	6,555.12	5,502.57	4,334.23	3,037.37	1,597.86
Principal	8,620.46	9,568.71	10,621.27	11,789.61	13,086.47	14,525.98
Total Debt Service	**16,123.84**	**16,123.84**	**16,123.84**	**16,123.84**	**16,123.84**	**16,123.84**
Cashflow Available to Equity (Surplus/Deficit)	**14,116.16**	**22,111.62**	**32,221.07**	**45,003.47**	**61,165.53**	**68,121.57**

Source: **UNCTAD (2019).**

3. Computing financial indicators

Financial indicators[25] provide information on the capacity of the business to generate value. The typical financial indicators used in forestry businesses are described in Table 23 and include: net present value (NPV), internal rate of return (IRR), breakeven point, interest cover ratio, debt-service (coverage) ratio, debt-to-equity ratio, and payback period (PBP). Formulas can be found in any standard financial analysis textbook or directly in the Excel

[25] These are also referred to as financial ratios and can be broken down into four main categories: (1) profitability or return on investment ratios; (2) liquidity ratios; (3) leverage ratios; and (4) operating or efficiency ratios. https://www.inc.com/encyclopedia/financial-ratios.html

spreadsheet. The suitability of one indicator in comparison with another one depends on the characteristics of the investments and on the investor's goals. The NPV and the IRR are generally considered the most intuitive methods for evaluating profitability and ranking alternative investments.

One of the essential elements to be considered in the computation of most financial indicators is the **discount rate.** The discount rate represents the opportunity cost of capital[26] and converts revenues and costs that occur at different times in present value (discounted) terms. In present value terms, revenue and costs that occur in different years can then be compared.

Table 23. Financial indicators

Indicator	Description	Interpretation
Net present value (NPV)	NPV is the difference between the present value of cash inflows and the present value of cash outflows over a period of time. NPV is used to quantify the expected profitability of an investment or project.	$NPV = \sum_{n=0}^{N} \frac{R_n - C_n}{(1+i)^n}$ NPV has to be >0 to be profitable.
Internal rate of return (IRR)	The internal rate of return is the discount rate that makes the net present value of all cash flows equal to zero. IRR calculations rely on the same formula as NPV. IRR is used to estimate the profitability of potential investments.	$IRR = i: \sum_{n=0}^{N} \frac{C_n}{(1+i)^n} = \sum_{n=0}^{N} \frac{R_n}{(1+i)^n}$ As a decision rule, the higher the IRR, the more profitable an investment is in financial terms. IRR should be above the opportunity cost of capital (e.g. interest paid to service a loan). Being an indicator of relative profitability, it can be used to rank multiple investments on a relatively equal basis.
Breakeven point	The breakeven point is the production level at which total revenues for a product equal total expenses.	Businesses will seek ways to lower their breakeven point.
Payback period	The payback period refers to the amount of time it takes to recover the cost of an investment. Simply put, the payback period is the length of time an investment takes to reach a breakeven point.	The shortest payback period of an investment before the cost of the investment can be recovered.
Interest cover ratio (ICR)	The ICR is used to determine how easily the project can pay interest on the outstanding debt. It is obtained by dividing operating profit (i.e. EBITDA) by the interest expense for the same period	An ICR of 1.5 or lower is regarded as risky.
Debt-service coverage ratio (DSCR)	DSCR assesses the project's ability to pay its debt obligations. It is calculated by dividing operating profit (i.e. EBITDA) by the project's total debt repayments including interest and principal.	DSCR has to be >1 to be profitable. Most financiers require a DSCR of 1.5 or higher.

Sources: adapted from Cubbage (2013), UNCTAD (2019), and Investopedia (https://www.investopedia.com/).

[26] The discount rate is based on the assumption that money today is worth more than the same amount in the future (e.g. because money received today can be deposited at the bank and generate interest).

EXAMPLE: Cotton stalks and other biomass-based pellets and briquettes in Zambia (continued)

Using the cash flow of the Zambia example above (cotton stalks and other agroforestry waste/biomass to produce pellets and briquettes), one can compute debt servicing indicators such as ICR and the DSCR as below.

Year	1	2	3	4	5	6
Interest Cover Ratio	4.03	5.83	8.79	14.10	25.45	52.72
Debt Service Cover Ratio	1.88	2.37	3.00	3.79	4.79	5.22

Similarly, one can calculate that the project has a payback period of 4 years. This is the length of time that is required for the project to recover its initial investment. Under the assumption that equity costs occur on year zero (the year before the project begins to generate revenues), the example generates an NPV (discounted cash flow) of USD 113 047 and an IRR of 56.1%.

Source: **Adapted from UNCTAD (2019).**

4. Running a sensitivity analysis

Risks and uncertainties associated with financial analysis can also be addressed through a **sensitivity analysis** that checks how the financial indicators vary when variables change. This consists of performing several financial analyses with differing underlying assumptions, **answering the question "what if"**. For example: "*what if the labour cost increases by 20 percent?*"; "*what if sawn timber prices fall by 10 percent next year?*"; "*what if not all tree growers join the cooperative in the first year?*"; or "*what if the government introduces/removes subsidies for reforestation activities?*" and so on. Many of the parameters used in the financial analysis are estimated or based on assumptions and thus not known with certainty. Therefore, running a sensitivity analysis [27] is **helpful to test the financial model's robustness and resilience against different scenarios and hypotheses**, and identify those variables or aspects that need close monitoring. Obviously, it is useful to link the sensitivity analysis to the outcomes of the risk assessment (see Module 10) which point to the most probable and severe risks. If the predicted risks materialize, the sensitivity analysis quantifies the financial implications.

BOX 4: The with/without project approach

A useful approach, in particular for FFPOs which have limited resources and need to commonly agree whether to invest in a business plan or not, is the adoption of a **with/without project approach**. This approach consists of running a "business as usual" (BAU) scenario to first determine how the situation would evolve if the business plan is not implemented. The BAU situation is then compared with the proposed business plan option, assessing the incremental benefits (or costs) that would be generated. In other words, this approach effectively illustrates the value added of the business plan for the stakeholders. It should be mentioned that the with/without project approach is not the same as a before/after project analysis, because it is not just about comparing changes between two points in time.

[27] Probabilistic analysis (i.e. stochastic models using Monte Carlo/random sampling simulations) can be also be done to enhance the quality of sensitivity analysis. Microsoft Excel and specific tools (e.g. Crystal Ball, @RISK, etc.) can help the business planner to make this type of more elaborate sensitivity analysis.

USEFUL REFERENCES

- **Cubbage, F., Davis, R., Frey, G. & Behr, D.C.** 2013. *Financial and economic evaluation guidelines for community forestry projects in Latin America.* Program on Forests (PROFOR) and World Bank, Latin America and the Caribbean region. (also available at http://documents.worldbank.org/curated/en/125651468045551850/pdf/807810WP0ENGLI00Box037982000PUBLIC0.pdf).
- **FAO.** undated. *RuralInvest toolkit*. Module 3, "Detailed project formulation and analysis" [online]. Rome. http://www.fao.org/in-action/rural-invest/toolkit/en/
- **IFAD.** 2015. *Guidelines on economic and financial analysis.* 3 vols. Rome, International Fund for Agricultural Development. (also available at https://www.ifad.org/en/document-detail/asset/39761833).
- **PFP**. 2018. *Investment opportunities in the Tanzanian forest industry and bioenergy sectors. Cluster analysis*. Helsinki, Finland. Private Forestry Programme. (also available at http://www.privateforestry.or.tz/uploads/PFP_Investment_Opportunities_Final.pdf).
- **PwC.** undated. *Introduction to financial modelling.* [online]. Singapore, PricewaterhouseCoopers. https://www.pwc.com/sg/en/academy/academy-in-house-programme/intro-financial-modelling.html
- **PwC & WBCSD.** 2010. *Sustainable forest finance toolkit*. London, PricewaterhouseCoopers LLP, and Geneva, Switzerland, World Business Council for Sustainable Development. (also available at https://www.pwc.co.uk/assets/pdf/forest-finance-toolkit.pdf).

MODULE 8 CHECKLIST

- ☐ Have the revenues been estimated based on a sound approach?
- ☐ Have all the expenditures been identified, classified and validated?
- ☐ Have all the underlying assumptions on revenues and costs been assessed?
- ☐ Have the cash-flow tables been developed, and the relevant financial indicators computed?
- ☐ Have the robustness and resilience of the business financial model been tested by running relevant sensitivity analysis?

2.11 MODULE 9: COMPLIANCE WITH ENVIRONMENTAL, SOCIAL AND GOVERNANCE CRITERIA

A statement of the **environmental, social and governance impacts**, often referred to as ESG, has become a **crucial part of business plans**, on the one hand for judging all-round sustainability and, on the other hand, as part of the business strategy and risk management. The overall objective of an ESG policy is to identify, evaluate, prevent and/or manage the environmental and social risks and impacts of a project.

When companies assess and report their ESG impacts (e.g. as part of sustainability reporting) they often refer to the Sustainable Development Goals framework. Common indicators are:

- increased area (hectares) of sustainably managed forest land (relating to SDG indicator 15.2.1);
- increased area (hectares) managed for conservation purposes (relating to SDG indicator 15.2.1);
- increased area (hectares) of afforestation or reforestation (relating to SDG indicator 15.1.1 and 15.2.1);
- carbon (tCO_2e) stored in forest vegetation and sequestered (SDG 13.2.2);
- sustainable timber production (m^3) contributing to the sustainable management and efficient use of natural resources (SDG 12.2), reduction of materials footprint (SDG 12.2.1), and storing carbon permanently (SDG 13.2.2);
- decent jobs created (SDG 8.8).

Aspects such as tenure, governance, benefit-sharing arrangements and environmental considerations are also part of the risk assessment (Module 10). In practice, the business developer could do one assessment with a framework that covers all ESG and risk issues. The key here is the measurement, where possible, of anticipated impacts on the environment (e.g. increase in biodiversity, CO_2 stocks), social aspects (e.g. local job income and creation, social infrastructure), and improved governance (e.g. agreement procedures, stakeholder consultations, etc.).

A practical first step is to **look at the national legislation, norms, and standards of potential investors (e.g. fund, bank)**. In fact, the main objective of the investor's ESG due diligence is usually to verify the social and environmental sustainability of a business plan and its performance against explicit sustainability criteria and/or good practices. Large investors may have their own standards, while others may adopt globally recognized ESG frameworks or guidelines (see Box 5).

ESG frameworks commonly include the following features:[28]

- A policy to clearly exclude certain activities such as child labour, deforestation, use of prohibited chemicals, forced displacement, etc.

[28] For larger projects, investors and banks will require a government-approved environmental and social impact assessment (ESIA) and accompanying government-approved ESMP, rather than a single ESG action plan. Many governments require an environmental and social management and monitoring plan (ESMMP) and environmental permit. So an ESMMP is typically also required by financiers and government regulators.

BOX 5: Globally recognized ESG frameworks and guidelines

- **World Bank International Finance Corporation (IFC) Performance Standards**, which remain the dominating framework at global level. IFC requires its clients to apply the performance standards to manage environmental and social risks and impacts so that development opportunities are enhanced. Some organizations (e.g. Dasos Capital) have adapted standards similar to those of IFC. https://www.ifc.org/wps/wcm/connect/Topics_Ext_Content/IFC_External_Corporate_Site/Sustainability-At-IFC/Policies-Standards/Performance-Standards
- **European Investment Bank Statement on Environmental and Social Principles and Standards**, which provides standards across ten thematic areas addressing the protection of the environment and human well-being. http://www.eib.org/attachments/strategies/environmental_and_social_overview_en.pdf
- **FAO Responsible Investment in Agriculture and Food Systems**, known as RAI, a set of ten principles that applies to all types and sizes of agricultural investment including fisheries, forests and livestock. The principles are globally applicable and include actions to address a range of environmental, social and economic issues at all stages of the value chains. http://www.fao.org/cfs/home/activities/rai/en/
- **FAO Environmental and Social Management Guidelines**, which have been developed to facilitate the early and systematic identification and assessment of environmental and social risks and the integration of the management of these risks into the project cycle. http://www.fao.org/3/a-i4413e.pdf

References to additional standards, tools and guidelines are provided in the useful references at the end of this module.

- The promotion of sustainability and resilience, and hence the reduction of risks and vulnerabilities associated with natural and human-made hazards, climate change, violence, conflict, political and social instability or economic volatility. Compliance with the ESG policy, requirements and standards adopted by the investor can be summarized in an ESG action plan.
- Selection of specific indicators that can help the business (and the investor) to ensure that the investment is "responsible" and results in positive impacts. Hence, the plan should include a simple monitoring and evaluation (M&E) framework for tracking the progress of these indicators.

Business plan developers may also consult guidelines about specific criteria of inclusiveness such as gender, youth, or other categories.

To demonstrate compliance with the ESG policy, requirements and standards of the investor, the plan can include the indicators that will be monitored and actions to ensure that progress on those indicators will be made. If information on the investor's criteria is not available, a business plan can still mention intended ESG impacts. This example is from the Tree Growers Association of Nyandarua (Kenya).

EXAMPLE: ESG indicators at the Tree Growers Association of Nyandarua (Kenya)

Table 24 identifies the most relevant ESG issues, the possible key performance indicators (KPI), and the monitoring/verification mechanisms.

Table 24. Example of simple ESG indicators

Issue	KPI (units)	Verification mechanism
Climate change	Carbon sequestered in newly planted trees on-farm (in annual tCO_2e by 2030)	Monitoring and carbon stocks verification reports (e.g. using EX-ACT; see tools listed in useful references)
Water use and availability	Hectares of riparian zones planted with trees and maintained	Progress reports, GIS maps, photos
Biodiversity and ecosystems	Hectares of farmland covered by native species Hectares of forest land under conservation Target number of assorted species trees to plant on farm between 2021 and 2030	Ministry of Agriculture and Kenya Forest Service reports, resource maps
	Hectares of land planted with other perennial crops Hectares of farmland rehabilitated from soil erosion Hectares of deforestation avoided	Ministry of Agriculture reports, resource maps
Livelihoods	Number of people (gender disaggregated – men, women and youth) from the local community employed by the association/ cooperative Number of households (by size) benefiting from the trading cooperative Number of new (direct/indirect) jobs created	County integrated development plans, Kenya National Bureau of Statistics socio-economic survey reports
Governance	Land acquisition mechanisms, tenancy (freehold/lease) and user rights A well-developed and implemented benefit-sharing mechanism with stakeholders Well-developed and applicable HR and occupational health and safety policies Well-developed and applicable anti-bribery and corruption policies	Land title deeds; benefit-sharing and stakeholders' engagement policies; list of members; HR manual; policies in place

Source: Adapted from UNCTAD (2019).

USEFUL REFERENCES

- **Brotto, L., Pettenella, D., Cerutti, P. & Pirard, R.** 2016. *Planted forests in emerging economies: best practices for sustainable and responsible investments*. Occasional Paper 151. Bogor, Indonesia, Center for International Forestry Research. (also available at https://www.cifor.org/publications/pdf_files/OccPapers/OP-151.pdf).
- **Climate Bonds.** undated. Standard and Certification Scheme [online]. https://www.climatebonds.net/standard/
- **FAO.** 2020. Ex-Ante Carbon-balance Tool (EX-ACT).[29] [online]. Rome. http://www.fao.org/tc/exact/ex-act-home/en/
- **FAO.** 2014. Principles for Responsible Investment in Agriculture and Food Systems (RAI). Rome, Committee on World Food Security. also available at http://www.fao.org/cfs/home/activities/rai/en; http://www.fao.org/3/a-au866e.pdf
- **FSC.** undated. Principles [online]. Bonn, Germany, Forest Stewardship Council. https://fsc.org/en/about-us
- **PwC & WBCSD.** 2010. *Sustainable forest finance toolkit*. London, PricewaterhouseCoopers LLP, and Geneva, Switzerland, World Business Council for Sustainable Development. (also available at https://www.pwc.co.uk/assets/pdf/forest-finance-toolkit.pdf).
- **Rainforest Alliance.** 2019. *Sustainable Agriculture Standard. Applicable for smallholder farms*. New York. (also available at https://www.rainforest-alliance.org/business/wp-content/uploads/2019/06/draft-smallholder-agriculture-standard-v2.pdf).
- **The Equator Principles.** 2020. Risk management framework adopted by financial institutions. https://equator-principles.com/about/
- **UN PRI.** 2019. *An introduction to responsible investment in forestry*. London, United Nations Principles for Responsible Investment. (also available at https://www.unpri.org/download?ac=6441).

MODULE 9 CHECKLIST

- ☐ Has the business developer looked at the ESG policy, regulation or standard adopted by the potential investor?
- ☐ Does the business plan comply with the investor's ESG criteria?
- ☐ Has a sound ESG action plan been developed? Remember that it is also important to capitalize on ESG opportunities as part of the value enhancement plan.
- ☐ Are some KPI and the related monitoring/verification mechanisms allowed to give evidence of the impacts defined?

[29] Ex-Act is an appraisal system to estimate the impact of agriculture and forestry development projects, programmes and policies on the carbon-balance.

2.12 MODULE 10: RISK ASSESSMENT

A bankable business plan should demonstrate that the risks have been identified and assessed and that there are effective mitigation measures in place and people responsible for them. Systems to handle risks are vital for bankability as they can have a direct impact on the business earning logic. Not everything can be predicted, but if the right systems are in place, creditors and investors will have more confidence that the planned business is prepared to address issues that could emerge.

Risks mean all those situations or events that affect and challenge the ability of the planned business to reach its objectives. Risks can be classified in a number of ways and they can also partly overlap. A common approach is to distinguish between:

- **internal risks**, or risks that the business can somehow control, i.e. technical and operational risks, HR and management risks; and
- **external risks**, or risks deriving from factors that the planned business cannot control, i.e. legal and institutional risks, economic and market risks, environmental and climate risks, and social risks.

Table 25 summarizes a simple risk categorization.

Table 25. Risk categorization

Risks		
Internal risks	Technical and operational risks	Reliability of resource data (productive forest area, existing inventory data) Reliability of yield data Log quality Management capacity Controlling subcontractors
	HR and management risks	Management /staff turnover/commitment Capacities, competencies
External risks	Legal and institutional risks	Political risks Currency risks Controlling subcontractors Related reputational risks Corruption and legality issues Legal approvals and regulatory risks
	Economic and market risks	Price volatility Access to markets Stability of funding flows Substitution, competition Global health risks (pandemic)
	Environmental and climate risks	Forest fires Pests, insects, diseases Wind, storms, snow, floods Climate change
	Social risks	Conflicts with stakeholders Land governance risks Unclear property rights Reputational issues Human rights risks from inadequate consultation, consent

The assessment of risks is a fundamental part of the financing decision. In fact, in making investment decisions, the cost of capital investment is weighed against the benefits. Many investors expect higher returns for investments made in developing countries than in more developed countries, due to higher risk factors.

In forestry businesses, typical risk factors are those associated with insecure forest and land tenure, poor governance, over-dependence on a few buyers, fragmented information on prices, poor security, limited technical know-how and low market awareness. The planned business should consider all the key risks and have a strategy to deal with them. It is useful to: **(1) identify the risks** that the business is exposed to and categorize them according to their nature; **(2) assess the probability and severity of the risks** (e.g. high, medium, low) to allow prioritization; and **(3) choose the mitigation measures**, or how the planned business will respond to these risks. Mitigation measures, more particularly those relating to climate change, should be part of the loan agreement with the financial institutions.

A risk assessment can be summarized in a matrix which identifies the sources of risk, their probability, severity and mitigation measures. The matrix could also include a column on responsibility for mitigation action. The risk assessment matrix of the United Republic of Tanzania's Central Park Bees project is provided as an example.

EXAMPLE: Central Park Bees (Swahili Honey) risk assessment matrix

In the case of Central Park Bees (United Republic of Tanzania), an assessment matrix was used to assess risks. First, the risks were identified and assessed against the probability and severity if they materialized. Second, the risks were estimated qualitatively to low, medium and high. Finally, the business developers defined mitigation measures for the most severe risks (See Table 26).

Table 26. Central Park Bees risk assessment matrix

Source of risk	Probability (low, medium, high)	Severity (low, medium, high)	Mitigation measures
Technical and operational risks			
Infrastructure not supporting the operation	Low	High	Upgrade current road network, once major harvest operations commence.
Use of pesticides near flowering plants	Medium	Medium	Carry out regular checks on agriculture and forestry activities neighbouring flowering areas of bees.
Poor bee health	Medium	High	Ensure that beekeepers receive training in bee health checkups.

(Cont.)

HR and management risks			
Poor commitment of management	Low	High	Ensure incentives or stake in ownership for key managerial staff
Change of key staff members	Medium	Medium	Provide appropriate incentives, gradual increase in local staff.
Lack of technical capacity	Medium	High	Monitor training programme, plan further training
Insufficient supply of skilled labour	Low	Medium	Manage contractors, retain trained people with incentives.
Continuing dependence on external support	High	Medium	Strengthen training programme, independence of local management; reward local management for positive initiatives.
Economic and market risks			
Expected prices are not obtained	Medium	High	Diversify product portfolio with different qualities and search for new market channels, (this concerns premium teak and residues), sustained volumes and quality. The planned products will face stiff competition – be price setter rather than taker.
Failure to establish sustained market channels	Low	High	Aim for recognized certification of product to ensure long-term, reliable client contracts.
Failure to produce sustained volumes and quality to the market	Medium	Medium	Sustain volumes and comply with industry standards.
Environmental and climate risks			
Severe drought	Medium	High	Ensure that beekeepers are trained in moving hives around to different flowering sources.
Forest fire	Medium	High	As above.
Social risks			
Risk of vandalism	Low	High	Ensure adequate training and protective measures for hives.
Over-dependency on one source of income for producer	Low	Medium	Support producer in diversifying income source.

The example above provides a qualitative assessment of risks. Some risks can be quantified if there are existing data or benchmarks that allow probabilities to be estimated. This may be the case when sufficiently long time series are available for forest fires, wind and pest damages, rainfall patterns, historical price fluctuations, etc.). In practice, such data are often scarce in developing countries and most of the risks are expressed with qualitative measurements.

USEFUL REFERENCES

- **FAO.** undated. *Climate risk assessment and management in agriculture*. Rome. (also available at http://www.fao.org/3/i3084e/i3084e06.pdf)
- **FAO.** undated. Investment Learning Platform (ILP). [online] Rome. http://www.fao.org/investment-learning-platform/themes-and-tasks/risk-analysis/en/
- **FAO & UNECE.** 2018. Section 3.2: Risk management in a changing climate. In: *Forests and Water – valuation and payments for forest ecosystem services*, pp. 18–20. Rome, FAO, and Geneva, Switzerland, United Nations Economic Commission for Europe. (also available at https://www.unece.org/fileadmin/DAM/timber/publications/sp-44-forests-water-web.pdf).
- **Bolin, A. & Macqueen, D. eds**. 2016. *Securing the future: Managing risk and building resilience within locally controlled forest businesses*. London, International Institute for Environment and Development. (also available at https://pubs.iied.org/13587IIED/?c=forest&p=2)
- **IFC.** 2020. *Risk management*. Washington, DC, International Finance Corporation, World Bank Group. (also available at https://www.ifc.org/wps/wcm/connect/Industry_EXT_Content/IFC_External_Corporate_Site/Industries/Financial+Markets/Risk+Management/).

MODULE 10 CHECKLIST

- ☐ Have the main internal and external sources of risks been identified and categorized?
- ☐ Have the probability and severity of risks been assessed?
- ☐ Does the business plan provide sound mitigation measures to address the risks?

3. Aligning the plan with investor's criteria

To successfully access finance, a **business plan must also align with the investor's interests and criteria**. Understanding these criteria, including sustainability, is important. This chapter briefly reviews possible sources of finance and their instruments, and some of the criteria for accessing them.

There are various sources of finance, for example own capital, government institutions and agencies, commercial banks, development banks, financial investors, etc. The three major financial instruments include loans, equity and grants. These may also be offered as various blends. Given that their availability varies by country and region,[30] a detailed mapping of the sources at country level should be carried out prior to capacity-building. Typical categories are summarized in Table 27.

Table 27. Financial sources, instruments and their criteria[31]

Source	Instruments	Description	Criteria/applicability to forestry/industry
Own capital	-	Having your own capital is the most important source of financing investments. The lack of capital is the main reason that small tree growers and most small enterprises look for other sources of finance.	Without capital or some other form of collateral, it is almost impossible to receive any finance other than grants or subsidies.
Government, development agencies, NGOs	**Grants and subsidies**	Grants and a variety of subsidies are conventionally channelled through donor-financed projects. With the help of donor support, the role of the government in providing subsidies has been gradually growing. But grant financing is limited and the general aim is to shift to other instruments in the course of development.	These will still be largely needed in creating forest assets: afforestation and forest restoration.

[30] Numerous publications exist, such as Access to finance for forest and farm producer organisations (Macqueen, 2018); Agricultural value chain finance strategy and design: technical note (IFAD, 2012).

[31] Further information on types of investors and their expected returns on investments can be found at http://www.fao.org/3/a-i5174e.pdf.

(Cont.)

Source	Instruments	Description	Criteria/applicability to forestry/industry
Government, development agencies, NGOs	**Microfinance schemes**	A plethora of microfinance institutions operate in developing countries. There are many democratic, member-driven, self-help savings-and-credit cooperatives as well as village community banks. These offer grassroots lending schemes that foster the ability of participants to innovate and manage viable income-generating activities by providing entrepreneurship training and other capacity-building initiatives.	Typically, the microfinance schemes do not reach forestry as the payback periods are relatively short and more applicable to short-term crop production or other income generation.
Commercial banks	**Loans**	Commercial banks are interested in doing business as long as it makes financial sense, or, in other words, that their expected return of credit covers the expected risks. Local banks in development countries are seldom involved in forestry.	The nominal interest rates tend to be high and payback periods short. Their stake is country specific. In Uganda and the United Republic of Tanzania the payback periods are normally <1 year, maximum 5 years, and with interest rates ranging from 18% to 25%. The loans are mostly applied to finance working capital, i.e. not investments for new asset expansions or technologies.
Local development banks	**Loans**	Local development banks have evolved recently and offer loans with subsidized interest rates subject to development criteria. They vary by country, but the typical focus has seldom been in forestry.	The development banks in Uganda and Kenya have debt instruments that could match forestry and at least downstream processing.
International development banks	**Loans and equity (and other instruments)**	A number of development finance institutions (DFIs) aim at financing the private sector in developing countries. For example, the World Bank Group's International Finance Corporation offers investment, advisory and asset management services to encourage private-sector development in developing countries. The African Development Bank, too, has a division that focuses on the private sector. The European Investment Bank operates mainly in Europe but also has a significant stake in the African private sector. In addition to international development banks, there are a number of national development finance institutions, such as British CDC, Dutch FMO, German DEG, French PROPARCO, Finnish Finnfund and Norwegian Norfund.	The details of the conditions are confidential and negotiated case by case. Companies have to be well established in order to receive DFI support. They also have to comply with international standards when it comes to financial, as well as ESG, reporting. Investments are large, USD 5–50 million or even more. DFIs require a company to contribute a significant amount of its own capital and often prefer to have other financing partners, such as other DFIs.

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Source	Instruments	Description	Criteria/applicability to forestry/industry
Government/ international organizations	**Guarantees**	Underwriting funds to provide security (by risk pooling) for firms that are unable to obtain financing otherwise. In their most usual form, guarantees are associated with a loan or other financial obligation to be contracted by a borrower with a lender; they may be granted as individual guarantees or within a guarantee scheme (to increase lending to risky projects). They may take the form of guarantees on bank loans, microcredit or equity, and may involve a fee or higher interest rate for the borrower. As an unfunded product this requires fewer initial resources than a funded product, such as a loan, which brings management costs down. However, a guarantee does not provide liquidity (rather, it represents a risk reserve), its revolving effect is slow (money set aside cannot be reused until repayment is ensured) and the administration complexity can be cumbersome. The European External Investment Plan (EIP), for example, offers guarantees for blended finance.	Guarantees are applied typically by funds of financial intermediaries which finance, e.g. companies or producer organizations in developing countries.
Private individuals	**Donation-based crowdfunding**	Donation-based crowdfunding is a form of alternative finance. It could be an effective approach for those business developers who need to raise money for an environmentally and/or socially impactful idea or project. Typically, this is done through a moderating organization (a platform) that brings together whoever proposes the idea or project to be funded and a community of private individuals who can support it. In most of these platforms, private individuals can donate small amounts of money based on altruistic reasoning, without economic reward for donating.	There are several web-based crowdfunding platforms for tree planting purposes. Some of the most widespread are WOWnature®, Treedom and Tree-nation. Such an instrument could be applied for example by tree growers to raise extra funds for planting and maintenance of trees.
Company finance	**Market payments**	Many agro-industry companies finance farmers as part of their supply chains. These include outgrower schemes, off-take contracts, etc. These are very location-specific and common in the forest sector.	Kenya and Uganda have outgrower schemes. In Uganda, Global Woods and New Forests have a number of smallholder outgrowers. In Kenya, Komaza partners with smallholders and some tea companies run similar schemes.

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Source	Instruments	Description	Criteria/applicability to forestry/industry
Impact investors	**Equity**	A growing number of impact investors target specific social and environmental objectives while seeking a financial return on their investments. So far, social-impact investors have come mainly from the United States of America and focused principally on social and environmental investments such as education, health care and conservation. Recently such investors have widened their scope in both geographic and thematic terms, e.g. Africa Gatsby Foundation, The Wood Foundation, Grantham Foundations, etc. The criteria vary and are context-specific.	Impact investors are already involved in Kenya and Uganda. The investors prefer large equity/loan size (such as DFIs and financial investors); otherwise the transaction costs are too high. Intermediaries such as local banks or producer organizations are needed.
Financial investors	**Equity**	Financial investors comprise pension funds, endowments, private equity, etc. In many developing countries, the stake of financial investors has grown significantly. In the last 30 years, timberland investments have emerged as a new asset class (among stocks, private equity, real estate, bonds and securities). The most common investment vehicles for the institutions are timberland investment management organizations (TIMOs) and real estate investment trusts (REITs).	The minimum investment size is large and the receiver must have a strong commercial structure with a proven track record. The institutions have mainly invested in assets in developed markets. However, investments in developing countries, mainly in Latin America, may already exceed USD 20 billion but still pale in comparison with the estimated total institutional timberland investable universe of USD 200 billion. In most parts of the world, their investment framework and crucial factors influencing investment attraction are large-scale foreign forest industry companies.

Each investor will have its own criteria. For example, some social impact funds may have minimum criteria such as:

- years of operation (e.g. at least three years);
- positive equity with review of debt-service coverage and debt-to-equity ratios;
- sustainable and scalable sources of revenue (e.g. >USD 200 000 per year. However, if the expected social impact is likely to be significant, this limit could be lowered to USD 100 000 per year);
- audited statements for at least one year;
- quarterly financial statements; and
- strong evidence of measurable and sustainable social impact with a focus on underserved populations.

In general, the larger the amounts needed, the stricter the minimum criteria.

USEFUL REFERENCES

- **FAO.** undated. Sustainable Forest Management (SFM) toolbox. [online] Rome. http://www.fao.org/sustainable-forest-management/toolbox/modules/forest-finance/tools/en/?page=1&ipp=10&no_cache=1&tx_dynalist_pi1[par]=YToxOntzOjE6IkwiO3M6MToiMCI7fQ==
- **FAO & UNCCD.** 2015. *Sustainable financing for forest and landscape restoration. Opportunities, challenges and the way forward*. Discussion Paper. Rome, FAO, and Bonn, Germany, Global Mechanism of United Nations Convention to Combat Desertification. (also available at http://www.fao.org/3/a-i5174e.pdf).
- **World Bank.** 2018. *The future of food. Maximizing finance for development in agricultural value chains*. Washington, DC. (also available at https://www.worldbank.org/en/topic/agriculture/publication/the-future-of-food-maximizing-finance-for-development-in-agricultural-value-chains).

4. The way forward

There are early indications that this guide is helping producer organizations to more effectively structure their business ideas and engage constructively with financing sources. Additional complementary resources are being prepared. In this respect, FAO is preparing a companion learning guide (Caldwell *et al.*, forthcoming) to help producer organizations to carry out farmer-led tree inventories so that they have adequate information on the value of their assets, are able to sell their trees for fairer prices, and receive greater returns through collective bargaining and marketing. This resource will provide technical guidance to support the development of these capacities.

Local forest finance and business learning hubs may also need to be established in those countries with the ambition to promote restoration at scale. These learning hubs can provide information, investment intelligence, technical assistance, capacity-building, mentoring, and match-making opportunities for smallholders, communities and businesses seeking guidance on how to invest in locally owned and managed forest enterprises, as well as promoting investment opportunities and products. This will help both FFPOs and finance institutions, which will find it easier to identify attractive projects. Establishment of these hubs (or strengthening existing ones) could initially be supported and coordinated by a unit in FAO to facilitate sharing of good cases, development of capacity-building and learning materials, preparation of relevant materials, and technical advice and mentoring. Several accelerator and incubation programmes for forest-based businesses already exist (see Box 6).

Box 6. Accelerator and incubation programmes for forest business ventures

Accelerators and incubators are support programmes that aim to help ventures to better define and build their initial products and services, training them to enhance and fine tune their business plans and financial models, with the aim of attracting and securing financial and human capital and thus scaling the model towards economic sustainability. While they may have similar aims, there are some fundamental differences between these programmes. **Accelerators "accelerate" the growth of an existing business**. Their support tends to be more condensed in time and will rarely run more than six months and usually between one and three months. **Incubators aim to develop a business**, may seek innovation, and therefore provide support for periods that may run from one to five years. This is also connected to the number of ventures that a programme can support. Accelerators host cohorts of up to ten nascent business ventures, while incubators tend to focus on only one or two. This makes accelerators

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and incubators competitive processes. Indeed, accelerators tend to accept early-stage (just registered/incorporated) business ventures (even as early as the prototyping or "testing" of the business service or product) until a venture has no need of accelerator programmes, as for example when it has established consistent quarterly revenues. Therefore, applying for an accelerator programme is a good option for those nascent business ventures with very innovative or experimental business ideas (which might find difficulty in raising finance through conventional channels). Incubators tend to host both early- and late-stage business ventures. This is also explained by differences in the business models of these programmes. Many incubators are often run as non-profits, while accelerators will usually offer some form of investment in exchange for either debt or equity investment, which also adds to their competitive nature. And while a very restricted number of accelerators are also non-profit, many act as for-profit investment programmes.

As Africa is an attractive impact-investment location (as less investment tends to have a greater impact), many "impact accelerators" and "innovation and incubation hubs" are becoming common across the continent. Examples of sources of information and access to networks are the incubation and acceleration platforms Venture Capital for Africa (VC4A) and F6S. These online platforms allow new and attractive opportunities to interact directly with a huge range of investors, accelerators and incubation programmes.

For forest and forest-product-based nascent business ventures, one such accelerator programme in Africa is the Land Accelerator based in Nairobi (Kenya). This is a four-month programme and curated network for entrepreneurs who restore degraded forests and farmland.

Conservation organizations such as The Nature Conservancy and Conservation International are also setting up incubation support for businesses and initiatives that advance conservation objectives.

Finally, it is important to note that the geographical location of nascent forest product and service-based business ventures does not have to limit their application to accelerator programmes offering investment for equity or debt. Many international programmes also try to attract new cohorts from all over the world, such as Echoing Green based in New York, and Good Company Ventures based in Philadelphia (United States of America).

For forest producer organizations, FAO, the International Institute for Environment and Development (IIED) and their partners also provide incubation support, including through capacity-building. Further information can be found in Forest business incubation toolkit by and for forest and farm producer organisations (Bolin *et al.*, 2018).

4.1 SUPPORT OF PUBLIC AGENCIES AND DEVELOPMENT PARTNERS

The initial pilot of this guide has identified a number of needs that should be further addressed by the development community:

- **Making data on resources and markets more accessible and available** is of crucial importance to the development of bankable business plans. Assisting producer organizations to assess their assets and markets is a role that government agencies and international organizations can support by providing statistics and outlooks on forest resources, production, consumption and prices. Producer and industry organizations can also serve their members by facilitating the collection and analysis of this type of information.
- **Value chain assessments** are essential to understand markets, market access, flow of funds, and what connects producers to markets. Missing links may be identified. It may also be the case that, in order to support small producers, investments are needed to address "bottlenecks" elsewhere in the value chain. Supporting the business of tree growing, for example, may require investments in downstream processing to ensure better and more stable prices to growers, and motivate more investments in plantations. Downstream investments create and grow markets for raw material and also enable its more efficient utilization. Such investments make sense if a sufficient supply of raw material can be guaranteed and, therefore, sufficient assets are available and supply can be organized. Such considerations can only be empirically made with a value chain assessment.
- **Dialogue with finance institutions and funds** needs to be promoted. Certain finance institutions seek investment opportunities that can deliver social and environmental returns. However, they often lack awareness of forestry businesses, how they work and the risks involved. Development partners can play a key role here in facilitating knowledge exchange among business developers, producers and financial institutions. An example of dialogues being promoted in Kenya and Uganda is presented in Box 7.
- **Project pipelines and financial intermediation** may also be required as many development finance institutions work with investment sizes that are considerably larger than the finance needed by producer organizations. Pipelines of bankable projects need to be developed and this depends on local business development capacities. Financial intermediaries may also be involved, as they play a role in making smaller amounts of finance accessible.
- **Governments and policy-makers need to favour the creation of a more favourable** policy environment for business development and investments in restoration and sustainable forestry. This is generally called financial infrastructure and includes policies on collateral definition, and collateral and credit registries. It can be improved by providing transparent information at national level and promoting local, national and regional trade.

As this guide is being finalized, the world is dealing with the economic recession triggered by the Covid-19 pandemic. The long-term implication of the Covid-19 pandemic cannot be fully predicted. However, it is clear that restoration activities can play an important role in the economic recovery, given the range of economic, social and environmental benefits they can generate. For this to happen, it will be important to link restoration to the building of productive landscapes, where possible and desirable.

BOX 7: Towards new financial instruments in Uganda and Kenya

In Kenya, The Nature Conservancy (TNC) is developing the Africa Tree Fund. The fund plans to make debt and equity investments in businesses operating in East Africa across three broad themes, and invest in: (1) businesses that interact with, support and create markets for smallholder tree growers; (2) businesses that aim to improve the sustainability of household cooking; and (3) efforts that can increase the value of standing forests. TNC, KUSCCO (Kenya Union of Savings & Credit Co-operatives Ltd) and TGAN (Tree Growers Association of Nyandarua) are working together to find a solution to finance the developed business plan.

A workshop with financial institutions was organized in December 2019 in Uganda. Two development banks (Uganda Development Bank and East African Development Bank) and three commercial banks participated in the workshop, along with tree growers and other companies. The workshop achieved its two objectives of bridging the information gap and raising awareness of the banking sector on investment opportunities in the forestry sector in Uganda; and of attaining some information on the financial instruments available (or not) to the forestry sector, particularly companies and tree growers. The Uganda Timber Growers Association plans to organize an investment promotion to introduce the business plans to a wider group of investors and finance-sector representatives.

4.2 GLOSSARY OF TECHNICAL TERMS

Assets	Resources owned by the business having a commercial value, can include: cash, stock, land, buildings, equipment, machinery, furniture, patents and trademarks, as well as money due from individuals or other businesses.
Blended finance	Strategic use of different sources and mechanisms of finance, from both public and private funds, to finance a project.
Business plan	A structured presentation of a business idea, following a generally used format and using a language familiar to potential investors.
Capital expenditure (CAPEX)	All one-off costs incurred to acquire assets (e.g. purchase of machinery or land).
Debt financing	Loans from a bank or other financial intermediary that are repaid by the borrower over time, usually with interest.
Debt to equity ratio	Debt/owners' equity indicates the relative mix of a company's investor-supplied capital. A company is generally considered safer if it has a low debt to equity ratio.
Debt to service coverage ratio	A measurement of the cash flow available to pay current debt obligations. The ratio states net operating income as a multiple of debt obligations due within one year, including interest, principal, sinking fund and lease payments.
Discount rate	The opportunity-cost of the capital, expressing the time value of money. It is used as a variable in several financial indicators in order to determine the present value of future cash flows.
Due diligence	An investigation or audit of a potential investment opportunity or use of lender's funds.
Earnings before interest, taxes, depreciation and amortization (EBITDA)	EBITDA is an indicator of a company's overall financial performance and often used to assess its ability to pay back interest or debts. Often used as an alternative to "earnings" or net income, calculated by subtracting interest, taxes, depreciation and amortization from EBITDA.
Equity financing	Partial ownership of the business by the investor through share purchase.
ESG impacts	Environmental, social and governance impacts of an investment.
Forest management unit	A well-defined and demarcated land area, predominantly covered by forests, managed on a long-term basis and having a set of clear objectives specified in a forest management plan.
Impact investing	Investments made in companies, organizations and investment vehicles with the intention to generate positive social and environmental impacts alongside a financial return. It can be considered as a subsector of SRI.
Inflation rate	The indicators identifying a change in the general price level of goods and services in an economy over a period of time.
Internal rate of return (IRR)	A metric used in capital budgeting to estimate the profitability of potential investments. The internal rate of return is a discount rate that makes the NPV of all cash flows from a particular project equal to zero.
Net present value (NPV)	A capital budgeting and investment planning indicator used to analyse the profitability of a projected investment or project.
Operating expenditure (OPEX)	Those costs that are required to run the operations after investments and that occur periodically throughout the year. They are sometimes referred to as working capital.
Sustainable and responsible investments (SRI)	SRI is a generic term covering any type of investment process that combines investors' financial objectives with their concerns about ESG issues.

4.3 ANNEXES

4.3.1. Annex 1: Examples of business opportunities that can be linked to restoration

Land condition	Land use/FLR option	Description	Examples of related business opportunities
If the land is without trees, there are two options	Planted forests and woodlots	Planting of native or introduced tree species (reforestation and afforestation).	Fuelwood, timber, building poles, NWFPs, honey, etc. Secondary processing of products.
	Forest natural regeneration	Natural regeneration of formerly forested land. Often the site is highly degraded and no longer able to fulfil its past function, e.g. agriculture. If the site is heavily degraded and no longer has seed sources, some planting will probably be required.	NWFPs. Secondary processing of products.
If the land is degraded forest	Silviculture	Enhancement of existing forests and woodlands of diminished quality and stocking, e.g. by reducing fire and grazing and by liberation thinning, enrichment planting, etc.	Timber, fuelwood, building poles, fruits, NWFPs, honey, etc. Secondary processing of products.
If the land is under permanent management	Agroforestry	Establishment and management of trees on active agricultural land (under shifting agriculture), either through planting or regeneration, to improve crop productivity, provide dry season fodder, increase soil fertility, enhance water retention, etc.	Agriculture and forest products.
	Conservation agriculture	Adoption of practices that involve minimum soil disturbance (i.e. no tillage), maintenance of a permanent soil cover, and diversification of plant species.	Agriculture products.
If the land is under intermittent management	Improved fallow	Establishment and management of trees on fallow agricultural land to improve productivity, e.g. through fire control, extending the fallow period, etc., with the knowledge and intention that eventually this land will revert back to active agriculture.	
If degraded mangrove	Mangrove restoration	Establishment or enhancement of mangroves along coastal areas and in estuaries.	
If other protective land or buffer	Watershed protection, erosion control and biodiversity conservation	Establishment and enhancement of forests on very steep sloping land, along watercourses, in areas that naturally flood and around important water bodies.	Recreation services (ecotourism).

Source: adapted from IUCN and WRI, 2014.

5. References

Abed, T. & Stephens, N.C. 2003. *Tree measurement manual for farm foresters*. 2nd edn. M. Parsons, ed. Canberra, Australia, Bureau of Rural Sciences, National Forest Inventory. (also available at http://data.daff.gov.au/mapserv/plant/report_list.phtml).

ANSI. undated. American National Standards Institute Webstore [online]. Washington, DC. http://webstore.ansi.org

ASTM International. Wood Standards. West Conshohocken, USA. (also available at http://www.astm.org/Standards/wood-standards.html).

Bolin, A. & Macqueen, D. eds. 2016. *Securing the future: Managing risk and building resilience within locally controlled forest businesses*. London, International Institute for Environment and Development. (also available at https://pubs.iied.org/13587IIED/?c=forest&p=2)

Bolin, A., Macqueen, D., Greijmans, M., Humphries, S. & Ochaeta Castellanos, J.J., eds. 2016. *Securing forest business. A risk-management toolkit for locally controlled forest businesses*. London, International Institute for Environment and Development. (also available at https://pubs.iied.org/13583IIED/).

Bolin, A., Macqueen, D., Greijmans, M., Grouwels, S., Camara, K. & Ndethiu, L., eds. 2018. *ForBInc. Forest business incubation toolkit by and for forest and farm producer organisations*. London, International Institute for Environment and Development. (also available at https://pubs.iied.org/13596IIED/).

Brotto, L., Pettenella, D., Cerutti, P. & Pirard, R. 2016. *Planted forests in emerging economies: best practices for sustainable and responsible investments*. Occasional Paper 151. Bogor, Indonesia, Center for International Forestry Research. (also available at https://www.cifor.org/publications/pdf_files/OccPapers/OP-151.pdf).

Caldwell, B. *et al.* forthcoming. *Taking stock: what we grow together counts*. Rome, FAO.

Canvas. Lean business plan templates [online] https://bmtoolbox.net/tools/lean-canvas/

Castrén, T., Katila, M. & Lehtonen, P. 2014. *Business climate for forest investments: a survey*. Washington, DC, World Bank Program on Forests. (also available at https://www.cbd.int/financial/doc/wb-busclimateforst2014.pdf).

Central Park Bees. Swahili Honey. [online] Dar es Salaam, United Republic of Tanzania. https://centralparkbees.**co.tz;** https://swahilihoney.co.tz/

Climate Bonds. undated. Standard and Certification Scheme [online]. https://www.climatebonds.net/standard/

Colombijn, F. & Morbidini, M. 2017. Pros and cons of the formation of waste-pickers' cooperatives: a comparison between Brazil and Indonesia. *Decision*, 44: 91–101. https://doi.org/10.1007/s40622-017-0149-5

Cubbage, F., Davis, R., Frey, G. & Behr, D.C. 2013. *Financial and economic evaluation guidelines for community forestry projects in Latin America.* Program on Forests (PROFOR) and World Bank, Latin America and the Caribbean region. (also available at http://documents.worldbank.org/curated/en/125651468045551850/pdf/807810WP0ENGLI00Box037982000PUBLIC0.pdf).

Dau, L.A. & Cuervo-Cazurra, A. 2014. To formalize or not to formalize: entrepreneurship and pro-market institutions. *Journal of Business Venturing*, 29(5): 668–686. https://doi.org/10.1016/j.jbusvent.2014.05.002

Echoing Green. undated. [online]. New York. https://echoinggreen.org/

EIB. 2018. *Environmental and social standards overview.* Luxembourg, European Investment Bank. (also available at http://www.eib.org/attachments/strategies/environmental_and_social_overview_en.pdf).

EIB. 2020. *Investing in nature: financing conservation and nature-based solutions*. A Practical Guide for Europe. Luxembourg, European Investment Bank. (also available at https://www.eib.org/attachments/pj/ncff-invest-nature-report-en.pdf).

ETIFOR. 2018. ECOSTAR – The Nature Accelerator [online]. Padua, Italy. https://www.ecostarhub.com/nature-accelerator/

F6S. [online] F6S.com.

FAO. undated, Investment Learning Platform (ILP) [online]. Rome. http://www.fao.org/investment-learning-platform/themes-and-tasks/risk-analysis/en/

FAO. undated. *Climate risk assessment and management in agriculture*. Rome. (also available at http://www.fao.org/3/i3084e/i3084e06.pdf).

FAO. undated. Contract Farming Resource Center (CFRC) [online]. Rome. http://www.fao.org/in-action/contract-farming/en/

FAO. undated. *Creating an enabling environment for responsible investment in agriculture and food systems*. E-learning course [online]. Rome. http://elearning.fao.org/course/view.php?id=455

FAO. undated. FAOSTAT [online]. Rome. http://www.fao.org/faostat/en/

FAO. undated. Open Foris – a set of free and open-source software tools that facilitates flexible and efficient data collection, analysis and reporting [online]. Rome. http://www.openforis.org/

FAO. undated. Open Tenure – open-source software designed by FAO to empower communities [online]. Rome. http://www.fao.org/e-agriculture/news/open-tenure-open-source-software-designed-fao-empower-communities

FAO. undated. *RuralInvest toolkit*. Module 3, "Detailed project formulation and analysis" [online]. Rome. http://www.fao.org/in-action/rural-invest/toolkit/en/

FAO. undated. Sustainable Forest Management (SFM) toolbox. [online] Rome. http://www.fao.org/sustainable-forest-management/toolbox/modules/forest-finance/tools/en/?page=1&ipp=10&no_cache=1&tx_dynalist_pi1[par]=YToxOntzOjE6IkwiO3M6MToiMCI7fQ==

FAO. 1981, reprinted 1992. *Manual of forest inventory: with special reference to mixed tropical forests.* FAO Forestry Paper No. 27. Rome. (also available at http://www.fao.org/3/ap358e/ap358e00.pdf).

FAO. 1992. *Cost control in forest harvesting and road construction*. Rome. (also available at http://www.fao.org/3/T0579E/T0579E00.htm).

FAO. 2008. *National Forest Monitoring and Assessment. Manual for integrated field data collection*. Working Paper NFMA 37/E. Rome. (also available at http://www.fao.org/forestry/14727-072b68bcfa49334202f1586889517ce24.pdf).

FAO. 2011. *Community-based tree and forest product enterprises: market analysis and development (MA&D).* Manual. Rome. (also available at http://www.fao.org/3/a-i2394e.pdf).

FAO. 2014. Principles for Responsible Investment in Agriculture and Food Systems (RAI). Rome, Committee on World Food Security. (also available at http://www.fao.org/cfs/home/activities/rai/en; http://www.fao.org/3/a-au866e.pdf).

FAO. 2015. *Environmental and social management guidelines*. Rome. (also available at http://www.fao.org/3/a-i4413e.pdf).

FAO. 2015. *Small and medium scale forest enterprises. Market analysis and development* [online]. Rome. http://www.fao.org/forestry/enterprises/25492/en/

FAO. 2016. Global Forest Resources Assessment 2015. Rome. (also available at http://www.fao.org/3/a-i4793e.pdf).

FAO. 2019. Catalyzing private finance for inclusive and sustainable forest value chains. Report of the expert meeting, 2–3 April 2019. Rome. (also available at http://www.fao.org/forestry/48858-064440fb9719c37f1b7b2a3e957b017c1.pdf).

FAO. 2019. *RuralInvest – preparing effective investment project proposals*. E-learning course, Lessons 1, 2 and 3 [online]. Rome. https://elearning.fao.org/course/view.php?id=185

FAO. 2020. Ex-Ante Carbon-balance Tool (EX-ACT). An appraisal system to estimate the impact of agriculture and forestry development projects, programmes and policies on the carbon-balance. [online]. Rome. http://www.fao.org/tc/exact/ex-act-home/en/

FAO. 2020. *Global Forest Resources Assessment (FRA 2020)*. Rome. (also available at http://www.fao.org/forest-resources-assessment/en/).

FAO, IFAD & WFP. 2015. *Achieving Zero Hunger: the critical role of investments in social protection and agriculture*. Rome, FAO, International Fund for Agricultural Development, and World Food Programme. (also available at http://www.fao.org/3/a-i4951e.pdf).

FAO & IISD. 2018. *Model Agreement for Responsible Contract Farming – with commentary*. Rome, FAO, and Winnipeg, Canada, International Institute for Sustainable Development. 68 pp. (also available at http://www.fao.org/3/ca1772en/CA1772EN.pdf).

FAO & UNCCD. 2015. *Sustainable financing for forest and landscape restoration. Opportunities, challenges and the way forward*. Discussion Paper. Rome, FAO, and Bonn, Germany, Global Mechanism of United Nations Convention to Combat Desertification. (also available at http://www.fao.org/3/a-i5174e.pdf).

FAO & UNECE. 2018. Section 3.2: Risk management in a changing climate. In: *Forests and Water – valuation and payments for forest ecosystem services*, pp. 18–20. Rome, FAO, and Geneva, Switzerland, United Nations Economic Commission for Europe. (also available at https://www.unece.org/fileadmin/DAM/timber/publications/sp-44-forests-water-web.pdf).

FAO & WHO. 1963. *Codex Alimentarius. International Food Standards*. Rome, FAO, and World Health Organization. (also available at www.fao.org/fao-who-codexalimentarius/en).

Fledge. undated. [online]. https://www.ecostarhub.com/nature-accelerator/

FSC. undated. Principles [online]. Bonn, Germany, Forest Stewardship Council. https://fsc.org/en/about-us

FSC. 2012. *Strategic review on the future of forest plantations*. Helsinki, Finland, Indufor/ Forest Stewardship Council. (also available at https://ic.fsc.org/download.strategic-review-on-the-future-of-forest-plantations.671.htm).

Gatsby. undated. Kenyan Forestry Sector. London, Gatsby Charitable Foundation. https://www.gatsby.org.uk/africa/programmes/kenyan-forestry-sector

GoodCompany Ventures. undated. [online]. Philadelphia, USA. https://goodcompanyventures.org/

Green Charcoal Uganda. undated. [online]. Kampala. http://greencharcoalug.com

IFAD. 2012. *Agricultural value chain finance strategy and design: technical note.* Rome, International Fund for Agricultural Development. https://www.ifad.org/en/web/knowledge/publication/asset/39181165

IFAD. 2015. *Guidelines on economic and financial analysis.* 3 vols. Rome, International Fund for Agricultural Development. (also available at https://www.ifad.org/en/document-detail/asset/39761833).

IFC. 2012. Performance Standards [online]. Washington, DC, International Finance Corporation, World Bank Group. www.ifc.org/performancestandards

IFC. 2019. *Working with smallholders. A handbook for firms building sustainable supply chains*. Washington, DC, International Finance Corporation, World Bank Group. https://openknowledge.worldbank.org/handle/10986/29764

IFC. 2020. *Doing business* [online]. Washington, DC, International Finance Corporation, World Bank Group. https://www.doingbusiness.org/

IFC. 2020. *Investment proposals*. Washington, DC, International Finance Corporation, World Bank Group. https://www.ifc.org/wps/wcm/connect/corp_ext_content/ifc_external_corporate_site/solutions/investment-proposals

IFC. 2020. *Risk management*. Washington, DC, International Finance Corporation, World Bank Group. (also available at https://www.ifc.org/wps/wcm/connect/Industry_EXT_Content/IFC_External_Corporate_Site/Industries/Financial+Markets/Risk+Management/).

IUCN & WRI. 2014. *A guide to the restoration opportunities assessment methodology (ROAM): assessing forest landscape restoration opportunities at the national or sub-national level*. Working Paper (Road-test edition). Gland, Switzerland, International Union for Conservation of Nature, and Washington, DC, World Resources Institute.

Jacovelli, P. 2010. Uganda's Sawlog Production Grant Scheme: a success story from Africa. *International Forestry Review*, 11: 119–125. https://doi.org/10.1505/ifor.11.1.119

Macqueen, D. (ed.) *et al.* 2012. *Supporting small forest enterprises – a facilitator's toolkit. Pocket guidance not rocket science!* IIED Small and Medium Forest Enterprise Series No. 29. Edinburgh, UK, International Institute for Environment and Development. (also available at https://pubs.iied.org/13558IIED/).

Macqueen, D., Benni, N., Boscolo, M. & Zapata, J. 2018. *Access to finance for forest and farm producer organisations (FFPOs)*. Rome, FAO, and London, IIED. Research Report, 98 pp. Licence: CC BY-NC-SA 3.0 IGO. (also available at https://pubs.iied.org/13606IIED/).

Miller, C. & Jones, L. 2010. *Agricultural value chain finance. Tools and lessons.* Rome. FAO. (also available at http://www.fao.org/3/i0846e/i0846e.pdf).

PFP. 2016. *Value chain analysis of plantation wood from the Southern Highlands*. Iringa, United Republic of Tanzania, Private Forestry Programme. (also available at http://www.privateforestry.or.tz/en/resources/view/value-chain-analysis-of-wood-plantation-from-the-southern-highlands).

PFP. 2018. *Investment opportunities in the Tanzanian forest industry and bioenergy sectors. Cluster analysis*. Helsinki, Finland. Private Forestry Programme. (also available at http://www.privateforestry.or.tz/uploads/PFP_Investment_Opportunities_Final.pdf).

PwC. undated. *Introduction to financial modelling* [online]. Singapore, PricewaterhouseCoopers. (also available at https://www.pwc.com/sg/en/academy/academy-in-house-programme/intro-financial-modelling.html).

PwC & WBCSD. 2010. *Sustainable forest finance toolkit*. London, PricewaterhouseCoopers LLP, and Geneva, Switzerland, World Business Council for Sustainable Development. (also available at https://www.pwc.co.uk/assets/pdf/forest-finance-toolkit.pdf).

Rainforest Alliance. 2019. *Sustainable Agriculture Standard. Applicable for smallholder farms*. New York. (also available at https://www.rainforest-alliance.org/business/wp-content/uploads/2019/06/draft-smallholder-agriculture-standard-v2.pdf).

SPGS. 2010. *Sawlog Production Grant Scheme timber market study.* Uganda, Ministry of Water and Environment. (also available at http://spgs.mwe.go.ug/sites/files/Timber%20Market%20Study%202010_0.pdf).

The Equator Principles. 2020. Risk management framework adopted by financial institutions [online]. https://equator-principles.com./about/

Udemy. *Value proposition design: develop compelling value propositions for your products & services using a worldclass business tool.* E-learning course [online]. California, USA. https://www.udemy.com/course/create-products-services-that-customers-want/

UNCTAD. 2019. *Promoting cotton by-products in Eastern and Southern Africa (ESA).* Geneva, Switzerland, United Nations Conference on Trade and Development. (also available at https://unctad.org/en/PublicationsLibrary/ditccominf2019d2_en.pdf).

UNPD. 2019. New York, United Nations Population Division [online]. https://population.un.org/wpp/

UN PRI. 2019. *An introduction to responsible investment in forestry.* London, United Nations Principles for Responsible Investment. (also available at https://www.unpri.org/download?ac=6441).

VC4A. undated. Venture Capital for Africa [online]. https://vc4a.com/; https://consulting.vc4a.com/

Verdone, M. & Seidl, A. 2017. Time, space, place, and the Bonn Challenge global forest restoration target. (also available at https://doi.org/10.1111/rec.12512)

WEF. 2019. *The global competitiveness report.* Geneva, Switzerland, World Economic Forum. (also available at http://www3.weforum.org/docs/WEF_TheGlobalCompetitivenessReport2019.pdf).

World Bank. undated. *Enabling the business of agriculture (country profiles)* [online]. Washington, DC. https://eba.worldbank.org/

World Bank. undated. Worldwide Governance Indicators [online]. Washington, DC. https://info.worldbank.org/governance/wgi/

World Bank. 2009. *Clusters for competitiveness – a practical guide & policy implications for developing cluster initiatives.* Washington, DC. (also available at http://www.fao.org/sustainable-food-value-chains/library/details/en/c/267097/).

World Bank, CIF & PROFOR. 2017. *Harnessing the potential of private sector engagement in productive forests for green growth.* Washington, DC. (also available at https://www.profor.info/sites/profor.info/files/Productive%20forests%20booklet%20-updated.pdf).

World Bank. 2018. *The future of food. Maximizing finance for development in agricultural value chains*. Washington, DC. (also available at https://www.worldbank.org/en/topic/agriculture/publication/the-future-of-food-maximizing-finance-for-development-in-agricultural-value-chains).

WRI. undated. The Land Accelerator [online]. Washington, DC, World Resources Institute. https://thelandaccelerator.com/

WRI & TNC. 2018. *The business of planting trees: a growing investment opportunity*. Washington, DC, World Resources Institute, and Nairobi, The Nature Conservancy. (also available at https://www.wri.org/publication/business-of-planting-trees).

WUR. 2020. *Landscape finance: investing in innovation for sustainable landscapes*. E-learning course [online]. Netherlands, Wageningen University & Research. https://www.wur.nl/en/show/Landscape-Finance-Investing-in-Innovation-for-Sustainable-Landscapes-3.htm

Your Europe. undated. Standards in Europe [online]. Brussels, European Union. https://europa.eu/youreurope/business/product/standardisation-in-europe/index_en.htm

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