Food and Agriculture Organization of the United Nations

Creating resilient livelihoods for

in small-scale food production

A collection of projects to support young people in achieving sustainable and resilient livelihoods and food security

Creating resilient livelihoods for YOUTH in small-scale food production

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Foreword

Small-scale food production constitutes the livelihood of around 2 billion people worldwide. Currently, 95 percent of the world's existing farm units have less than 5 hectares (ha) of land, and 84 percent have less than 2 ha (HLPE, 2013; Lowder, Skoet and Raney, 2016).

Small-scale food producers are key allies in efforts to bring about zero hunger, as most parts of the world depend on them for food security and nutrition. They will therefore play a major role in transforming agrifood systems and in achieving the 2030 Agenda, as well as the climate-related objectives of the Paris Agreement and the United Nations Framework Convention on Climate Change (UNFCCC) (HLPE, 2013).

However, as a group, small-scale food producers are also among the poorest and most marginalized people on the planet, while being on the frontline of climate change. Small-scale food producers in developing countries are especially vulnerable due to a range of negative impacts primarily caused by climate change – including weather extremes, pests, diseases, loss of biodiversity and declining productivity levels that ultimately lead to increased poverty, intensified inequality and higher food insecurity. These people and their families often lack access to basic services, social protection, rights, markets, information, natural resources, inputs and technology, and also face the challenge of poor infrastructure, which makes them disproportionally vulnerable to shocks. More recently, the COVID-19 pandemic has placed additional pressure on small-scale food producers and rural communities, resulting in strong negative social and economic repercussions, particularly in the case of younger actors (FAO, 2020b).

In many regions, the generational transition in food production is no longer assured, which often leads to young people moving to urban areas or turning to other sectors for livelihoods. This has resulted in an increase in the average age of agricultural producers in many regions, to 53 years in the case of Latin America and the Caribbean and 49 years in that of sub-Saharan Africa (Arslan, 2019). While migration can be an engine of economic growth and contribute to the reduction of inequalities both within and between countries, it is important to boost alternatives, to make migration a free choice and not a necessity (FAO, 2019b). Furthermore, if viable and sustainable agrifood systems are to be developed and maintained, generational renewal is an essential prerequisite. We cannot afford to overlook such a critical linkage in the future of our food, but this precondition will not be met without creating attractive opportunities for youth in agriculture.

The involvement of youth in small-scale food production should be supported as both a means to offer better livelihoods for new generations, and as a pathway towards a sustainable future. Despite the challenges, the case studies presented in this publication demonstrate that small-scale production can represent productive and rewarding employment and livelihood opportunities for young women and men. However, bringing this approach to scale will not be possible without further investment in the overall sustainability of small-scale production and its capacity to generate attractive opportunities for youth.

Engaging youth in policy dialogue and governance mechanisms around small-scale food production is an urgent priority. Even though young small-scale food producers are an essential pillar of any strategy to achieve food security for all, these actors are often neither included nor addressed by initiatives and policies that focus on the agrifood system. Furthermore, young small-scale food producers are often not sufficiently included in decision-making and policy-making processes on a regional, national and international level and lack representation in farmers' organizations and alliances, where they could advocate for their needs. While youth are in the forefront of building sustainable food systems, they also bear the brunt of the consequences of climate change, as well as social and economic inequities, and they frequently lack rewarding and meaningful work or adequate livelihood opportunities (HLPE, 2021).

FAO is strongly committed to supporting small-scale food producers, as stated in Sustainable Development Goal (SDG) Target 2.3, which entails doubling the agricultural productivity and incomes of small-scale food producers by 2030, in particular those of women and Indigenous Peoples, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm decent employment. In addition, FAO is supporting young food producers and the generational sustainability of farming through implementation of the United Nations Decade of Family Farming 2019–2028 (UNDFF) (FAO and IFAD, undated).

The **Global Action Plan** for this initiative devotes special attention to young family farmers through actions suggested in its pillar number 2 (Supporting youth and ensuring the generational sustainability of family farming). It addresses youth-related issues by taking a cross-sectoral approach to many diverse problems and activities which relate to the production, processing, distribution, preparation and consumption of food (FAO and IFAD, 2019). Lastly, FAO has introduced 'youth' as a cross-cutting theme across all its programmatic work, so to promote a more systematic mainstreaming and operationalization of youth-related issues while monitoring progress via FAO's Rural Youth Action Plan.

This FAO publication *Creating resilient livelihoods for youth in small-scale food production* showcases initiatives that have been successfully implemented to help youth build resilience in the agrifood system, despite the severe consequences of climate change and formidable social and economic challenges. It aims to inspire potential policies and programmes, by portraying key needs, challenges and initiatives, as well as lessons learned and opportunities for helping to improve the resilience of livelihoods for youth in small-scale food production. The aim is to draw recommendations from these initiatives, building on the Koronivia Joint Work on Agriculture (KJWA) – a landmark decision under the UNFCCC that recognizes the unique potential of agriculture in tackling climate change.

The collection of case studies present three approaches to including and empowering youth in small-scale food production: the first involves jointly addressing women and youth's needs; the second entails contemporaneously engaging with all generations; while the third involves focusing on children and youth as a group. For all three approaches, different case studies provide examples of concrete initiatives whose implementation has helped to better target and include youth in the agrifood system, ensure a generational transition, and secure livelihoods for young small-scale food producers, as well as the food security of billions of people worldwide.

In this context, the publication contributes to FAO's Strategic Framework 2022–2031, enabling a transformation to more efficient, inclusive, resilient and sustainable agrifood systems for better production, better nutrition, a better environment, and a better life. It aims to provide organizations and governments with the necessary basis to better design and implement policies, programmes and initiatives that target young small-scale food producers in situations of vulnerability, through evidence-based and culturally appropriate solutions. FAO is committed to strengthening the generational sustainability of agrifood systems and to making efforts to reframe society's perception of small-scale food production as a significant and dynamic sector, with the unique capacity for constant renewal and innovation.

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CREATING RESILIENT LIVELIHOODS FOR YOUTH IN SMALL-SCALE FOOD PRODUCTION – CASE STUDIES AND THEIR AUTHORS:

- **An approach to gender equality and youth inclusion through capacity-building in the Trifinio region – El Salvador Guatemala and Honduras**
  by Pablo Ruiz

Abbreviations and acronyms

c&c	initiative for coffee&climate
CCF	Child Care Foundation – Uganda
CCI	Cocoa climáticamente inteligente
CECI	Centre d'étude et de coopération internationale
CNCR	Conseil national de concertation et coopération des ruraux
COP	Conference of the Parties (to the UNFCCC)
CoP	community of practice
CSA	climate-smart agriculture
DAPSA	Direction de l'Analyse, de la Prévision et de la Statistique Agricole
FAO	Food and Agriculture Organization of the United Nations
FFS	farmer field school
FLR349	Forest Landscape Restoration 349 project
FPU	family production unit
IMTA	integrated multitrophic aquaculture
IPC	International Planning Committee for Food Sovereignty
IPCC	Intergovernmental Panel on Climate Change
KJWA	Koronivia Joint Work on Agriculture
MAELA	Movimiento Agroecológico de América Latina y el Caribe
MAIL	Afghanistan Ministry of Agriculture, Irrigation and Livestock
NAMA	Nationally Appropriate Mitigation Action
NGO	non-governmental organization
RESOPP	Réseau des organisations paysannes et pastorales du Sénégal
RSLC	Redes de Semillas Libres de Colombia
SBI	Subsidiary Body for Implementation (to the UNFCCC)

SBSTA	Subsidiary Body for Scientific and Technological Advice (to the UNFCCC)
SCP	Sustainable Consumption and Production
SDG	Sustainable Development Goal
SHG	self-help group
SOCODEVI	Société de coopération pour le développement international
UN	United Nations
UN DESA	United Nations Department of Economic and Social Affairs
UNDFF	United Nations Decade of Family Farming 2019–2028
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNESP	Universidade Estadual Paulista
UNFCCC	United Nations Framework Convention on Climate Change
WWF	World Wide Fund for Nature
YWG	Youth Working Group


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Introduction

One of the main challenges facing today's world is ensuring food security and proper nutrition for a growing population. Additional stressors such as economic instability, climate change and unsustainable agricultural practices are exacerbating world hunger. According to the State of Food Security and Nutrition in the World 2021, more than 811 million people worldwide, mainly from low- and middle-income countries, faced hunger in 2020, while more than 870 million people were reportedly chronically undernourished (FAO and IFAD, 2021). Small-scale farms account for 95 percent of all farms globally and produce nearly 80 percent of the world's food, while operating on only 12 percent of agricultural land, indicating their ability to produce food while regenerating the natural resource base (Lowder, Sánchez and Bertini, 2021; Lowder, Skoet and Raney, 2016). It is estimated that worldwide, 2.5 billion people are involved in smallholder agriculture, and 1.5 billion people live in smallholder households (FAO, 2012; IFAD and UNEP, 2013).[11]

Small-scale food producers are essential allies in efforts to achieve zero hunger, but the interests of these actors are not addressed by most policies and initiatives that focus on agrifood systems and agricultural development. While food production and agriculture represent the core business for small-scale food producers, these actors often face production constraints, poor access to markets, restrictive land policies and social injustice. Due to a changing climate, such challenging social and economic conditions, coupled with a lack of adaptive capacities or support mechanisms, have the effect of discouraging young people from engaging in small-scale food production, resulting in an ageing generation of small-scale food producers and putting global food security at risk (FAO, 2019a). In many regions, the generational transfer of food production is seriously compromised, leading to an increase in the average age of agricultural producers, which in Latin America and the Caribbean is 53 years, and in sub-Saharan Africa, 49 years (Arslan, 2019). This rise in the average age of farmers can be considered as one of the main global trends shaping twenty-first century agriculture, posing a serious risk to sustainable development (FAO, 2017b).

Although impressive economic growth has been recorded by several African and Asian countries in recent years, this progress has not been translated into widespread employment or income generation for youth (FAO, 2014). Consequently, youth are three times as likely as adults (25 years and older) to be unemployed (ILO, 2020). Despite the agriculture sector's potential to provide income-generating opportunities for rural youth, challenges related specifically to youth participation in this sector – and more importantly, options for overcoming them – are not extensively documented. Indeed, statistics on rural youth are often lacking, as data are rarely disaggregated by important factors such as age, ethnicity, gender and geographical location (FAO, 2014). Creating an enabling environment for youth to be included and empowered in food generation and production is a critical challenge, if food security is to be assured for the future.

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[1] To understand how smallholder farmers and family farmers fit into the group of small-scale food producers, please refer to the Glossary.

In order to promote sustainable food production and ensure food security for all, efforts must be made to mitigate the risks that currently threaten the livelihoods of young small-scale food producers and to foster their resilience to climate change and natural disasters. Moreover, it is essential to remove the systemic and structural barriers faced by those young people who are eager to engage in agriculture. Policy actions and activities designed and implemented by local and national institutions and organizations across the rural-urban continuum are essential to ensure a viable and dignified life for the next generation of farmers and local communities, as well as their access to natural and productive resources, finance mechanisms, knowledge and education, and to support the realization of their collective initiatives.

A generational renewal through the engagement of young women and men in agriculture is essential to ensure food security and reduce youth unemployment and unplanned migration (FAO, 2019a). The importance of tackling the vulnerability of youth and small-scale food producers has been raised in international agreements, conferences and submissions to the UNFCCC. One good example of initiatives designed to target this challenge is the United Nations Decade of Family Farming 2019–2028, which devotes particular attention to youth and to the generational sustainability of family farming. In the context of the UNFCCC, under various processes, parties and observers – including the Koronivia Joint Work on Agriculture, Action for Climate Empowerment, and the Local Communities and Indigenous Peoples Platform – have repeatedly stated the need to acknowledge young smallholder farmers as key stakeholders in the agriculture sector, in order to involve them in an adequate manner and to target them when implementing climate change-related projects (Chiriacò *et al.*, 2018a).

INFO BOX **Koronivia Joint Work on Agriculture (KJWA)**

The Koronivia Joint Work on Agriculture (KJWA) is a landmark decision that recognizes the role of agriculture in tackling climate change under the United Nations Framework Convention on Climate Change (UNFCCC). The Decision 4/CP.23 requests Subsidiary Bodies under the Convention to jointly address issues related to agriculture, taking into consideration the vulnerabilities of agriculture to climate change and approaches to addressing food security (Drieux *et al.*, 2019). As the only agenda item to discuss a wide range of topics related to agriculture and food security under the UNFCCC, the KJWA represents a unique opportunity to drive a transformation of the agrifood system and to address synergies and trade-offs between adaptation, mitigation, agricultural productivity, livelihoods and nutrition.

Source: Drieux, E., St-Louis, M., Schlickenrieder, J. & Bernoux, M. 2019. *State of the Koronivia Joint Work on Agriculture.* Rome, FAO.

In their conclusion in November 2021, the Subsidiary Body for Scientific and Technological Advice (SBSTA) and the Subsidiary Body for Implementation (SBI) recognized that socioeconomic and food security dimensions are important when dealing with agrifood systems and climate change and highlighted the priority of ending hunger and designing inclusive, sustainable and climate-resilient

agricultural systems, as well as long-term investments focusing on these priorities (SBI and SBSTA, 2021). In the context of the UNFCCC, the potential KJWA outcome at the 27th Conference of the Parties (COP27), scheduled to take place in November 2022 in Sharm El-Sheikh, Egypt, poses a unique opportunity to address the gap in the intergenerational transition in small-scale food production and the lack of resilient livelihoods for young people in agrifood systems. To contribute to this outcome at COP27 and beyond, this publication aims to inspire policies and programmes, building on a potential KJWA outcome by portraying key challenges and needs, initiatives, lessons learned and ways of helping to improve the resilience of livelihoods for youth in small-scale food production.

The following chapters highlight how approaches and initiatives to strengthen youth engagement and livelihoods in food generation and production systems can be based on the pillars of rights, equity, agency and recognition of marginalized voices. Through a series of case studies drawn from around the world, this publication provides examples of three major approaches to improving the resilience of livelihoods for youth in small-scale food production: (1) addressing women and youth's needs; (2) an intergenerational approach; and (3) positioning youth at centre stage. For all three approaches, introductions are provided to explain the particular advantages of the approach, and different case studies serve as examples of concrete initiatives whose implementation can better target and include youth in agrifood systems, in order to ensure a generational transition and the livelihoods of young small-scale food producers, as well as the food security of billions of people worldwide.

By documenting successful approaches to youth empowerment, this publication aims to support young people in small-scale food production, highlighting their challenges and consequent needs, inspiring the implementation of actions that target their inclusion and empowerment, and helping them to access better livelihoods. Methods identified by the report include making policy changes to support and enable young small-scale food producers, and drawing up a set of recommendations for KJWA negotiators, other actors involved in the UNFCCC, and international, national and regional actors in policy-making and programming. Designed for a broad audience, the case studies presented here underscore the need to include a generational lens to projects that target rural and agricultural development and to provide some general insights, in order to replicate the approaches implemented in other climatic and socioeconomic contexts.

Creating resilient livelihoods for youth in small-scale food production

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Methodology

To select the projects, a public *Call for case studies on initiatives that enhance the livelihoods of small-scale food producer youth under a changing climate* was published on FAO's KJWA website. This provided clear criteria for selecting the case studies (see **Annex I**). Entities involved in initiatives in their communities submitted their case studies following a detailed template with a list of questions until July 2020 (see Annex I).

Three more case studies were identified between July 2020 and autumn 2021 through the pre-COP26 event on the topic of the publication. When answering the questionnaire, each entity provided a detailed description of social and climate change impacts on their communities, all youth-focused activities, their challenges and lessons learned, and recommendations on how to work more effectively with youth.

To follow up on additional relevant information and to ensure a correct interpretation of the information provided in the questionnaire, the case study authors were contacted and asked specific questions, before being involved in several stages of review of their case study and the publication. The content of this report is therefore based on the information and experiences provided by the case study authors and supplemented with additional literature.

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Transforming small-scale food production for youth and women

Women make up a significant part of the workforce in the global agrifood system. Nevertheless, in many countries, deeply rooted gender roles continue to limit women's access to and control over productive resources, land and knowledge (Nelson and Huyer, 2016; OHCHR and UN Women, 2020). For similar reasons as in the case of youth, women are disproportionately affected by climate change, natural disasters and economic shocks, and in comparison with men, they face greater vulnerability. Jointly addressing inequalities that affect youth and women provides an opportunity to prevent the creation of gender gaps and advocate for cooperation and mutual understanding between genders from a young age.

With a view to designing tailored interventions, gender-responsive approaches advocate for the recognition of the differentiated needs of men and women and the impacts that all programmes and projects have on them (FAO and UNDP, 2019). From their conception, gender-responsive programmes take into account the specific roles and needs of women and design activities aimed at fostering their inclusion in value chains and decision-making processes.

The following case studies present examples of approaches that have succeeded in harnessing synergies in their interventions to integrate the needs of both youth and women who face similar challenges. Examples from Afghanistan and the Trifinio region (El Salvador, Guatemala, Honduras) show how capacity-building projects can not only improve women's access to productive resources and knowledge, but also enable their financial autonomy, as a key step in deconstructing gender roles and restoring trust in women's potential as farmers and entrepreneurs. The case study from Uganda presents the benefits of approaches that include male counterparts to foster cooperation and understanding within households.

An approach to gender equality and youth inclusion through capacity-building in the Trifinio region – El Salvador, Guatemala and Honduras

Written by Pablo Ruiz

In Guatemala, 30% of the population is between 15 and 29 years-old.

In 2014, 59% of the population lived below the poverty line.

The rate of youth unemployment is twice as high as the national rate.

Source: **FAO.** 2020c. *Empleo rural juvenil y sistemas agroalimentarios en Guatemala: Un análisis rápido de contexto.* Rome.

REGIONAL AND SOCIOECONOMIC IMPACTS OF CLIMATE CHANGE ON YOUTH

In Guatemala and Honduras, agriculture accounts for more than 30 percent of the labour force. However, the impacts of climate change threaten the future of agricultural communities and the livelihoods of small-scale food producing families. Climate shocks such as droughts and rising temperatures are affecting productivity and farm profitability.

Climate change also impacts social structures. Studies have shown a clear link between increased periods of drought and migration to the United States of America (Brown, 2008; FAO, 2017a). In the next 30 years, over 30 million migrants could move from Central America to the United States of America (Lustgarten, 2020). Migration directly impacts intergenerational knowledge transfer and can also lead to more women becoming heads of household.

In the Trifino region young people are particularly affected by the shifting climate. Faced with the vulnerability of working in small-scale production that is increasingly impacted by climate change, growing numbers of youth are migrating from rural communities to urban centres, or abroad in search of higher-paid jobs and better opportunities (Álvarez, 2018; Revista Fórum Café, undated). Since solutions for climate adaptation and mitigation increasingly rely on innovative practices and technology, there is tremendous untapped potential of youth, who are often more flexible when integrating new practices.

KEY ACTIONS TO ADDRESS YOUTH AND IMPROVE THEIR LIVELIHOODS

The **initiative for coffee&climate (c&c)** is an open global partnership of coffee companies and public partners aiming to address the negative effects of climate change in the coffee sector and develop

knowledge and tools to help the sector to adapt. An integrated approach and collaborative solutions are used that address the growing challenges of climate change to empower farming families by focusing on gender equality and youth inclusion within farming families and farmers' organizations.

The c&c initiative works to identify and promote hands-on applicable tools and approaches for extensionists, farmers, cooperatives, researchers, industry participants and other decision-makers. It supports adaptation to climate change through both the generation and dissemination of relevant experiences, as well as the establishment of a coalition of organizations and companies committed to applying and further developing the c&c approach.

The initiative utilizes the c&c methodology (coffee & climate, 2015), a five-step approach that aims to improve local decision-making and climate resilience at farm level, consolidating best practices and lessons learned into the c&c toolbox (coffee&climate, undated). The c&c methodology notably integrates the two following key actions:

- **Participatory design:** Project technicians work closely with farming families to create a sense of trust and identify household, farmers' organization and community needs. Farming families contributed to the development of tailor-made solutions, integrating all family members and creating a sense of ownership for everyone involved. This is achieved through:
  - a horizontal programme approach that involves men, women and youth;
  - a focus on social development, introducing topics of gender and generational integration;
  - the distribution of climate vulnerability surveys to families to guide the development of locally appropriate solutions; and
  - participatory workshops in the development of community adaptation plans to address key challenges identified.
- **Training:** Training incorporates a holistic focus, providing classroom and farm experiences on a variety of social, agronomic and environmental topics affecting coffee cultivation, household and community development. This includes life skills, professional development and technical knowledge, as well as gender sensitization and awareness within households and farmers' organizations. Family members of coffee producers are encouraged to take part in gender transformative training, as part of a strategy to support behavioural changes and attitudes for the entire household. Several exchange visits are also organized on demonstration plots promoting climate-smart agriculture (CSA) and diversification, to show farming families the benefits of the approach.

In the Trifinio region, the following adaptation options were selected in collaboration with farming families:

- **Farm and income diversification:** Diversification was a significant focus, with the introduction of practices such as intercropping (integration of Hass avocado and Persian lime into coffee farms). Through training and technical assistance (as well as providing seeds and plants), farming families changed their traditional perceptions and attitudes on diversification. This was largely due to the strong involvement of youth, who have their own, innovative ideas and are open to trying new practices. A total of 22 small businesses were established (five by youth), including coffee nurseries, seed banks, and suppliers of coffee farm equipment and organic

farm inputs. In Honduras, one business is processing plantain (including plantain flour), grown on its farm as part of the diversification strategy, and to add additional value.

- **Savings groups and entrepreneurship:** Savings groups were established with the participation of women and youth. Related activities and training worked to create a culture of saving, while collectively contributing to group funds for investments or emergencies, as well as developing business and administrative skills to encourage the establishment of small businesses to increase farmers' income streams. The creation of solidarity groups created an environment of trust and a sense of ownership with members, who – guided by a project technician – played an active role in group activities, creating rules and regulations, supporting the lending process, overseeing paperwork, and connecting with the local bank, among others.
- **Creating local capacities:** Local capacities were developed by working closely with the leadership of farmers' organizations to explore and implement strategies aimed at increasing opportunities for all members of the farming family. Women and youth were included through the development of advocacy committees, which established clear, concrete actions to be taken by the organizations, and objectives to be achieved, in order to encourage active participation by all members of the farming family and create opportunities for the next generation. As a result, five youths are now actively participating in the leadership of farmers' organizations and 18 farmers' organizations have established internal gender committees.

INFO BOX The Hanns R. Neumann Stiftung

The Hanns R. Neumann Stiftung non-profit foundation was founded in 2005 by Michael R. Neumann and his family. It builds on a long family history of working side-by-side with smallholder coffee farmers in sustainable coffee trading. The objectives of the foundation include the improvement of livelihoods in tropical rural environments, as well as youth empowerment projects and nature and biodiversity conservation.

Source: Hanns R. Neumann Stiftung. **www.hrnstiftung.org**

CHALLENGES AND LESSONS LEARNED

Gender and generational inequalities are not only human rights issues, but also directly affect family businesses and country development. Initiatives such as the coffee&climate initiative work with farming families and organizations, to re-examine traditional gender norms and create opportunities, where each member of the farming family feels comfortable growing and working together to shift these dynamics, encouraging joint behavioural changes. A key approach in this activity is to comprehensively address the significant social, economic and agronomic factors that limit farming families' abilities to secure sustainable livelihoods. Individually, each component addresses an integral area of focus, but is limited in its ability to effect change over the long term; only by engaging all areas through a collaborative approach can lasting impacts be achieved.

The following lessons were learned during this initiative:

- It is important to focus not only on technical skills, but also on personal development. This is critical, as women and youth are often not fully represented as members of society, and can therefore benefit greatly from support in building self-confidence, and in articulating their needs and interests.
- Working closely with farmers' organizations creates a solid, local foundation to facilitate strong outreach to farming families, in particular women and youth, and adapt promoted approaches to align with local needs. In addition, partnering with existing farmers' organizations from the outset ensures access to long-term technical support and finance mechanisms for youth and women, and increases their job and leadership opportunities.
- Women and youth are often hesitant about taking the initiative to participate in activities, start their own business or join organizations, so developing life skills and confidence is essential, particularly as these groups can be more open to new ideas and innovative farm practices.
- At the same time, training of boys and men is key to ensuring that they are receptive to such participation, and prone to encourage it. It is also important to provide a space for youth to 'prove themselves' before their parents, enabling them to showcase their interests as well as their skills and knowledge (for example, by managing demonstration plots).

HOW TO GET INVOLVED

Organizations can become involved in similar initiatives by working closely with farmers' organizations, creating a solid, local foundation to facilitate strong outreach to farming families, in particular women and youth, and adapt promoted approaches to align with local needs. Partnering with local stakeholders makes it possible to collaborate with ongoing efforts and expand activities into other communities. Finally, it is crucial to take a systemic approach, integrating agronomic, social and environmental components to provide holistic solutions to the main challenges faced by people in the agrifood system.

Empowering young women through teamwork in animal rearing – Uganda

Written by Kiwalabye Ronald

In Uganda, 72% of the population is employed in agricultural sectors, of which 72% women and 63% young people.

Only 27% of registered land is owned by women.

95% of youth are employed informally.

76% of the population is under 30 years-old.

Source: **UN DESA**. 2020. *Human development report, Uganda*. **https://bit.ly/1ubidfP**

REGIONAL AND SOCIOECONOMIC IMPACTS OF CLIMATE CHANGE ON YOUTH

Uganda's rapidly increasing population is placing growing pressure on land and natural resources, and plots are becoming ever smaller. Exacerbating these already difficult conditions, climate change is leading to prolonged droughts, reduced availability of water for cooking and hygiene, lower yields and higher harvest losses (Rapsomanikis, 2015; UBOS, undated).

Although they represent the majority of the agricultural workforce, women and youth continue to face limited access to education and restricted control and ownership of productive resources: in Uganda, women own only four percent of total rural land (FAO, 2018a; KAS, 2015). Without land ownership, farmers cannot access loans from banks, which would enable them to acquire funds to purchase inputs. To respond to these inequalities, projects supporting women and youth empowerment are critical, and the most effective ones benefit from the involvement and support of male and older counterparts in their genesis and implementation.

KEY ACTIONS TO ADDRESS YOUTH AND IMPROVE THEIR LIVELIHOODS

The Community Livestock Program is an initiative of Child Care Foundation-Uganda that improves women's livelihoods by supporting the development of climate-resilient cattle farming through training, veterinary services and help in acquiring the first animals. Its objective is not only to empower women, but also to involve male members of their families, in order to encourage dialogue and mutual comprehension, build teamwork and promote recognition of how the empowerment of women can benefit the entire community.

As part of its CSA component, the Schools Tree Project launched the Community Livestock Program to foster climate resilience. The initiative aims to empower rural women through pig farming and targets impoverished rural areas of the Jinja District in eastern Uganda. Its approach is based on three major components:

- low external inputs, by promoting the use of local feeds and breeds and teaching farmers to make food supplements for cattle, using local herbs;
- involvement of male family members, by integrating them at each step of the project and encouraging teamwork among spouses; and
- awareness-raising on unequal access to land, through capacity-building and economic empowerment of women farmers, to give them resources to purchase their own land, but also to foster their involvement in family decision processes concerning land.

With the help of local leaders, the project identified 84 women, most of them aged 17 to 34, to be enrolled in a four-week training course on livestock management – a holistic package that included animal nutrition, disease control, offspring management and hygiene. The training placed a strong emphasis on climate-smart and sustainable agriculture, notably by teaching farmers biogas and feed production using local resources and food scraps. Members were also introduced to financial and business management, including accountability and marketing.

Following the training course, the 84 members formed 12 groups and elected respective leaders. To encourage savings schemes, each group was invited to elect a chairperson and secretary, as custodians of each group's savings. Members were requested to agree to the terms and conditions of the project which include, but are not limited to: working in teams, feeding the animals daily and taking the responsibility of protecting them; vaccinating the pigs on a monthly basis, and agreeing on the sharing procedure of the offspring. Piglets are equally distributed among group members – who keep some and distribute the rest within their families – until each group member has enough animals to start their own pig farm. The sow is subsequently taken to another village, as the basis for a new pig-rearing programme.

Each group received a female pig, which they took care of collectively. Male relatives of group members were strongly encouraged to take part in all steps of the breeding, to foster cooperation and mutual understanding within couples. During this phase, the project placed a strong focus on teamwork and organization, in order to strengthen collaboration within the 12 groups. At the end of

each month, the Community Livestock Program offered free veterinary services to the animals in each group, which included vaccination, deworming and vitamin supplementation.

In addition, the project has built capacity for biogas production; as more women enrol in the project, more animal waste will be produced until a sufficient quantity is reached to install biogas units for each household. Biogas production will release pressure on forest resources by providing households with an alternative source of energy to wood for cooking, and will also save on the amount of time and energy that women spend collecting fuelwood.

Future plans involve scaling up the project using a simple replication process to involve 100 additional villages in the districts of Jinja, Mayuge and Iganga by 2030. Replication will rely on transferring offspring pigs from existing groups to newly formed groups in other villages. The self-replicability of the project is a critical advantage that enables action to be scaled up and out at low cost.

INFO BOX Child Care Foundation - Uganda (CCF)

Child Care Foundation-Uganda (CCF) is an educational, non-profit organization committed to empowering children and youth in Uganda. The Schools Tree Project is a CCF initiative whose mission is to empower young people to become proactive stewards of the environment in the fight against climate change. As part of its CSA component, the Schools Tree Project launched the Community Livestock Program to foster climate resilience and empower women through animal husbandry activities in teams.

Source: Child Care Foundation-Uganda. **https://chcare.webs.com**

CHALLENGES AND LESSONS LEARNED

The achievements of the project were measured in terms of the acceptance, participation and proactivity of the members. The women beneficiaries were actively engaged in the daily feeding and care of the animals, which helped to build a spirit of teamwork that was previously lacking. The project also had a positive impact on generational transition, as children of the participants were taught the newly acquired skills by their mothers.

The programme's greatest successes were witnessed in women aged between 25 and 38 years, who learned fast and adapted well. The initiative was less successful in the case of very young women (16–20 years). In this age bracket, a number of women left the programme to move to a city or to migrate to other locations. While the programme also worked well in the case of women aged 40–60 years, these required more training due to greater resistance to change, having used other practices for many years. The most successful formula involved mixing age groups between younger and older women.

Financial empowerment is crucial to the emancipation of women of all ages. To date, three groups have started selling offspring and are earning money from breeding. The groups are saving the money from selling the pigs and diversifying their income sources, with the aim of buying land in the future.

One group has been able to open a small shop, where it sells food and vegetables grown in its gardens. Several factors have been identified as critical in ensuring success of the initiative:

- **Breed quality:** the initial sow must be of a quality breed, to ensure a high number of healthy offspring.
- **Feeding resource availability:** urban areas do not have enough feed compared with rural areas, where grass can easily be grown to feed the animals.
- **Involving men** at all stages has positively influenced their perception and attitude towards the project. In one village, the chief took part in the group and played an important role in motivating other men to support the project.
- **Vaccinating the animals is essential:** pigs should be vaccinated on a monthly basis. Deworming pigs helps to address the problem of stunted growth and premature death. Veterinary services are therefore important if success is to be achieved.
- **Terms and conditions should be clear**: clear terms of engagement to project beneficiaries should be strictly adhered to by all members, to ensure commitment within the group.

HOW TO GET INVOLVED

The Community Livestock Program is easily replicable, notably because it requires low initial investments. Additional financial support could make it possible to scale up action more rapidly, as well as to provide women with more than one pig per group at the beginning. Lastly, women-run pig farms are now producing substantial quantities of animal waste, which is not used to the maximum. Technical intervention is therefore needed to enable women farmers to extract biogas from the pig waste and use it for cooking, instead of relying on fuelwood.

Development of dairy value chain provides regular income stream – Afghanistan

Written by Lutfullah Rlung, Anthony Bennett and Zia Najeeb

Afghanistan has one of the youngest and fastest growing populations in the world with approximately 67% of the population under the age of 25

The median age of the population in Afghanistan was 18.4 years in 2020

Source: UN DESA, 2019; UNFPA, 2020

REGIONAL AND SOCIOECONOMIC IMPACTS OF CLIMATE CHANGE ON YOUTH

Livelihoods in Afghanistan are heavily based on crops and livestock, which together account for those of about 45 percent of the active population and are a source of income for more than 60 percent of all households (UNEP, 2018). The very real risks posed by climate change to Afghanistan's development are often overshadowed by more immediate and visible concerns connected to conflict and economic crisis.

Nevertheless, the impacts of climate change are intrinsically linked to the economic and security concerns that are currently at the top of the Government's agenda. Climate change will make it extremely challenging to maintain – let alone increase – any economic and development gains achieved so far in Afghanistan. Increasingly frequent and severe droughts and floods, accelerated desertification, and decreasing water flows in the country's glacier-dependent rivers will all directly affect rural livelihoods, and as a knock-on effect, the national economy and the country's ability to feed itself.

Afghanistan's political and economic instability has deeply affected its youth, most notably by leading to a lack of job opportunities for this important group. With young people under 25 making up more than half the country's population, and only 16 percent of women (above the age of 15) being economically active as of 2020, creating job opportunities for youth and women must be a critical step in any strategy aimed at ensuring a viable economy for Afghanistan's future (UNFPA, 2020; World Bank, 2020a).

KEY ACTIONS TO ADDRESS YOUTH AND IMPROVE THEIR LIVELIHOODS

The Dairy Industry Development Project targets the poorest households in an attempt to reduce their vulnerability to climate change. The country's four dairy unions currently have 3 471 registered members (1 590 of them youths), of whom approximately 48 percent, or 1 540, are women (with a

total of 390 young women). The FAO/MAIL dairy project supports farmers (both men and women), helping them to collect 2 933 030 litres of quality milk in the year 2019, generating revenues of AFN 87 990 904 (USD 958 000) for farmers. The Dairy Industry Development model consists of a dairy value chain – managed by the union as an enterprise – that encompasses milk production, collection, processing and marketing of pasteurized milk and dairy products. Inputs and services are organized around these activities.

This initiative supports women in becoming economically active in ways that will benefit their households and in developing economic opportunities that will improve livestock production and agricultural lands through the adoption of climate-resilient inputs, technologies and processes. In Afghanistan, the first phase of the dairy value chain – milk production – is almost exclusively handled by young and adult women, while men play various roles along the value chain. The unions are exclusively run by men. Prior to the project, young and adult women were sometimes engaged in the marketing of milk, but results were limited as many of them faced hurdles in selling their products due to gender based norms. In this respect, significant progress has been achieved by the project through support to young and adult women in establishing milk collection centres near their homes to sell their products.

Another major success of the project has been the establishment of 40 self-help groups (SHGs), with more than 600 members in Kabul, Parwan and Logar Provinces. Between them, the groups accumulated total savings of 1 183 990 AFN (USD 15 580) between 2015 and 2020. These groups encourage young and adult women from different dairy cooperatives to come together to exchange experiences and have receive training in finding linkages with local markets. Members of these

small groups, which follow the norms of democratic self-governance, meet at regular intervals (weekly, bi-weekly or monthly) and contribute a small sum of money per person (for example AFN 20, 50 or 100 [USD 0.20, 0.50 or 1]) to a communal fund that will help to provide financial support to members in need. An SHG's money can be loaned out to members of the group under agreed conditions, to help them launch or develop small enterprises. Through these groups, members have diversified their income beyond the dairy sector and between 2015 and 2020, they sold additional products to diary for a total revenue AFN 5 810 000 (USD 63 245). Furthermore, they increased their market sales, gained financial independence and learned new skills.

As well as helping members to increase their incomes, SHGs also enable participants to build up a sociofinancial safety network on which they can rely when experiencing social or economic difficulties. The central idea behind the self-help group approach is to tackle poverty, enable social and economic empowerment and support the advancement of gender equality. Many positive social impacts are already visible during the first years of SHG implementation, such as the development of group solidarity and social as well as economic networks that can support members' families.

Training, in areas such as finance and SHG management, nutrition, food processing and marketing, has proved to be crucial to women's social inclusion and empowerment. Visits to dairy cooperatives in other provinces has also benefited women by strengthening their knowledge and perspectives of dairy processing and marketing. Additional targeted support designed to support beneficiaries' income-generating capacities have included the distribution of solar dryers, food processing tools and marketing support tailored to the location.

INFO BOX FAO-MAIL partnership

FAO Afghanistan and the Afghanistan Ministry of Agriculture, Irrigation, and Livestock (MAIL) jointly launched the Dairy Industry Development Project in 2014. The FAO-MAIL partnership has provided a foundation for trust, by working closely with dairy farmers in Kabul, Parwan and Logar based on its philosophy of creating shared value.

Source: Case study submission to the publication.

CHALLENGES AND LESSONS LEARNED

The technical support provided by the Dairy Industry Development initiative has helped to reduce milk losses, by introducing refrigeration systems along the dairy value chain. To implement culturally appropriate and sustainable projects it was found to be important to build on trust and partnerships. Nevertheless, local priorities and market opportunities should remain the driving force for future activities and priority setting. The approach adopted has made a strong contribution to empowering the young women taking part, by offering them an opportunity to sell products safely at village level and to receive a reliable weekly cash income from sales. Among the lessons learned, the project managers observed that:

- Young people from different dairy cooperatives who joined self-help groups became more connected and received training that helped them to find linkages with local markets.
- It is important to standardize norms in SHGs in order to ensure financial discipline. Also, both staff and SHG members should be convinced of the rationale behind these norms.
- In order to ensure continuous improvement in the performance of indicators for SHGs, an effective monitoring system needs to be set in place. Audits should be conducted and profit distribution assessed on a regular basis, to help SHG members realize the importance of savings.
- Prospects for project success can be increased by developing it within the existing social fabric of rural societies and adopting a progressive and culturally sensitive approach.

Challenges to effective implementation of the initiative included the following:

- In the tribal settlements, houses are far apart, so regular attendance of young and adult women at training sessions can be a challenge.
- Risks to group savings portfolios are high for many SHGs due to delays in loan repayments. In some SHGs, efforts to motivate members to ensure prompt repayment have not been successful.
- Marketing is a major challenge for some microenterprises launched by SHGs, especially for products that are new to the market, such as soy.
- Bank services are not available in rural areas. The issue has been discussed with government officials, with a view to facilitating access in the future.

HOW TO GET INVOLVED

More NGOs and provincial development partners could become involved in order to share best practices and build a unified SHG approach, so as to avoid duplication of services. Through small groups of two to three members, women can collaboratively apply their livelihoods skills, create small-scale agrifood businesses and use loans for income-generating activities.

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An intergenerational approach to integrate youth into small-scale food production

The United Nations Decade of Family Farming highlights the importance of the generational sustainability of family farming (FAO and IFAD, undated). Making concerted efforts to include youth in small-scale food production can help to ensure food security through the intragenerational and intergenerational transfer of tangible and non-tangible agricultural assets. Both younger and older generations can draw substantial benefits from the exchange of knowledge and information, as well as from collaboration, mutual social protection, and the sharing of labour time and tasks during food production (FAO and IFAD, 2019).

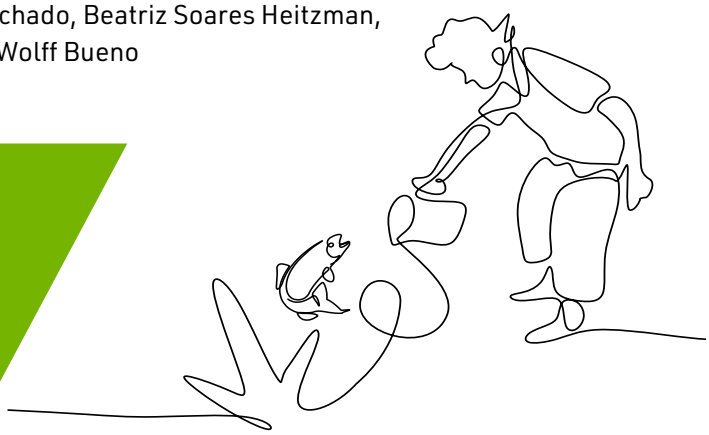
Indigenous Peoples' traditional *chakra* systems (traditional food production and generation systems) are two examples of excellent enabling environments for this intragenerational and intergenerational transfer of assets and knowledge, as the case studies from Ecuador and Thailand show in this section.

Beyond the family, youth can benefit from participating in multigenerational community-based groups and producer organizations, as well as in training or education pathways related to the agrifood system. Examples of this approach include the community of practice in Senegal, with diverse solutions for integrating youth in agriculture through community action, as well as the seed network in Colombia, where community action is further supported through youth-inclusive decision-making and new government policies.

In the context of family farmers, small-scale food producers and Indigenous Peoples, the creation of new government policies in consultation with youth – on issues of youth inclusion and an intergenerational approach – is crucial to ensure food security and resilient livelihoods in the agrifood system. Through dynamic engagement with older members of their communities, youth can create bridges between traditional and local knowledge and innovative ideas, networks, capital and technologies, and can drive inclusive rural development and build sustainable agrifood systems (FAO, 2014, 2017b; FAO and IFAD, 2019). The case study on multitrophic aquaculture systems in Brazil demonstrates how younger and senior farmers can complement each other's skills, using their specific roles to contribute to the family's livelihood. The following case studies showcase more good practices for this intergenerational approach, demonstrating the value of ensuring the inclusion of youth to create resilient livelihoods for small-scale food producers.

Multitrophic aquaculture helps to integrate youth in family farms – Brazil

Written by Levi Pompermayer Machado, Beatriz Soares Heitzman, Rodrigo Roubach and Guilherme Wolff Bueno



In Brazil, some 85% of family farmers are over 60 years-old.

26.21% of youth are not in education or employment.

Source: **World Bank.** 2020a. *Share of youth not in education, employment or training – Brazil.* **https://data.worldbank.org/indicator/SL.UEM.NEET.ZS?locations=BR**

REGIONAL AND SOCIOECONOMIC IMPACTS OF CLIMATE CHANGE ON YOUTH

The Brazilian Atlantic Forest is a hotspot of biodiversity. Vale do Ribeira, São Paulo, hosts 45 Conservation Units. Including indigenous lands and quilombola territories (Indigenous communities of Afro-Brazilian descent), the region is considered to be the largest continuous remnant of this biome (UNESCO, 1999).

The impacts of climate change are significant for Brazilian small-scale food producers, who are especially affected by changes in rainfall regimes and reduction in water quality and quantity. As a result, and in connection with a lack of technical support and adapted policies, local small-scale producers face a range of challenges, including limited production capacity, difficulties in understanding and responding to environmental factors that affect production, and an inability to access markets and product certification. Perhaps the most alarming consequence of these challenges is growing food insecurity and lack of household income for entire families .

Together with inadequate incentives and poor prospects of earning a decent livelihood from the land, these factors make small-scale food production less attractive to youth, many of whom move to urban areas, where they may encounter vulnerability due to violence, drugs and underdeveloped conditions in urban spaces. In Vale do Ribeiro, youth are not commonly associated with food production, and in projects, parents are often the official representatives of family farms (Lima and Paula, 2018).

This context makes it difficult for the resident population, public administration, and private initiatives to agree on an approach to increase food production, while maintaining appropriate interaction with the environment. However, experience has shown that the application of social technologies, and the inclusion of youth in the development of new productive activities, can open up new opportunities to create resilient livelihoods for youth and ensure food security for the wider community as a whole (Zambom *et al.*, 2017).

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KEY ACTIONS TO ADDRESS YOUTH AND IMPROVE THEIR LIVELIHOODS

The Development of Multitrophic Aquaculture for the Efficiency of Water Use and Food Production aimed at Environmental, Economic and Social Sustainability project was launched in 2019 with research funding from Brazilian phosphate and potash producer The Mosaic Company and the Instituto para o Desenvolvimento do Investimento Social, an NGO that supports social development projects. Project implementation has been funded by a public subsidy.

Students of UNESP implemented the project working with 25 families (out of 50) from the Association of Family Farmers of the Municipality of Cajati, who practise aquaculture to supplement their income and have moved into integrated multitrophic aquaculture production (IMTA).

The family production units (FPU) are located in Cajati (Sao Paulo), one of the 22 municipalities of Vale do Ribeira, a protected area of Brazil's Atlantic Forest in. Each family farm, originally producing bananas and hearts of palm, received 20 m^3 of geomembrane tanks populated with 2 000 juvenile African catfish, each with an initial average weight of 2 g and stocked at a density of 70 fish per m^3. While the tanks were the parents' property, the programme's objective is to diversify production, income and subsistence on family farms, with a strong focus on youth inclusion. To build farming families' capacity to implement IMTA practices, knowledge transfer was conducted by ECAP Jr, a company formed by fisheries engineering students. The young mentors at ECAP Jr trained local youth from the beneficiary families in niche skills, teaching them to apply an IMTA system that linked production of African catfish (*Clarias gariepinus*) and duckweed (*Lemna minor*). This association was designed to produce biomass, vegetable and animal protein on family fish farms in the Atlantic Forest region. Catfish has strong potential for inclusion in school meals, as it lends itself to a range of preparation methods and has no small bones. Duckweed is a free-floating, fast-growing aquatic macrophyte which has a high capacity for bioremediation of effluents rich in phosphorus and nitrogen. It stands out due to its high and highly digestible protein content, and is suitable as a raw material for human food and animal feed. The IMTA system based on these two resources produces excellent performance due to the simplicity of the technology and low cost of implementing it.

INFO BOX 1 The Fisheries Engineering department at Universidade Estadual Paulista (UNESP)

The **multitrophic aquaculture project** is coordinated by the Fisheries Engineering department at Universidade Estadual Paulista (UNESP), Brazil with support from the Coati municipality UNESP is organized into 24 campuses that integrate research with local demands and explore opportunities for social technologies. The university carries out research, development and innovation linked to the community, with 65 percent of students being native to the region, many of them children of producers.

Source: Case study submission to the publication.

INFO BOX 2 Aquaculture

It's considered to be a viable and low-cost source of high-quality proteins, especially in developing countries, where it is being increasingly used to help assure food security. In this scenario, modern ways of thinking and acting in the production of aquatic organisms are necessary, as natural resources are finite and likely to become scarce.

Source: Case study submission to the publication.

INFO BOX 3 Integrated multitrophic aquaculture production (IMTA)

It's an aquaculture system based on the association of species in such a way that effluents from the production of one species are used to promote the growth of another. IMTA diversifies cultivated species, reduces the generation of waste and effluents, and optimizes natural and human resources.Through increased economic and environmental efficiency of fish farms, it enhances their competitivity in the marketplace.

Source: Case study submission to the publication.

INFO BOX 4 Criteria for the assessment of bioeconomic efficiency

For the selection of species and the assessment of bioeconomic efficiency, the following criteria were found to be important:

Species were selected according to:

1) simplicity of management;
2) high nutritional value; and
3) markets still underexplored in Brazil.

Bioeconomic efficiency was assessed against the following indicators:

1) the bioproducts contribute to achieving food production with rational use of environmental resources (eco-friendly incomes and profits); and
2) scope for diversification and application of technologies to retain the interest of producers, or attract youth to become involved in the activity (new market and business opportunities).

Source: Case study submission to the publication.

CHALLENGES AND LESSONS LEARNED

The transfer of knowledge through the university to the association of family farmers, combined with the partnership with the public administration and the private sector, created fertile conditions for regional development. An interinstitutional approach, based on the transfer of knowledge and provision of technology, was found to be the most effective methodology. In this context, the participation of young students from the Fishing Engineering department (UNESP and ECAP Jr) was fundamental to the progress witnessed. The main change observed as a result of the initiative was the assumption by youth of responsibility for production, as well as the acquisition of technical knowledge and academic training to implement new small-scale food production processes. Some young participants began exploring the use of duckweed as a supplementary animal feed, and this has now been launched as a new product sold by the family farms. Following implementation of the project, young beneficiaries began applying for agricultural science courses at UNESP. While the project initially attracted more interest from FPU members over the age of 50, the approach of using social technologies based on process innovation has led to growing interest from young people, who were previously not directly involved in their family farm. Family aquaculture production has strong potential to supplement income and food security for communities in Vale do Ribeira. The FPUs, each consisting of 20 m^3 of fish farms connected to 500-litre tanks for duckweed production, can be installed on small properties in non-agricultural areas. Generally, the tanks are constructed in the backyard of properties, providing easy access to resources and equipment. The tanks are suitable for other regions and communities, as the components of IMTA's fish and plant production can be changed to suit local conditions. While there is still a general lack of commercialization of plant production among communities, this poses an opportunity for the inclusion of youth in the development of new markets.

HOW TO GET INVOLVED

Producer organizations in collaboration with governments could create mechanisms and policies to encourage the insertion of youth in agriculture, especially in small-scale food production. An important next step involves conducting applied research, in conjunction with companies in the industry. This will provide the necessary basis for economically viable products and meeting market demands; thus, small-scale food-producing youth will have greater opportunities to reach different markets and ensure the sustainability of family production. Technology-based companies have the opportunity to create new production chains and monetize bioproducts and biomass of small-scale food production from the Atlantic Forest. NGOs and researchers, in particular, can contribute to expanding the capacity of the association of family producers to access funding for the implementation of eco-friendly innovation in agro-systems.

Market access and income protection in Ecuadorian Indigenous *chakra* systems

Written by Geovanny Enriquez and Ana Andrade (FAO Ecuador)

In Ecuador, cocoa producers are on average 56 years-old

The share of youth not in education, employment or training (as % of youth population) is 17.52%

Source: **World Bank.** 2020b. *Share of youth not in education, employment or training – Ecuador.* **https://data.worldbank.org/indicator/SL.UEM.NEET.ZS?locations=EC**

REGIONAL AND SOCIOECONOMIC IMPACTS OF CLIMATE CHANGE ON YOUTH

Ecuador is the world's leading producer of fine and aroma cocoa and ranks third in the world as a producer of conventional cocoa. The *pepa de oro* is the country's oldest export product and an emblem of the national economy. In 2019, Ecuador had around 120 000 cocoa producers, 86 percent of them cultivating plots of land smaller than 5 ha. Recently, climate change has brought new challenges for cocoa producers. Higher temperatures, as well as an increase and variation in the intensity and seasonality of rains, have led to more frequent dry periods and an increase in pests and diseases. In addition, erosion, loss of soil nutrients and strong winds have resulted in losses and poorer harvests. Human activities, and especially conflicts between large- and small-scale food production, may pose a direct threat to cocoa production. In the Amazon region, deforestation and unsustainable use of forest resources are deeply destabilizing the rich ecosystems of the virgin forest, on which Indigenous Peoples rely for their food security and livelihoods.

Indigenous cocoa systems offer a more resilient and sustainable alternative to industrial cocoa production. The Amazonian Kichwa populations cultivate cocoa in small-scale agroforestry systems locally known as *chakras* or *Amazon chakra* (see box on indigenous *chakra* systems). With production volumes too low to access export markets, small-scale cocoa producers in *chakra* systems must revert to direct sale to intermediaries, who pay very low prices. Due to these difficulties, combined with a lack of capacity in accounting and business management, as well as low financial and technical support from the Government, many youth cannot find resilient livelihoods within the local food system.

However, supporting indigenous cocoa systems could contribute to protecting the rich biodiversity of the Amazon. Support in accessing markets and stronger resilience to climate change could help to create resilient livelihoods for young small-scale food producers, as well as to preserve the cultural heritage of indigenous food systems.

KEY ACTIONS TO ADDRESS YOUTH AND IMPROVE THEIR LIVELIHOODS

The Climate-Smart Cocoa (CCI) project supports access to markets with higher prices in order to secure better livelihoods for Indigenous youth and their families. To this end, the project adopts a participatory approach to identifying practices that can improve the climate resilience, quality and traceability of coffee production.

In the Ecuadorian Amazon, the intervention has targeted three cantons of Napo Province, (Tena, Archidona and Carlos Julio Arosemena Tola), and directly benefited three associations of cocoa producers in *chakra*: Kallari, Wiñak and Tsatsayaku, reaching a total of 1 147 small-scale cocoa producers. Each association has a high percentage of Indigenous Peoples among its members, ranging from 80 to 100 percent. The participation of women is around 65 percent, and that of youth about 20 percent. In 2021, the Corporation of Associations of the Amazon *Chakra* was formed, with approximately 5 000 participating producers belonging to five producer associations (including the three mentioned above).

Aimed at further strengthening youth engagement and cooperation within families, the CCI project involves all generations in its capacity-building activities. The project has targeted:

- **adaptation**, by promoting conservation of the genetic biodiversity within *chakra* systems, as well as the use of resilient practices in line with the climate-smart agriculture approach;
- **mitigation**, by contributing to the protection of *chakra* systems that are important carbon reservoirs and developing skills for carbon sequestration monitoring, in line with national sequestration reporting systems;
- **better livelihoods**, by improving cocoa quality, strengthening producers' business capacities, and reinforcing the participatory guarantee system (here known as the *Chakra* Seal), in order to integrate cocoa production into the high-quality niche market (fine cocoa and bean-to-bar chocolate producers), which ensure better revenues for producers.

The project has applied a participatory approach and involved young producers at all steps, including in the design of the carbon sequestration monitoring and participatory guarantee systems. Training

has been conducted within a Farmer Field School targeting CSA practices, quality, traceability and marketing. The management of *chakra* systems, based on the ancestral practices of the Amazon Kichwas, already includes efficient soil fertilization, adaptation of agriculture to new trends of heavy precipitation and high temperatures, diversified designs, including agroforestry practices, cycles of regeneration, and the inclusion of species for food or soil enrichment. The training has therefore built on these existing skills in order to strengthen resilience and bridge potential gaps, in so doing encouraging Indigenous youth to see the *chakra* system as an opportunity to improve their livelihoods, while protecting their ancestral knowledge and culture.The project has reinforced quality certification through the creation of a participatory guarantee system (in this case, *Chakra Seal*). Using an inclusive approach, parameters to assess quality, such as the organoleptic profile, were chosen based on experiences from other regions and crops. In addition, young producers were involved in the formation of the Ethics Committee of the *Chakra Seal*, as well as developing the *Chakra Seal* regulations and the training of *Chakra Seal* overseers. A clear sign of a shift in youth engagement and recognition has been the selection of a young Kichwa woman leader as president of the regional cocoa consortium. Finally, the systemic approach inherent to *chakra* systems has enabled youth to identify sources of additional income, such as other products of interest for the international high-quality market (coffee, vanilla and guayusa); there is also strong potential for low-impact experiential agroecological tourism, which could be promoted by small-scale producer organizations, youth and their communities.

INFO BOX 1 FAO–Italy–Napo Province partnership

The Climate-Smart cocoa (CCI, from its Spanish acronym) project was implemented by FAO with financial support from the Italian Ministry of Ecological Transition, in partnership with Napo Provincial Autonomous Decentralized Government, Napo Province's Corporation of Associations of the Amazon *Chakra*, the Ministry of Agriculture and Livestock of Ecuador and the Ministry of the Environment, Water and Ecological Transition of Ecuador.

Source: Case study submission to the publication.

INFO BOX 2 Indigenous *chakra* systems

Indigenous *chakra* systems represent an efficient and dynamic space for conservation and in situ propagation of Amazonian agrobiodiversity and have been nominated as Globally Important Agricultural Heritage Systems. *Chakra* systems are host to more than 150 different species and provide a variety of products used for food, medicine, rituals and housing purposes. These systems efficiently preserve biodiversity, improve soil quality and fertility and help to regulate soil hydrological cycles.
They are also able to capture and store twice as much carbon as cocoa monocultures– a fact that was confirmed by a study carried out by the Climate-Smart Cocoa project in Ecuador. In the Napo Province, *chakra* systems are applied by 14 000 families of the Kichwa and Kijus ethnic peoples, in an approximate area of 30 000 ha. The systems play a central role in the social and cultural life of the Kichwa people: *chakras* are cultivated with the help of the entire family, making this an ideal space for education, knowledge transmission to children, and the inclusion of youth in agricultural activities.

Source: **Jadán, Oswaldo & Torres, Bolier & Günter, Sven.** 2012. *Influencia del uso de la tierra sobre almacenamiento de carbono en sistemas productivos y bosque primario en Napo, Reserva de Biosfera Sumaco, Ecuador.* Revista Amazónica: Ciencia y Tecnología. 1. 173–186.

CHALLENGES AND LESSONS LEARNED

Two key practices contributed to the success of the project. First, targeting niche markets for high-quality products, by focusing on quality and traceability, proved critical to ensuring better prices and livelihoods for youth. Second, to reach those markets, relying on associativity emerged as important to aggregate volumes of interest for export. The project has helped to highlight the importance of youth as future guardians of indigenous food systems and inspired them to become the promotors and defenders of this ancestral agroforestry system, notably by taking an active role in the proposals and execution of actions to combat climate change. Although *chakra* systems are unique and only found in Napo Province, cocoa is cultivated throughout the country, and wherever it is grown it is possible to design locally adapted agroforestry and CSA systems. There is therefore an opportunity to replicate the approach in other parts of Ecuador, not only with cocoa, but also with other goods suitable for high-quality markets. The Climate-Smart Cocoa project also proposed an initial route for a Nationally Appropriate Mitigation Action (NAMA)[2] to carry out actions on a larger scale.

HOW TO GET INVOLVED

To further advance the development of this project, two entry points for other entities to become involved are the participatory guarantee system of the *Chakra Seal*, and the Corporation of Associations of the *Amazon Chakra*. Certification through a participatory guarantee system brings together various public and private institutions with the Ethics Committee of the *Chakra Seal*, and has already opened up markets in Germany and Japan. The Corporation of Associations has promoted the integration of producers who cultivate *chakra* systems from the Napo and neighbouring provinces. The objective is to continue increasing and integrating members to the point of becoming the point of regional representation of the Amazon cocoa and other *chakra* products. In addition, the practices proposed during training made it possible to link up with other initiatives and promote local sustainable development – such as The Sustainable Development Fund (from FODESNA, its acronym in Spanish) – which enabled the capture of environmental funds, in this case as a possible way to finance a NAMA. Expanding efforts will require commitment from authorities, in particular the Territorial Planning and Development Plans of the Decentralized Autonomous Governments, and each locality will need to investigate the potential and advantages for various crops, as well as the risks and climate-related threats.

[2] NAMAs make reference to actions that reduce emissions in developing countries and are produced by national governmental initiatives. These include policies for transformational change in a specific sector or actions across sectors.

Forest landscape restoration: a nature-based approach to implementing sustainable small-scale agriculture in northern Thailand

Written by Ply Pirom and Abhinand Aryapratheep

In Thailand, young people are more likely to work in urban areas than before.

In 2018, 39% of youth were working in urban areas, and 29% in agriculture, but the balance has since become increasingly skewed towards urban areas due to limited income and productivity increases.

Source: **ILO.** 2020b. *Decent work and youth in Thailand – Facts and trends.*
www.ilo.org/wcmsp5/groups/public/---asia/---ro-bangkok/documents/publication/wcms_741237.pdf

REGIONAL AND SOCIOECONOMIC IMPACTS OF CLIMATE CHANGE ON YOUTH

Perceivable climate impacts are affecting food producers, with extreme weather conditions becoming more prevalent. For the past few generations, agriculture in Thailand has been dominated by monoculture practices and excessive use of agrochemicals. These practices have led to the degradation of soil and biodiversity and high prices of inputs have trapped farmers in a cycle of debt. Due to large-scale deforestation of watershed areas, the north of Thailand is facing longer and more severe droughts and unreliable precipitation patterns, which affect agricultural yields. Moreover, slash-and-burn practices used by monoculture farmers are leading to haze pollution affecting air quality, and thus the health of communities. The current development path led by a largely industrialized food system is arguably not a sustainable option for the country's agriculture sector, as industrial monoculture systems are more vulnerable to climate impacts.

Many rural youths have left for urban areas, either to study or in search of better job opportunities. Improving access to knowledge and supporting local and online markets for sustainable products has, however, proved effective in encouraging young people to take over family farms and empowering them to become ambassadors of a more resilient type of agriculture. New generations of rural youth are especially sensitive to the need to replace the conventional farming methods of their parents – which, despite having been used for decades, did not earn them a good living, nor made them resilient to climate risks. Youth are open to new alternatives and are more willing to take risks than older generations. However, many of them do not have the resources required or are unable to convince their families to embrace this change. Financial assistance, capacity-building, access to agricultural inputs (such as saplings and water resources), as well as value chain and market development are important elements needed to support young farmers in leading agricultural transformation.

KEY ACTIONS TO ADDRESS YOUTH AND IMPROVE THEIR LIVELIHOODS

The Forest Landscape Restoration 349 (FLR349) project was launched in 2018 as a nature-positive food production model that provides a pathway to protect nature and manage agriculture in ways that enhance the richness of biodiversity and restore the ecosystem functions of formerly degraded systems. Pilot model sites have been developed through a participatory approach, in collaboration with multiple stakeholders, including smallholder farmers, the Government, NGOs, social enterprises, business partners, retailers and cooperatives.

From 2018 to 2021, the project piloted activities in a total of 72 ha across the two northern provinces of Chiang Mai and Nan, involving 70 smallholder farming households from four villages. Each village involved the participation of at least five young farmers. Many smallholder farmer groups in the project were led by these young farmers, and they have played a key role in leading the change and supporting the development of a striving market for sustainable food products.

Building on its partnerships, including actors of food systems, the FLR349 project has implemented actions that target change in agricultural practices and value chain development:

- **Interventions and incentives** were provided to smallholder farming families to encourage them to turn their monoculture agricultural operations into small-scale diversified and more sustainable agricultural systems. These interventions included financial incentives of USD 390/ha/year for five consecutive years to give up monoculture and grow different perennial crops instead, as well as capacity-building and training workshops in sustainable and organic agriculture and irrigation.

- **A digital platform** for farm management, traceability and marketplace connectivity has been developed and is available to both farmers and consumers. The platform relies on open-source technologies, including artificial intelligence and remote weather sensing, in order to help smallholder farmers better manage their farms, and to connect farmers to consumers.
- **Sustainable local value chains and marketplaces** for products from the project have been developed through partnerships with local retailers. This has opened up opportunities to sell high-quality organic products to local food and retail markets, generating income for communities and enhancing livelihoods.
- **Market transformation in urban areas** was targeted through a partnership with the Central Retail Corporation, one of the largest retail conglomerates in the region. This collaboration has allowed partnering farmers to sell their products in central retailing premises and to urban consumers. The approach in urban areas relied on farmers' markets as catalysers to raise awareness on food system sustainability: farmers' markets offer ways of forging a direct connection between consumers and producers, stimulating exchange and interaction between both, and thereby promoting responsible consumption patterns among urban consumers.
- **Diversification of income sources** was encouraged by planting mixed crop varieties. Additionally, producers were encouraged to secure different income streams by planting vegetables and herbs for daily income; fruits for monthly or seasonal income; and forest trees for long-term income.
- **Nature-based solutions** were adopted to support forest landscape restoration and make small-scale agriculture easier, more resilient and more beneficial. The project helped young food producers to design organic and diversified agricultural systems for their families, which improve crop production, nutrient recycling and soil fertility, and result in lower harmful environmental impacts. Producers were encouraged to adopt a range of practices, including planting mixed perennial crops that would support or complement each other, and using microbes, compost and organic material cover to help restore soil heath. Swales were dug to stop soil erosion and retain water; banana and vetiver grass were planted to retain water and maintain soil health; and small reservoirs were created to store water. In addition to increasing resilience, these practices improve the capacities of agricultural systems to act as carbon sinks and water reservoirs and are thus aligned with climate mitigation efforts.

INFO BOX World Wide Fund for Nature (WWF)

World Wide Fund for Nature (formerly World Wildlife Fund) or WWF was created in 1961 and has been working on landscape, biodiversity and wildlife conservation in Thailand for 25 years. WWF Thailand's mission is to ensure support to conserve the country's rich biological diversity and increase the impact of its conservation action. One area of focus is food system transformation, as sustainable consumption and production can be key to conserving ecosystems and resources.

Source: Case study submission to the publication.

CHALLENGES AND LESSONS LEARNED

During the past two years, the project has helped to generate 40 percent higher incomes for the young producers. Climate impacts have continued to create challenges for them, as well as for the project: reduced water sources and prolonged droughts, along with more extreme and unpredictable climatic patterns, have affected productivity levels, tree planting and yields.

While young food producers may be able and willing to change and adapt their production practices for more sustainable ones, their parents are often not. Part of the difficulty in convincing these older producers stems from financial reasons: long-term use of agrochemicals has degraded soils and restoring fertility and productivity will be a long process. Income may be low during this recovery period and, with many of the smallholder farmers stuck in a vicious debt cycle, they are often reluctant to accept short-term losses. Moreover, small-scale organic agriculture requires more maintenance compared with monoculture agriculture that uses agrochemicals, and older farmers are often reluctant to increase their work burden.

However, increasing technical and financial support, coupled with greater youth engagement, have proved to be effective levers in encouraging older generations to accept new practices. During the project, farmers' markets were also found to be the perfect tool to help young farmers keep their fingers on the pulse of changing market demands. The face-to-face nature of farmers' markets provides an opportunity to make a direct connection between consumers and producers, to meet and discuss, exchange ideas for new product development, and to promote responsible consumption patterns among urban consumers.

HOW TO GET INVOLVED

Consumers can become involved in the project by supporting and adopting Sustainable Consumption and Production (SCP) practices in their daily lives. In their surroundings, they can help to raise awareness on the issue, and increase demand for SCP products. Increased awareness and demand will create more incentives and contribute to the young farmers' ability to convince other farmers to make a shift to small-scale sustainable agriculture. For more information, please visit: plantourfuture.world, which is expected to launch later in 2022.

Networks of custodians and guardians of native and creole seeds and community seed houses in Colombia

Written by Melissa Gomez Gil, Paola Laini, Beatriz Guimaraes Almeida, Anna Korzenszky and Guilherme Brady

In Colombia the share of youth not in education, employment or training (as % of youth population) is 24%.

Source: **World Bank.** 2020c. *Share of youth not in education, employment or training – Colombia.* **https://data.worldbank.org/indicator/SL.UEM.NEET.ZS?locations=CO**

REGIONAL AND SOCIOECONOMIC IMPACTS OF CLIMATE CHANGE ON YOUTH

Agriculture in Colombia is affected by climate change and also bears the consequences of armed conflicts, which have occurred in the country over the past five decades. In this context, young men and women are seen as key actors to reactivate agriculture and rural communities.

Colombia represents just 0.4 percent of global greenhouse gas emissions, and 71.3 percent of its domestic GHG emissions come from agriculture and land use (FAO, 2020d). Although youth face structural vulnerabilities – such as limited or no access to social protection schemes, land, credit and information, the increased use of chemical fertilizers, and the globalization of food marketing and distribution systems – they play a crucial role in building sustainable food systems. At the same time, however, young people are significantly more exposed to social and economic inequalities and to the impacts of climate change compared with other groups in Colombian society (HLPE, 2021). Extreme weather events cause the disruption of young people's assets and livelihoods, exacerbating youth poverty, unemployment and outmigration from rural areas. In addition to the effects of climate change, the condition of rural youth in Colombia has deteriorated in recent years due to land grabbing caused by industrial agriculture (ACCN, 2019)

Efforts by youth to protect biodiversity and become the custodians of creole and native seeds can help them to take ownership of agricultural production in their territories, recognize traditional and local practices and recipes, and strengthen the territorial identity via training and exchanges of knowledge and experiences. With this in mind, various communities in different regions of Colombia took initiatives to design, manage and implement strategies that would enable the protection and defence of local knowledge, identities, cultures and territories, including the diversification of native and creole seeds, the construction of community seed houses to host meetings, training and exchanges, and the activation of local markets through the development of participatory guarantee systems.

KEY ACTIONS TO ADDRESS YOUTH AND IMPROVE THEIR LIVELIHOODS

The initiative aims to protect native and creole quality seeds and create community houses to recover, gather and store those seeds, and share them with the local community and families. Each community house is adapted to the local territorial context. These native and creole seeds can better adapt to the continuously changing climatic conditions compared with commercial varieties, and can therefore guarantee more resilient food systems. Seed networks and schools fulfil multiple functions, while implementing a set of mutually reinforcing actions with the main objective of maintaining biodiversity at different levels. Activities include the production, reproduction, storage, selection, improvement, exchange and commercialization of native and creole seeds; education to ensure the dissemination of knowledge via schools and participatory research; strengthening of the local economy via local seed production; and advocacy activities for seed-related and other rural development policies:

- **Education.** Since 2021, in the framework of the Custodians and Guardians of Native, Creole and Agroecological Seeds initiative, MAELA and RSLC – with the support of Swissaid – have been implementing educational and training programmes in five regions of Colombia: the Caribbean, South, South-West, the Central and the Coffee regions[3]. During each training course, around 40 students – with priority given to youth and women – are trained to become local seed guardians, who protect biodiversity while applying agroecological practices, thereby contributing to local and territorial development. The courses offered by the network usually last two years. They include theoretical and practical sessions on the diverse functions and use of native and creole seeds, for food production, gastronomic use, and for rituals and traditional ceremonies, among others. The legal and policy aspects of seed production and exchange are also discussed. The training relies on the direct exchange between farmers (campesino-a-campesino) and respects the value of different traditional knowledge related to seeds (dialogo de saberes). For training purposes, the seed networks of Colombia have developed a Guide for native and creole seed custodian networks to support local seed production and the conservation of biological and cultural diversity, while incentivizing the establishment of new seed community houses. The guide provides practical information on (1) the recovery and production of native and creole seeds; (2) the concept, types and necessary infrastructure of community seed houses; and (3) local seed exchanges via loans, gifts and sales (Chacón and García, 2017).

[3] Colombia's coffee region (Eje Cafetero) is part of the Paisa region that lies in the northwest of the country.

- **Community and organizational strengthening.** The initiative supports and strengthens Indigenous, Afro-Colombian and peasant organizations, together with their communities, in order to ensure their access to and control over the natural resources available within their territories, and to promote biodiversity and sustainable agrifood systems.
- **Advocacy and policy engagement.** MAELA and RSLC carry out advocacy actions both at national and regional levels to improve environmental, agricultural and rural development policies and regulations, and to advance the realization of the rights of Indigenous, Afro-Colombian and peasant farmers. They promote the rights of peasants to produce, use and freely exchange their seeds, while protecting them from the expansion of industrial seeds.

As a significant achievement, the seed protection network Red nacional de agricultura familiar together with MAELA and other national organizations, has contributed to Resolution 464, adopted in December 2017 (see box below), which provides strategic guidelines for public policies related to family farming and their communities.

INFO BOX 1 Movimiento Agroecológico de América Latina y el Caribe (MAELA)

Since 2009, **the Movimiento Agroecológico de América Latina y el Caribe (MAELA)**, together with la Redes de Semillas Libres de Colombia (RSLC) – which group together farmers, Indigenous Peoples, women, youth, consumer organizations, environmental groups and universities – have been promoting agroecology, biodiversity conservation, and the protection of native and creole seeds and traditional local knowledge. MAELA is also a member of the International Planning Committee for Food Sovereignty (IPC), the global platform of small-scale food producers, rural workers' organizations and grassroots/community-based social movements that brings together more than 6 000 organizations and 300 million food producers to achieve food sovereignty at global, national and regional level.

Source: **Flores, S**. 2021. *MAELA* [online]. [Cited 25 February 2022]. **https://maela-agroecologia.org/**; **IPC.** 2021. *The IPC*. In: International Planning Committee for Food Sovereignty (IPC) [online]. [Cited 25 February 2022]. **www.foodsovereignty.org/the-ipc/**; and **Semillas de identidad.** 2021. *Inicio* - Semillas de identidad [online]. [Cited 25 February 2022]. **www.semillasdeidentidad.org/es/inicio**

INFO BOX 2 Resolution 464

Resolution 464 (Lineamientos estratégicos de política pública para la Agricultura Campesina, Familiar y Comunitaria) calls for integrated and well-coordinated state actions to strengthen the social, economic and policy-making capacities of family farmers, their organizations and communities. Moreover, the Resolution prioritizes the participation of young people in policy-making processes to give visibility to their needs and capacities (Article 9.18). The Resolution defines "farmer's seeds" (Article 9.2) and highlights the key role of local communities in conserving and protecting native and creole seeds. Furthermore, to support young men and women, it encourages state actors to apply an intergenerational approach (Article 9.16) when working with family farmers, both in the development of farming and non-farming activities (such as agritourism).

Source: **Ministero de Agricultura y Desarrollo Rural.** 2017. *Rsolución Número 000464 de 2017.* Ministero de Agricultura y Desarrollo Rural. 179 pp.

CHALLENGES AND LESSONS LEARNED

The dissemination of practical and theoretical aspects of traditional seed systems has contributed to the survival of the local, ancestral culture and its adaptation to today's reality. Through dedicated programmes offered by the initiative, rural youth were able to both improve their capacities in seed conservation and find new employment opportunities in their territories, thereby contributing to the generational sustainability of family farming and rural communities. It was found that public policies and legal regulations are essential to support family farmers and their communities in conserving biodiversity, and its sustainable use, exchange and dynamic management. In particular, policies to support rural youth are needed to guarantee environmentally sustainable and socially just food systems. While community- and youth-led initiatives (such as seed houses, training and participatory research centres) actively promoted the role of native and creole seed species in biodiversity protection and climate change mitigation, public policies and state interventions have not sufficiently recognized and supported their proven value. Legal actions need to be taken at international, national and regional levels to recognize and respect the rights of peasants and Indigenous Peoples to their seeds. Implementation of the United Nation Declaration on the Rights of Peasants and Other People Working in Rural Areas was a first step in this direction (UNHCR, 2018).Finally, the involvement of young people in organized groups – in this case, in the seed networks, sharing of knowledge and practices, and in building an enabling policy environment by promoting Resolution 464 – proved critical to guaranteeing inclusivity and the generational sustainability of future agrifood systems.

HOW TO GET INVOLVED

Young people can become members of MAELA through the Youth Working Group (YWG) of the International Planning Committee for Food Sovereignty (IPC), which brings together youth from 18 small-scale food producers' and Indigenous Peoples organizations under the umbrella of the IPC. Drawn from different sectors and backgrounds, the YWG members join forces and experiences, visions and knowledge to consolidate a youth-driven branch of the food sovereignty movement. This youth group works closely with others, as well as with FAO, to enhance youth engagement in rural areas and to support the generational sustainability of food systems, especially in the context of the United Nations Decade of Family Farming. The YWG is involved in advocacy action, and has recently documented youth-driven initiatives in food systems and rural development. People can also become involved and support projects of young small-scale food producers by contacting the platform of the seed networks in Colombia (Semillas de identidad, 2021), or via the **website** of the IPC.

Strengthening cooperation for food security and better livelihoods in rural Senegal

Written by Mélanie Morel and Maïdie Sinitambirivoutin

The unemployment rate in Senegal is around 16%.

More than 60% of the country's population is below 24 years of age.

Source: **FAO.** 2020e. *Emploi rural des jeunes et systèmes agroalimentaires au Sénégal: Analyse rapide du contexte.* Rome. **www.fao.org/documents/card/fr/c/CA7411FR/**

REGIONAL AND SOCIOECONOMIC IMPACTS OF CLIMATE CHANGE ON YOUTH

In common with other countries in the Sahel, agricultural productivity in Senegal is being critically hindered by episodes of drought, drastic changes in rainfall patterns, increased temperatures, soil salinization and land degradation, threatening the livelihoods and food security of rural populations. Nearly half of the rural population is employed, often informally, in the agriculture sector, which is one of the main contributors to the country's economy (ANSD, 2019). Most of the food produced (millet and vegetables) comes from small family farms that rely on rainfed agriculture to meet their nutritional and financial needs. Along with unsustainable practices and overexploitation, climate change is one of the main causes of land degradation and desertification, which both dramatically impact yields and lead to frequent harvest losses in the semi-arid lands of Senegal.

For younger generations, these increasingly tough climatic conditions pose yet another obstacle to making a living in agriculture. With poor access to land and loans, youth also lack technical support and knowledge, especially information related to climate change adaptation and resilience in agriculture. Young girls are especially affected by these gaps, due to persistent gender inequalities. Women and girls often contribute to agriculture as a workforce, but seldom access decision-making positions or control over resources. As an example, an average 80 percent of agricultural plots are controlled by men (DAPSA, 2020; Regional Office for Africa, 2018). Due to these challenges, youth are reluctant to take over family farms and are moving to cities in the hope of finding jobs with higher wages.

KEY ACTIONS TO ADDRESS YOUTH AND IMPROVE THEIR LIVELIHOODS

The Community of Practice (CoP) on 'Climate change resilience for food security and nutrition in Senegal' is an exchange platform aimed at facilitating exchanges of successful approaches to tackle production, access to markets, and knowledge on resilient and sustainable practices and strengthen cooperation between members. At each meeting, members and invited participants

have presented the results and lessons learned of field initiatives targeting support to rural youth. Ensuing discussions have focused on highlighting key points of success and replicability. CoP discussions, where diverse projects were discussed and presented, highlighted five key practices to prioritize when supporting youth in agriculture:

- **Restoring a positive perception of agriculture through an intergenerational approach**. In the Casamance region (southern Senegal), SOCODEVI implements Farmer Field Schools (FFS) to train beekeepers in resilient practices. Intergenerational approaches to capacity-building have proved successful in motivating youth to stay in agriculture, notably by fostering family support. To ensure the success of the intergenerational approach, farmers are required to participate in pairs of elder and younger members of the same family, or larger groups of farmers. Ensuring the recognition of agriculture-related occupations is key to integrating more youth in the agriculture sector and can be achieved by increasing the number of mentors and role models capable of positively inspiring young people.
- **Prioritizing continuous support that encompasses all stages of a business project over short-term initiatives.** In the Thiès region (central Senegal), the NGO Carrefour International partners with Réseau des Organisations Paysannes et Pastorales du Sénégal (RESOPP), a network of farmers' organizations, to implement capacity-building projects. Fostering youth membership within RESOPP has enabled young beneficiaries to be provided with continuous support throughout and beyond their entry in small-scale production, while also allowing them to retain their autonomy (RESOPP, 2016).
- **Placing youth at the heart of projects.** At the Conseil national de concertation et de coopération des ruraux (CNCR) – a national farmers' organization – a Youth College was created to provide young people with a dedicated space to engage with CNCR, practise advocacy and develop projects from youth to youth. The Youth College has enabled youth to have meaningful representation within CNCR and has provided young farmers with continuous support.

- **Supporting access to land and finance mechanisms.** The Youth College of CNCR has implemented two projects to help youth develop agricultural activities: the Land and Peace project, which supported 30 youths in obtaining land and setting up their farms (COSPE Onlus, 2018), and an incubator for youth to develop poultry farming, which supported 100 young producers (CNCR, 2017). A particular feature of both projects was their approach to combining extension services and land or funding allocation, to enable access to plots. Embedding these projects within the larger CNCR network enabled them to be implemented with the support of public institutions and opened opportunities for institutionalizing the approach.
- **Integrating the differentiated needs of young girls and women.** Two strategies have been implemented to better address gender inequalities in local capacity-building projects:
    - Adapting selection criteria of beneficiaries to the project objectives: As in the case of training sessions to foster intergenerational cooperation, SOCODEVI asked farmers to attend FFS in pairs with a family member of the opposite sex. This strategy has helped to reduce gender inequalities and conflicts in families (FAO, 2022).
    - Training community members to take over on advocacy: In the Matam region, the NGO CECI included capacity-building on advocacy and awareness-raising in its training, aimed at equipping women and youth with a stronger voice to express their needs in their communities. The NGO also supported the creation of committees specializing in advocacy within farmers' organizations, which helped to create sustainable and autonomous dynamics to support women and youth (CECI, 2021).

INFO BOX 1 Communities of practice (CoP)

Communities of practice (CoP) are informal networks aimed at facilitating exchanges of knowledge and experience. The CoP on 'Climate change resilience for food security and nutrition in Senegal' emerged in 2017 with the aim of strengthening cooperation between field actors engaged in rural areas and providing an exchange platform on important issues related to climate and the inclusion of women and youth.

Source: Case study submission to the publication

INFO BOX 2 FAO–NGO–Government of Québec partnership

It brings together six Canadian NGOs working in Senegal (the Centre d'étude et de coopération internationale (CECI); Carrefour International; Mer et Monde; Société de coopération pour le développement international (SOCODEVI); Solidarité Union Coopération; and UPA Développement international. Local NGOs and research partners such as Université Laval, McGill University and the Ouranos consortium are also participating. The CoP receives support from FAO and the Government of Québec through the Strengthening Agricultural Adaptation (SAGA) project.

Source: Case study submission to the publication

CHALLENGES AND LESSONS LEARNED

Overall, the CoP identified three key elements that ensured its success: (i) a strong organizational lead; (ii) detailed mapping of the activities of all members, which ensured the alignment of the CoP with their expectations; and (iii), technical and financial support from FAO and the Government of Québec, which removed practical barriers that could have discouraged members and made it possible to formalize the objectives and rules of the CoP through an official agreement issued by FAO.

As for the challenges regarding youth engagement, members of the CoP stressed that access to land was still a major obstacle, preventing farmers from investing in projects. Land ownership, along with careful selection of beneficiaries, were identified as key factors to ensure lasting results following capacity-building projects. CoP members also stressed the role of government in creating an enabling environment for youth and commended efforts already made in that direction, particularly through the creation of a National Agency for Youth Employment, to support Senegalese youth in obtaining applicable skills and developing their careers.

HOW TO GET INVOLVED

CoPs are informal networks of people whose fields of expertise are complementary and who are involved in a common activity; they can be created anywhere and take different formats. More actors can become involved in the discussion groups, and local organizations, research institutions and academia are particularly encouraged to engage. Different entities can start discussion groups in their countries and create a network of regional groups, to integrate new members. An online platform can be created, to allow access to the CoP's main results and enable inputs from external parties to feed the CoP's discussions and disseminate its main outcomes.

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Youth at the centre

Within the global labour force, youth have a higher incidence than adults of vulnerable employment. In informal occupations, young people are more likely to lack decent working conditions, adequate social security and a voice through effective representation in workers' unions or producer organizations. In addition, youth face serious barriers in accessing land, credit and other productive assets to establish their own livelihoods, and are often deprived of opportunities to build relevant skills. At the same time, today's young generation is on the frontline of the transformation of agriculture and food production systems. Youth are increasingly having to coping with the negative effects of environmental and climate change, which are likely to accelerate and intensify during their lifetimes (FAO, 2014; HLPE, 2021).

Facilitating and incentivizing youth engagement in agrifood systems by targeting the barriers that youth face has the potential to drive the innovation needed for growth and increased employment opportunities, and reduce rural poverty and food insecurity for youth and adults alike. Young generations are more open to learning and to using knowledge on environmental sustainability and resilient farming practices, leading to the integration of these benefits into their families' and communities' behaviours. Focusing on youth as main beneficiaries must be an important component of strategies to support the development of the next generation of food producers, and will be critical to ensuring a transition towards sustainable agrifood systems. This approach also implies more tailored initiatives to address youth needs and advocate for system changes that are more engaging and supportive of younger generations (FAO, 2014; HLPE, 2021).

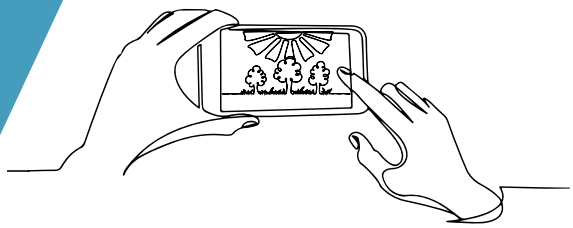
The following case studies highlight how approaches and initiatives can introduce elements to empower youth from an early age, throughout young people's first encounters with labour markets. The experience from Kenya, in particular, showcases the relevance of using digital technologies to reach youth in remote areas. In Madagascar, projects implemented have highlighted the key role of farmers' organizations in providing continuous support to young farmers in the first years of their career.

Starting at a young age to build small-scale food producer resilience in rural Kenya

Written by Zoë Kremer and Chloe Ford-Welman

According to Kenya's 2019 Population and Census, 75% of the population is under the age of 35.

The Kenya National Bureau of Statistics 2018 estimated national unemployment at 7.4%, youth unemployment (20–24 years) at19.2%, and females constituting 64.5% of the unemployed.



Source: **Trizer, M.** 2019. *Kenya Population and Housing Census Results.* **www.knbs.or.ke/2019-kenya-population-and-housing-census-results**, and **FAO.** 2019c. *Rural youth employment and agri-food systems in Kenya: A rapid context analysis.* Rome. **www.fao.org/documents/card/en/c/CA7341EN/**

REGIONAL AND SOCIOECONOMIC IMPACTS OF CLIMATE CHANGE ON YOUTH

Across most parts of Africa, changing climate patterns coupled with a history of unsustainable farming practices have exhausted the soil and left the land unfarmable (Wynants *et al.*, 2019). According to projections, in the coming years Kenya is likely to experience higher temperatures, with long and intense periods of drought during the warmer months and erratic rainfall during the wet months (Niang *et al.*, 2014). This could result in major reductions in crop yields and other areas of agricultural productivity, which are Kenya's main areas of economic activity (Hanjra and Qureshi, 2010).

With 75 percent of the Kenyan population under the age of 35 (Trizer, 2019), youth will be in the forefront of the consequences of climate change. Although youth unemployment rose to 13 percent in 2020 (World Bank, 2020b), agriculture is increasingly being discarded as a viable career path, notably due to the threat posed by climate change to farmers' livelihoods. Besides, despite farming being a fundamental part of Kenyan society, training and education on resilient agriculture remain underdeveloped in school curricula. In parallel, the penetration of digital and mobile technology is opening up new opportunities for youth by increasing connectivity, productivity and access to information (GSMA, 2019). Exploiting these technologies to fill the education gap could help to re-engage youth in agriculture.

KEY ACTIONS TO ADDRESS YOUTH AND IMPROVE THEIR LIVELIHOODS

The Haller Foundation teaches young people in Kenya about the importance of sustainable farming and protecting the environment through two initiatives: the **Youth Farming Initiative**, which teaches sustainable practices to children from a young age, and the **Haller Farmers app**, which harnesses the power of digital technology to provide advisory services to young farmers on a large scale. Both initiatives have the objective of better preparing youth for any unforeseen climate-related events, as well as helping them to earn an income and contribute to family livelihoods.

Since 2017, Haller's Youth Farming Initiative has targeted pupils aged 10 to 15, teaching them the basic principles of farming, nutrition and income generation. Once a week, 20 to 30 pupils from four separate schools visit Haller's Mtopanga Demonstration Farm. The programme runs for 5 months twice a year, excluding school holidays. Each school group is allocated a plot of land to manage, and the children are educated on the importance of sustainable farming, resource management, and the impact of pests. Activities and tasks include making compost using available resources (at zero cost), land preparation, creating nursery beds, planting and spacing crops, making their own organic pesticide and other basic agribusiness skills. Haller encourages the planting of local and indigenous crops, as they are better suited to the environment and more sustainable than outsourcing seeds. Anything that the children harvest can be taken home to their families which, Haller has noticed, helps to motivate the youngsters and keep them engaged.

The pupils also take trips to help clear local rivers and beaches of debris and rubbish. Used plastic water bottles are collected and brought back to the farm, where the children repurpose them as plant pots. These trips help to raise awareness on environmental issues and have also been stimulated by children's creative thinking: one student took the initiative to build an entire greenhouse out of old plastic water bottles.

Replication of the initiative is ensured through a 'training-of-trainers' approach, which equips teachers from partnering schools with the tools, knowledge and skills to supervise pupils on the Demonstration Farm and enables the project to be sustained by local schools themselves.

To further support agricultural training, the Haller Farmers app was developed in 2014. The main purpose of the app is to scale up action to empower farming communities across the globe

and reach small-scale food producers with whom the Haller Kenya team cannot directly make contact. It is free to download and provides rural farming communities with affordable, organic and environmentally-friendly farming techniques. This digital tool also connects farmers across the world via a messaging platform known as the Noticeboard. Thanks to the Square Plot Feature, the app provides a visual representation of the ideal plot of land, highlighting efficient land use through innovative systems and processes. Although the app is aimed at all ages of rural East African farmers, its latest version also includes a specific section on Youth Farming, which provides agricultural tips and advice specifically aimed at youngsters aged between 12 and 17. Rural youth have also been targeted as the priority audience through social media marketing, a locally managed App Ambassador Scheme, and facilitator training.

INFO BOX The Haller Foundation

The Haller Foundation is registered as a UK-based charity and Kenyan NGO that targets the education of rural smallholder farmers by sharing sustainable, pioneering farming techniques to improve food production. Key stakeholders for the Youth farming initiative include the Kenyan Ministry of Educatoion and the Bamburi Cement Company, which are long-term supporting partners. Funding is from HCD Memorial Fund, Tempus forGoods and Mondrian Investiment Partners. The Baobab Trust and Haller Kenya azre responsible for implementation. The main actors in the Haller Farmers app are the Kenyan Ministry of Agriculture and Fisheries, which provides continuous advice and support, Pearlfisher, which has backed the app branding and design, and the Red C, which has supported development.

Link to download Haller Farmers app:
https://play.google.com/store/apps/details?id=org.haller.app
https://apps.apple.com/gb/app/haller-farmers/id1566321861

Source: The Haller Foundation. **https://haller.org.uk**

CHALLENGES AND LESSONS LEARNED

The original goal of the Youth Farming Initiative was to use results from Haller's Demonstration Farm to encourage rural schools to set up their own training plots within school grounds. However, the lack of school resources, the informal nature of land rights in many areas of coastal Kenya, and the lack of safety and security of the required infrastructure have all proved to be initial hurdles. The project is still based at the youth farming school site at Haller's Mtopanga Demonstration Farm, to which pupils must travel. However, support to teachers in their attempts to build in-house programmes continues.

The main purpose of the Haller Farmers app is to scale up action to empower farming communities across the globe and reach small-scale food producers with whom the Haller Kenya team are not able to make direct contact. Looking to the future, Haller will make continuous technological and content-related developments to the app each six-month period, and is exploring partnerships with

like-minded NGOs across the globe to replicate and tailor the Haller Farmers App code, content and design to different audiences' needs. Although the current content targets East African countries, the methods and techniques can be replicated worldwide.

Despite the technological revolution that is undoubtedly taking place in Africa, there is still limited access to technology, electricity and connection in rural areas. To overcome these challenges, Haller reached out and forged relationships with two partners: Deciwatt, for its human-powered electricity and light device, and Mara Phones, for its affordable smartphones made in Africa. Both companies are supporting Haller to facilitate access to these two technologies for the targeted communities.

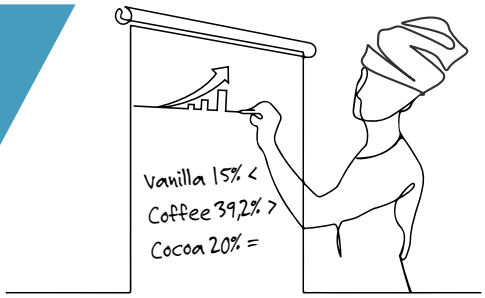
HOW TO GET INVOLVED

Individuals – of any age – can download the Haller Farmers app free from the Google Play Store or Apple Store. In so doing, consumers will have access to a wealth of agricultural information with techniques that can be practised anywhere in the world. As a result, people with little prior knowledge can begin farming sustainably, growing food for their families, improving livelihoods and inspiring the wider community to adopt similar techniques, taking steps towards a more sustainable future for people and nature. People can also support the project directly by donating funds through the Haller **website** (Haller, 2021).

Addressing the young through training, investment and inclusion in decision-making – Madagascar

Written by Flore Ferraro (Afdi), Fanja Ralamboranto (Afdi Madagascar), Julie Lecomte (Afdi Madagascar) and Gérard Andriamandimby (SOA)

In Madagascar, young farming households own 1.5 ha of land compared with 2.16 ha owned by elders.



Source: **B. S. Andriamanalina, P. Burnod, H. Rakotomalala, S. Deschênes**. 2014. *Rural youth, agriculture and access to land: The Case of Madagascar.* Conference on Land policy in Africa. "The next decade of land policy in Africa: ensuring agricultural development and inclusive growth".

REGIONAL AND SOCIOECONOMIC IMPACTS OF CLIMATE CHANGE ON YOUTH

Madagascar currently ranks fifth in the world among the countries most exposed to climate risks (World Bank, 2015). The effects of climate change observed in Madagascar vary according to regions (Republic of Madagascar, 2019), but are globally characterized by higher temperatures, a reduction of rainfall and an increase in winds. When combined with the effects of poor cultivation practices, these changes have alarming consequences, including a reduction in soil fertility, as well as greater water scarcity and pest proliferation. These factors are leading to a decline in agricultural production and yields, growing food insecurity and the displacement of vulnerable populations, including forced migration.

In addition to climate-induced challenges, the traditional hierarchical structure of Malagasy society is a critical barrier to the meaningful engagement of younger generations of farmers. In this country, youth are mostly limited to the position of family helper and are employed informally, and access to land is limited (Burnod *et al.*, 2016). Cultural barriers to youth employment combined with climate change are increasing inequalities and hardships for young food producers, and the need for innovation in agricultural sectors is considerable.

KEY ACTIONS TO ADDRESS YOUTH AND IMPROVE THEIR LIVELIHOODS

Réseau SOA partners with farmers' organizations to support their young members. Since 2014, more than 720 youth from 11 FOs have benefited from Réseau SOA's support, through:

- ↗ the creation of a local council for the acquisition of skills (from the development of their professional project to technical training, including through visits and exchanges with innovative farms), over a period of three years;
- ↗ financial assistance and contacts with financial institutions, to facilitate access to investment;

- ↗ support to young people in FOs for better professional integration (access to FO economic services, training targeting leadership and management and organization of consultations with young people).

In addition, in partnership with agri-agency Afdi, Réseau SOA has provided 141 young people (on average 29 years-old, 44 percent of them young women) with financial assistance of almost MGA 700 000 (EUR 175) each to develop their farming project, mainly centred around chicken farming. This assistance was provided to three organizations from the Diana Region: the Union of cooperatives Lazan'i Sambirano, whose members are cocoa producers; in Ambanja, the Mahavavy Tia Fandrosoana mainly involving rice producers in Ambilobe; and the Union Matanjaka in Diego -Suarez, whose members engage in rice, as well as vegetable and poultry production.

The youth initiative developed several types of training aimed at diversifying farmers' incomes and increasing their resilience. In particular, the training equipped farmers to adopt practices that included crop-livestock integration, agroforestry, and rotation diversification with crop associations. Farmers also received capacity-building in on-farm management and entrepreneurship. At the end of the training, farmers were more capable of identifying and treating plant diseases and pest invasions, due to better use of inputs and knowledge of integrated pest management techniques.

As part of the youth initiative, reforestation activities are being promoted by new agroforestry systems based on cocoa, vanilla, fruit trees and forests. The replanting of 2 000 cocoa plants of the Criollo variety was carried out by 77 producers, including 16 women and 27 young people, who have undergone training in the various planting techniques. Indeed, agroforestry activities have been strongly promoted, as a practice that strengthens livelihood diversification through the sale of fruit and wood. Exchange visits with farmers already practising agroforestry have been organized, enabling the sharing of experiences in terms of income, crop protection and improved soil fertility, among others.

INFO BOX **Réseau Syndacat des Organisations Agricoles (SOA) Agricolteurs francais et développement international (Afdi) partnership**

The Réseau Syndacat des Organisations Agricoles (SOA) is a network of farmers' organizations (FOs) that operates in 11 regions of Madagascar. Their activities mainly target the defence of farmers' interest in agricultural policies, capacity-building for farmers and strengthening of the organization's network through improved communication. The réseau SOA has been in partnership with the NGO Agricolteurs francais et développement international (Afdi) since 2003.

Source: Case study submission to the publication

CHALLENGES AND LESSONS LEARNED

The integration of young people into Madagascar's agriculture sector faced a number of challenges. Firstly, the profession of a farmer is still poorly rated in society and is often considered a default option. As such, making a career in agriculture an attractive proposition is a prerequisite for success.

Another challenge lies in strengthening intergenerational dialogue, so that older people pay more attention to younger ones, and encourage them in their projects.

Facilitating access to land has also constituted a hurdle, and overcoming this obstacle will be a fundamental precondition for youth to launch their agrifood projects.

The key lessons learned from this initiative included the following:

- Unlike projects and programmes, farmers' organizations have a long time horizon; as such, they offer long-term services to farmers, through effective mechanisms designed to provide ongoing support. They also provide enabling environments for farmers and youth to create and pilot their own projects, which paves the way for greater commitment from farmers and a closer alignment of projects with farmers' needs, while facilitating professional integration.
- The FOs have defined an installation strategy (intervention area, identification of the farmers' needs and resources, preferred cultivation methods, etc.) to better support young farmers. This essential work was carried out on the basis of the results of surveys conducted among the FOs' farms.
- The grassroots groups of FOs are made responsible for identifying the young people for whom they vouch, so that technicians can support these in developing their operating projects. This commitment reduces the risk of young people withdrawing once selected.
- Advisors from the FOs meet supported young farmers on their farm once a month for the first year, then gradually on a less frequent basis over the following two years. This personalized long-term follow-up is complementary to training and group discussions and essential to give young people confidence as managers.

↗ Overall, the youth support system has a significant effect on increasing income compared with the cost of supporting young people. The observed increase in income was similar in all regions. In general, the average amount of revenue earned by young people after two years of support was four times the initial financial assistance of EURO 175.

HOW TO GET INVOLVED

It is essential that international organizations, NGOs and donors place more trust in FOs to support the integration of young people in agriculture and provide them with long-term prospects for the future. This model is entirely replicable in other communities and in other countries, subject to the close involvement of farmers' organizations.

Creating resilient livelihoods for youth in small-scale food production

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6

Conclusion

Climate change poses significant threats to global food security. While small-scale food producers account for a substantial proportion of food production and generation, they face disproportional vulnerability to climate change, which is often not sufficiently addressed in policies and programmes. A number of recent interventions have proved to be ground-breaking starting points to foster more resilient livelihoods in the agrifood system. Notable examples include the KJWA decision under the UNFCCC, the United Nations Decade of Family Farming 2019–2028, and the United Nations Declaration on the Rights of Peasants and Other People Working in Rural Areas. Complementary actions need to be taken in policy and programming to ensure generational renewal in small-scale food production and the food security of current and future generations.

Compared with their adult counterparts, young producers face even more challenging production constraints due to lack of access to basic services, social protection, markets, natural and productive resources, information, knowledge and policies. Climate change exacerbates these constraints, as youth lack information and skills related to adaptation and mitigation. Due to the above-mentioned vulnerabilities and overall limited capacities of agrifood systems to generate decent employment opportunities, youth unemployment and underemployment is often significant in rural areas, and youth often migrate to urban areas in the hope of better livelihoods and job opportunities. In the future, this rural exodus is expected to intensify, especially in many African and Asian countries where the population is increasingly young. Young women and girls face additional challenges related to gender inequalities and cultural norms, coupled with heavy workloads connected to these norms and roles, which place them in positions of even more vulnerability to climate change and at greater risk of food insecurity.

The case studies described in this publication are based on three identified approaches to youth empowerment and inclusion. Firstly, jointly addressing women and youth's specific challenges can help to temper or erase gender-related inequalities between young girls and boys from a young age, and can hinder the formation of entrenched gender roles. Secondly, fostering intergenerational exchanges, collaboration in capacity-building and shared roles and responsibilities can be a valuable experience for both youth and older generations. It also makes a significant contribution to the transmission of traditional knowledge and the adoption of innovative practices. Thirdly, it is important to design projects around young people and their age-specific challenges. Support to youth engagement in agriculture can begin in childhood. A good starting point is raising awareness in children from an early age of sound nutrition principles and the importance of sustainable production. As they develop, continuous support can be provided for their productive involvement in local agrifood systems, particularly small-scale food production, as farmers, entrepreneurs, workers, leaders, innovators and change-makers.

The publication showcases examples of how the inclusion and empowerment of youth in small-scale food production can be put into practice by NGOs, governments, international policy-makers and organizations, such as FAO. Capacity-building, as well as formal and non-formal education, were found to be key components of all the initiatives that contributed to this collection of success stories. For this purpose, the organizations used in-person training by experts, as well as intragenerational and intergenerational exchanges to revive traditional practices or introduce modern technologies. The diversification and combination of income-generating opportunities and increased biodiversity are some other components that have proved successful to making livelihoods more resilient, as described in the case studies. Furthermore, the representation of youth in decision-making processes, organizations, unions and associations was revealed to be important, to ensure that young people are able to advocate for their needs and rights. Often, savings groups enabled young people to set in place their own measures for social protection, when the necessary policies to ensure access to this type of service, as well as finance, were not in place. Nevertheless, none of these actions can be successful without clear policies to ensure that including and empowering youth in agrifood systems is given high priority.

The publication's above-mentioned findings offer an opportunity to inform and inspire a potential KJWA outcome at COP27 and corresponding new policies and programmes that target the need for long-term investments in the design of inclusive and climate-resilient agricultural systems, as expressed in the conclusion of KJWA by SBI and SBSTA in 2021. This conclusion marked an important first step towards actions and policies designed to create resilient livelihoods for youth in small-scale food production and ensure food security for current and future generations.

Based on the publication's conclusions, key recommendations for KJWA negotiators, other actors involved in the UNFCCC, as well as international, national and regional actors in policy-making and programming were formulated. Listed below, these aim to promote activities that will include and empower young small-scale food producers in programming and policy-making for a successful generational transition and future food security:

- **Create new policies and programmes to ensure the inclusion and meaningful engagement of youth and include young people in their design and implementation.** The most successful way to target the needs of local youth in agrifood systems is to consult them in both the design and implementation of policies and programmes.
- **Facilitate the representation of youth in farmers' organizations and unions, as well as in other formal and informal collective action groups.** In most developing countries, youth make up a large proportion of the population, and are agents of societal change and the improvement of human rights, but in order to advocate for the necessary change, they need a seat at the table.
- **Provide access to capacity-building and formal and non-formal education with relation to resilient food production and generation.** Many young people would like to maintain their livelihoods in the agrifood system, but lack the knowledge and skills to adapt to changing climate conditions.

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- **Promote intergenerational and intragenerational knowledge exchange and collaboration for sustainable and endogenous innovations.** Often, the knowledge and skills are already available in the family, region or country and people just need to be brought together to learn from each other and complement new practices and technologies with traditional knowledge for more resilient livelihoods.
- **Systematically evaluate policy and programme impacts, from their conception, through a disaggregated framework that highlights their effects on groups in vulnerable situations, such as Indigenous Peoples, women and youth.** The development of disaggregated frameworks to evaluate the impacts of new policies and programmes on groups in vulnerable situations is important, to ensure that the desired impacts can be achieved.
- **Ensure that knowledge is accessible to all age groups, ethnic groups, and genders, for example, by integrating modules to introduce nutrition and food production in schools or harnessing the development of digital services, to enable access to daily climate information and knowledge of resilient practices.** Young girls and women, in particular, often struggle with accessing information that is online or available through the school system, due to their differentiated role in local societies.
- **Make financial mechanisms available to be accessed by youth in the agrifood systems, in particular to support their installation as young farmers and the development of business projects related to food production and marketing.** Young people are often considered as a higher risk by the financial sector, which makes it even harder for them to access the necessary financial support to create new or more resilient livelihoods in the agrifood system.
- **Increase financial flows to activities focusing on youth aimed at the adaptation and mitigation of climate change.** Young people need to be prioritized in international agreements and by international financial institutions, to ensure a generational transition in agrifood systems and future food security.

- ↗ **Create culturally appropriate social protection mechanisms to target youth in small-scale food production, to ensure that in times of crisis, they receive the necessary support to maintain their livelihoods in agrifood systems.** Young people have specific needs regarding appropriate protection mechanisms to maintain livelihood resilience in the event of a climatic or socioeconomic shocks.

There are substantial opportunities for national and international agrifood systems actors to become involved in creating resilient livelihoods for youth, as portrayed in this publication, especially by providing the necessary finances to scale up and complement the actions taken. Forging local partnerships with NGOs, universities and other stakeholders is of the utmost importance, to ensure a systemic approach that integrates agronomic, social and environmental components to provide holistic solutions to the main challenges identified, rather than working in silos. For their part, consumers can become involved by sustainably consuming local products and being careful to select, where possible, a balanced and nutritious diet.

With an ageing farming population and an urgent need to transform how food is produced and consumed, young generations need to take on an active role in agrifood systems. Recognizing their key contributions as driving forces of innovation and future overseers of food production is an imperative, so that policies, finance and capacity-building programmes can be set in place as a foundation for the creation of resilient livelihoods for youth.

Creating resilient livelihoods for youth in small-scale food production

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Glossary

For the purpose of this publication, the terminology is defined or explained as follows:

FOOD SECURITY
"Food security, although having a central role in the KJWA, is not defined in the decision. When used by FAO, the term draws on the World Food Summit definition (1996): "Food security exists when all people, at all times, have physical and economic access to sufficient safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life." From this definition, four main dimensions of food security are identified: food availability, food access, utilization and stability"(Chiriacò *et al.*, 2018b).

GENERATIONAL SUSTAINABILITY
This publication draws attention to an increasingly important aspect of sustainable development – the significance of intergenerational collaboration in the fight against hunger and malnutrition. The concept refers to the continuously evolving and dynamic relation between generations as a vital driving force of development. It underlines the need to maintain the balance between farming generations and promote the exchange of knowledge, resources and livelihood strategies applied by the different generations in a given context as preconditions for sustainable and successful innovations in agrifood systems (FAO and IFAD, 2019).

RESILIENCE
Resilience is "the capacity of social, economic and environmental systems to cope with a hazardous event or trend or disturbance, responding or reorganizing in ways that maintain their essential function, identity and structure while also maintaining the capacity for adaptation, learning and transformation" (IPCC, 2018).

SMALL-SCALE FOOD PRODUCTION
According to the definition in SDG 2, a small-scale food producer is a producer with less than 5 ha of operated land and/or 5 tropical livestock units and/or those who make up 40 percent of the population who hold the smallest agricultural income in a country (FAO, 2018b). The threshold size for defining a small-scale farm varies according to sources and is context-dependent: generally, small-scale farms are considered small in comparison to larger, often industrial production systems (HLPE, 2013). A generally applicable characteristic of small-scale production is its main reliance on family labour. In family farming[1] 95 percent of farm units have an area of less than 5 ha and more than 98 percent of farms have less than 20 ha (HLPE, 2013). In this publication, the focus is on a broad definition of food production on a small scale, which is inclusive of smallholder farming, food generation and production by Indigenous Peoples, or other definitions or approaches of food production on a small-scale level.

[1] According to the UNDFF concept, family farming is a means of organizing agricultural, forestry, fisheries, pastoral an aquaculture production that is managed and operated by a family, and is primarily reliant on the family labour of both women and men (FAO and IFAD, 2019).

SUSTAINABLE AGRIFOOD SYSTEM

"A sustainable food system is one that delivers food security and nutrition for all in such a way that the economic, social and environmental basis to generate food security and nutrition for future generations is not compromised. This means that it is profitable throughout, ensuring economic sustainability, it has broad-based benefits for society, securing social sustainability, and that it has a positive or neutral impact on the natural resource environment, safeguarding the sustainability of the environment" (FAO, 2020a).

THE KORONIVIA JOINT WORK ON AGRICULTURE

The 23rd Conference of the Parties (COP23) to the United Nations Framework Convention on Climate Change (UNFCCC) concluded with a landmark decision recognizing the role of agriculture in tackling climate change. Decision 4/CP.23 on the Koronivia Joint Work on Agriculture (KJWA) requests Subsidiary Bodies under the Convention to jointly address issues related to agriculture, taking into consideration the vulnerabilities of agriculture to climate change and approaches to addressing food security (Drieux *et al*., 2019).

UNITED NATIONS DECADE OF FAMILY FARMING 2019–2028

In 2017, the United Nations proclaimed the United Nations Decade of Family Farming 2019–202, to provide the international community with an opportunity to address family farming from a holistic perspective, in order to achieve substantial transformations in current food systems and thus achieve the 2030 Agenda for Sustainable Development. The UNDFF provides a framework to develop, improve and implement public policies and investments to support family farming (FAO and IFAD, 2019).

YOUTH

"Youth is best understood as a period of transition from the dependence of childhood to adulthood's independence. That's why, as a category, youth is more fluid than other fixed age groups" (UN DESA, 2018). Since this publication highlights efforts to support youth in different geographical locations, and in diverse cultural and socioeconomic circumstances, youth has been defined as a person with a maximum age of 35 years. This definition includes both children (under 15) and youth. Although 15 is considered as the age limit for children, it should be noted that youth between the ages of 15 and 17 fall in between the definitions of children and youth. This publication understands youth as a dynamically changing and multidimensional and heterogeneous group, and beyond the chronological age, it considers other intersecting factors that define youth and their relation to food systems, including gender, class, wealth, health, ethnicity, religious affiliation, migrant/non-migrant status or their (rural/urban) location. Youth, in the case studies collected here, are defined according to their position in relation to other (older) members of society, in intergenerational terms.

Annex I

Call for case studies on initiatives that enhance the livelihoods of small-scale food producer youth under a changing climate

As part of FAO's **Boosting Koronivia** project supporting the negotiation process under the Koronivia Joint Work on Agriculture, FAO is planning **to publish a collection of case studies to showcase proactive solutions taken to support and strengthen the livelihoods of small-scale food producer youth under a changing climate**. These include sustainable practices and measures that create or contribute to the social, economic and environmental stability of youth involved in small-scale food production, while facing the impacts of climate change.

What is a small-scale food producer? According to the SDG 2 definition, a small-scale food producer is a producer with less than 5 ha of operated land and/or 5 tropical livestock units, and/or those who make up 40 percent of the population who hold the smallest agricultural income in a country.

The call is aimed at initiatives, NGOs/youth groups/international organizations and governments. By contributing to this publication, you will increase visibility of your project and have the possibility to inform international policy-makers and negotiators on the challenges and successful measures to support small-scale producer youth struggling with the impacts of climate change. The publication will be translated into French and Spanish and published on the FAO website. Submissions are accepted in **English only**.

GENERAL REQUIREMENTS

- Case studies should be submitted in **English only** and must not exceed **4 500 words (4 pages)** in length.
- Please attach **high quality photographs** (file type: jpg or tiff), including name of the photographer and organization, with clear indications on copyright.
- If including graphs, figures or infographics, please provide in .pdf or .ai format.
- Please provide additional resources where possible (links to websites, videos, blogs, etc.).
- Deadline for submissions is **28 July 2020**. Please email us at **Koronivia-JWA@fao.org**. If you have any questions or require more information, please contact us at the same email address.

CASE STUDY THEMES

For editing purposes, initiatives will be categorized into four areas. Please indicate ONE of the four themes to which your case study contributes:

- **capacity-building and education,** for example: networks and platforms for knowledge exchange; providing direct access to knowledge; innovative approaches and knowledge on how to start your own farm; opportunities to develop technical, business and soft skills; mentoring programmes; pilot gardens for youth; farm management classes, etc.
- **access to land and ecosystem services**, for example: support (and specific incentives) to provide youth with land; providing legal guidance; overcoming intergenerational issues; processes used for land adjudication to youth in the context of community land; support with access to productive resources or water, etc.
- **engagement in decision-making processes**, for example: inclusive mechanisms promoting youth participation in decision-making in their rural communities, organizations and in public policy-making processes; youth-inclusive development and implementation of public policies; inclusion of youth in the development of new strategies and programmes; engagement of youth in international decision-making, with a focus on small-scale food production
- **entrepreneurship, technology and innovation**, for example: technical assistance; innovative solutions based on information and communication technologies (ICT); facilitation of ICTs; access to new technologies, new practices for cultivation or sustainable agriculture guidance and formation in entrepreneurship; new apps to support farm management; digital agriculture; bridging traditional knowledge for new solutions; use of traditional knowledge for new purposes; introduction of new products and/or economic opportunities to build more stable livelihoods, etc.
- **access to markets, income protection, generation, and diversification**, for example: diversification of income opportunities within and outside of agricultural activities; networks to collaborate on the sale of food; facilitating access to young small-scale food producers; new income possibilities; facilitation of innovative value chains and/or market solutions; distribution of seeds or equipment; in-kind transfer and cash transfer; collective action and new networks; small loans, microcredit, new investment strategies to better target small-scale food producer youth.

HOW TO STRUCTURE YOUR CASE STUDY

Please structure your case study according to the four sections listed below:

A. Regional impacts/background (max. 1 125 words). What are the impacts of climate change in the region/on the community, especially female and male youth?

- What impacts does climate change have on the number of young people working in agriculture? What impact does it have on yields and production?
- Has climate change caused a shift in the social structure within communities? How? Did members of communities did have to migrate? Are there policies in place (e.g. shock-responsive social protection policies) to protect affected households?
- What are the needs in terms of adaptation to climate change? What are the adaption strategies put in place by the community? Have they worked equally for youth and non-youth?
- What are the impacts on the social, economic and employment prospects of young people? What are the food security impacts? (see access to, in the question below)?

- ↗ What is the situation of youth (male and female) engaging in small-scale food production?
- ↗ What are the specific challenges faced by male and female youth engaging in small-scale food production?
- ↗ Are there policies supporting male and female youth to engage in small-scale food production activities?
- ↗ What are the trade-offs faced by youth?
- ↗ What is the current situation in terms of youth access to health and sanitation services (including access to mental health services), to land, to productive resources, to food, to ecosystem services, to education, to knowledge about small-scale food production, to necessary support networks with government or NGO partners?
- ↗ What are the socioeconomic challenges faced by youth within the community? For example: child labour, un-and underemployment, land grabbing, inequalities, inclusion of youth in decision-making and policy advice, migration to urban centres, relationships between elders and youth, violence, conflict, mental health problems, suicide.
- ↗ Are there issues for youth connected to food supply and possible food insecurity within communities, and is access to markets provided?

B. Information about the initiative/NGO/youth group (max. 450 words)

- Name of the initiative/NGO/youth group (if there is one)
- Continent or region in which the case study takes place
- Number of members (of which numbers of females and males)
- History/timeline (since when does the initiative exist, what has been done so far?)
- Geographical representation
- Main goals
- Target group/s
- Link to website/project page/blogs/news articles or other contact details

C. Description of the project (max. 1 800 words)

- Key stakeholders and partners
- What actions were taken? If yes, how did you address men and women differently?
- What are the key impacts? What are different impacts on male and female youth?
- What is FAO's role or what role could FAO play?

D. Potential to reach other communities, lessons learned, recommendations (max. 1 125 words)

- Why is this activity a good practice?
- What were the challenges and lessons learned?
- What were the challenges? How did you overcome them? (Differentiate between challenges faced by male and female youth)
- Is there potential for spreading the initiative to other communities?
- Key recommendations for community members/politicians/FAO?

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