

# The CCAFS Youth and Climate-Smart Agriculture (CSA) Strategy

Working Paper No. 332

CGIAR Research Program on Climate Change,  
Agriculture and Food Security (CCAFS)

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RESEARCH PROGRAM ON  
**Climate Change,  
Agriculture and  
Food Security**



Working Paper

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**About CCAFS**

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## Abstract

The CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS) Youth Strategy is intended to guide strategic research on youth, support youth development initiatives across CCAFS Flagships and regions, and target and equip youth with knowledge on climate-smart agriculture (CSA) practices and technologies to increase productivity, resilience, and employment opportunities (CCAFS, 2016). This Strategy will ensure that CCAFS is well aligned with the urgent need to address youth issues globally, including young women's and men's participation in, and potential to benefit from, CSA.

The Youth Strategy is interwoven with the CCAFS Gender and Social Inclusion (GSI) Strategy (Huyer et al., 2016). It is integrated into activities across CCAFS and is an important aspect of scaling up CSA. CCAFS is also committed to targeting youth separately from gender-related activities through strategic research across FPs and regions.

The Strategy advocates for approaches that build the agency of youth to navigate and negotiate opportunities for more sustainable futures. To understand youth, broader geographic characteristics that influence local opportunities for employment, including improving productivity, adaptive capacities, and youth migration, must be documented. While structural and rural transformation will interact with conditions for CSA initiatives, social factors must be equally considered for their inter-relation with youth's agency to pursue CSA options, based in their own priorities and abilities. Socially inclusive and intersectional approaches provide a better understanding of the ways in which local and cultural contexts structure young people's opportunities and challenges in CSA. In addition, young people's relationships within families influence agency, particularly for those who are economically dependent upon their parents. The social networks that youth are embedded in often mediate agency and their ability to secure resources, both of which will be important to support their ability to kickstart, participate in, and benefit from CSA initiatives.

Entry points for working with youth include information and communication technologies (ICTs), digital technologies, value chain approaches, collective action, and social platforms. Value chain approaches will be essential to simultaneously address finance and resource gaps while supporting the potential for employment and climate change adaptation. The collective agency of youth, whether through groups or virtual networks, is also important for knowledge exchange and to build social capital, which can promote agency.

**Keywords**

Youth; climate-smart agriculture; strategy; climate change; information and communication technologies; climate services; resilience; youth migration

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<sup>1</sup> 2017-2018

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## Acronyms

CCAFS	CGIAR Research Program on Climate Change, Agriculture and Food Security
ACET	African Center for Economic Transformation
CIS	Climate information services
CSA	Climate-smart agriculture
CSAEC	Climate Smart Agriculture Excellence Centre
FPS	Flagships
GBV	Gender-based violence
GHG	Greenhouse gas
GSI	Gender and Social Inclusion
ICT	Information and communication technologies
IT	Information technology
LAC	Latin America and the Caribbean
LDCs	Least developed countries
LED	Low emissions development
MDGs	Millennium Development Goals
MEL	Monitoring, evaluation, and learning
SMS	Short message service
SSA	Sub-Saharan Africa
ToC	Theory of Change
UN	United Nations
WFP	World Food Programme



## Executive Summary

Climate change, a growing youth population, and high rates of youth unemployment are a global concern. The CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS) Youth Strategy is intended to guide strategic research on youth, support youth development initiatives across CCAFS Flagships (FPs) and regions, and target and equip youth with knowledge on climate-smart agriculture (CSA) practices and technologies to increase productivity and employment opportunities (CCAFS, 2016). This Strategy will ensure that CCAFS is well aligned with the urgent need to address youth issues globally, including young women and men's participation in, and potential to benefit from, CSA.

CCAFS will engage youth in CSA by enabling access and control to productive assets, including natural resources, and improving their participation in decision-making at different levels to build the resilience of their household and communities. Investing and engaging young people in youth-responsive adaptation and mitigation strategies and climate-smart policies and plans will significantly increase the potential of young people to increase their climate resilience.

The Youth Strategy is interwoven with the CCAFS Gender and Social Inclusion (GSI) Strategy (Huyer et al., 2016). It is integrated into activities across CCAFS and is an important aspect of scaling up CSA. CCAFS has also committed to target youth separately from gender-related activities through strategic research across FPs and regions. This builds on experience with youth in Phases I and II of the CCAFS program, and includes the following areas of focus:

1. Identify CSA options and incentives that offer attractive opportunities for young farmers and youth entrepreneurs along value chains, including digital-based opportunities.
2. Understand the relation and interactions of youth migration with climate change and related factors (e.g. food security, employment, disasters, and conflict).
3. Explore the use of digital technologies and engagement processes to meet the CSA and climate information needs of youth to strengthen their entrepreneurship and climate resilience.
4. Undertake strategic research on youth engagement in policy and how it can be improved at local, national, and global policy levels (e.g. through civil society organizations, social media, youth networks, and negotiation processes).
5. Engage in the capacity development of young people, including through social media, webinars, participatory learning approaches (e.g. use of participatory video,

theatre, and information and communication technologies (ICTs), climate change research opportunities, and access to professional networks.

6. Include age-disaggregated indicators (data) in monitoring, evaluation, and learning (MEL) processes.

There is a critical need to identify CSA options and incentives that create opportunities for young farmers and entrepreneurs along value chains. The research priorities outlined here will generate robust evidence to better support investment decisions and inform capacity building to support the design, integration, and development of youth in CSA policy and programming at local, national, and global levels.

The Strategy advocates for approaches that build the agency of youth to navigate and negotiate opportunities for more sustainable futures. To understand youth, broader geographic characteristics that influence local opportunities for employment, including improving productivity and adaptive capacities, must be documented. While structural and rural transformation will interact with conditions for CSA initiatives, social factors must be equally considered for their inter-relation with youth's agency to pursue CSA options based in their own priorities and abilities. Socially inclusive and intersectional approaches provide a better understanding of the ways in which local and cultural contexts structure young people's opportunities and challenges in CSA. In addition, young people's relationships within families influence agency, particularly for those who are economically dependent upon their parents. The social networks that youth are embedded in often mediate agency and their ability to secure resources, both of which will be important to support their ability to kickstart, participate in, and benefit from CSA initiatives.

Entry points for working with youth include ICTs, digital technologies, value chain approaches, collective action, and social platforms. Value chain approaches will be essential to simultaneously address finance and resource gaps, while supporting the potential for employment and climate change adaptation. The collective agency of youth, whether through groups or virtual networks, is also important for knowledge exchange and to build social capital, which can promote agency.

The Strategy is organized as follows: We highlight commonly used definitions and concepts related to youth, climate change, and CSA and provide an overview of demographic and employment trends, all placed within global and regional policy. This section also draws attention to key issues that should be considered when promoting youth participation in CSA, including educational attainment, migration rates, which are predicted to increase as a result of climate change, and access to and ownership of assets and resources. A brief

overview of methods (p. 34) is followed by research questions that can be used to guide CCAFS research. Examples of research which could support this agenda, include understanding contextual settings, youth awareness and knowledge of CSA, and their potential to create and seize opportunities in ICTs.

## CCAFS Youth Strategy

The predicted effects of climate change in CCAFS regions and mandate countries will be significant. Simultaneous increases in youth populations, coupled with high youth unemployment rates, mean that a youth-specific lens is needed to focus CCAFS research and development. CCAFS youth-focused strategic research takes place across the FPs<sup>2</sup> and five regions,<sup>3</sup> with a targeted allocation of three percent of the CCAFS Phase II overall budget (estimated at USD 1860 million annually for youth across all budget categories<sup>4</sup>).

CCAFS has already engaged in youth-focused initiatives across the programme. For example, in the Philippines, high school students have engaged in essay writing contests, tree planting, and CSA awareness campaigns (Manalo et al., 2019). In East Africa, CCAFS focuses on training youth in CSA practices and technologies (Amsler et al., 2017; Mugo et al., 2019). Bullock and Crane (2020) explored the role of youth in a dairy chain with youth partners by creating a WhatsApp platform for networking and facilitating peer-to-peer learning sessions. They also supported youth participation at the Agtech Africa Summit, an international dairy conference, held in Nairobi, Kenya in 2019. Young people interacted with thought leaders, policy experts, researchers, and the private sector to discuss the potential of CSA and digital agriculture to attract young people. One young farmer turned his farm into a “Climate-Smart Agriculture Excellence Centre” (CSAEC) and now makes extra income from teaching farmers to adapt to perennial, climate-related hazards by adopting CSA technologies and management practices.<sup>5</sup> In South Asia, the facilitation of CSA employment and entrepreneurship opportunities for youth include the manufacturing of farm machinery and acting as facilitators in agro-service centres (Sharma et al., 2019).

In the context of global trends, the CCAFS Youth Strategy focuses on the challenges that rural youth face in developing regions, with a particular emphasis on their roles, opportunities, and contributions to climate-resilient agriculture and value chains. The goal of the CCAFS Youth Strategy is to target and equip youth with CSA knowledge and technologies

<sup>2</sup> CCAFS’s five Flagships (FPs): FP1: Priorities and Policies for CSA; FP2: Climate Smart Technologies and Practices; FP3: Low Emissions Development; FP4: Climate Services and Safety Nets; and Gender and Social Inclusion (GSI).

<sup>3</sup> East Africa, West Africa, Latin America, South Asia, and Southeast Asia.

<sup>4</sup> CCAFS Phase II Proposal: <https://ccafs.cgiar.org/ccafs-phase-ii>

<sup>5</sup> <https://ccafs.cgiar.org/news/climate-smart-agriculture-silver-bullet-attract-youth-agriculture#.XukqDS0ZM0>

to increase productivity and employment opportunities (CCAFS 2016). The Strategy is intended to guide research to identify how CSA can improve returns from farming and the position of youth in agriculture value chains. CCAFS engages youth from different socioeconomic backgrounds and contexts by enabling access and control to productive assets, including natural resources, and improving their participation in decision-making at different levels to build the resilience of their households and communities. Investing and engaging young people in youth-responsive adaptation and mitigation initiatives and climate-smart policies and plans will significantly increase the potential of youth to benefit from climate resilience knowledge, skills, and opportunities.

The Youth Strategy is interwoven into the CCAFS GSI Strategy (Huyer et al., 2016). The main goal of CCAFS' research in this area is to promote gender equality and social inclusion in CSA, food systems, and landscapes. GSI contributes to the three CGIAR gender and youth sub-IDs<sup>6</sup> through research to inform, catalyse, and target CSA solutions to women and vulnerable groups, including youth, to increase their control over productive assets and resources and increase the participation of women and youth in decision-making at local and national levels (CGIAR, 2015).

<sup>6</sup> The CGIAR sub-Intermediate Outcomes (SLOs) for gender and youth are 1) Gender-equitable control of productive assets and resources; 2) Technologies that reduce women's labour and energy expenditure; 3) Improved capacity of women and young people to participate in decision making.

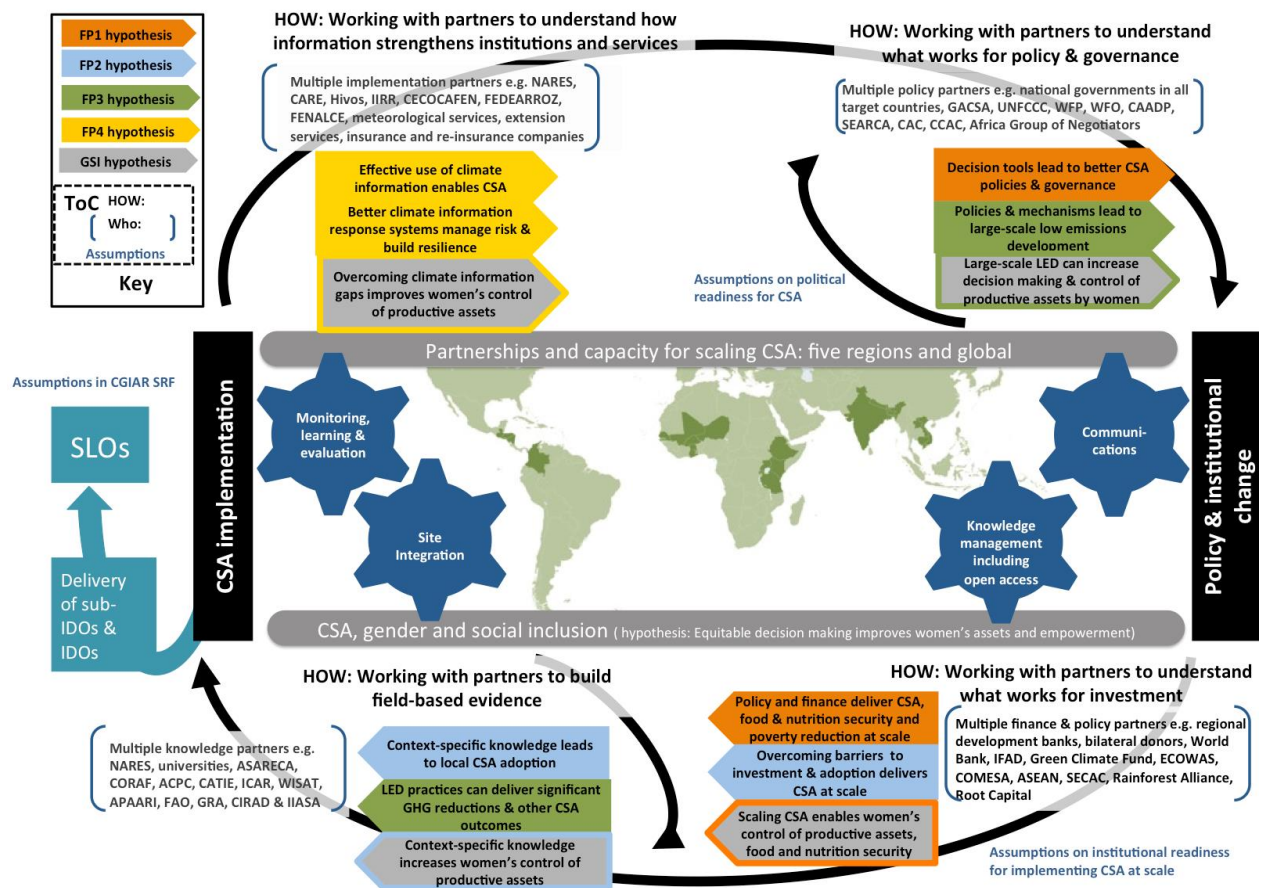


Figure 1. CCAFS Theory of Change diagram, with envisaged change mechanisms, hypotheses, and some key partners (Huyer et al, 2016).

Gender, youth, and social inclusion are integral to the CCAFS Theory of Change (ToC) (Figure 1). The ToC outlines how large-scale CSA adoption might occur, building on four priority action areas intended to promote coordinated action by farmers, researchers, the private sector, civil society, and policymakers: (1) build evidence to support CSA; (2) increase local institutional effectiveness; (3) foster coherence between climate and agricultural policies; and (4) link climate and agricultural finance (Lipper et al., 2014).

The CCAFS ToC (Figure 1), locates CCAFS activities within these four areas of action:

- (1) Working with partners, especially implementing partners and local organizations, to **build field-based evidence** (bottom left corner of Figure 1).

- (2) Working with partners, especially climate risk management service providers, to understand how to **strengthen institutions and services** through better use of climate information (top left corner of Figure 1).
- (3) Working with partners, particularly policy partners, to understand what works for **coordinated policy and governance** (top right corner of Figure 1).
- (4) Working with partners, particularly large agencies and companies which drive implementation, to understand what works for **investment** to reach scale (bottom right corner of Figure 1).

The CCAFS GSI FP integrates gender and youth into the CSA areas of action as follows (Huyer et al., 2016):

- (1) **Implementing a program of integrative and strategic research to “build evidence” that is informed by gender and youth research.** CCAFS research within FPs and regions, as well as with partners, will build a field-based evidence base to inform, catalyse, and target context-specific CSA solutions. These solutions target women, youth, and other social groups while facilitating the scaling of CSA practices.
- (2) **Ensuring that gender and youth empowerment are dealt with in coordinated climate and agricultural policy.** CCAFS will work with multiple global and national policy partners to support policies and programmes to improve food and nutrition security and enable large-scale, low emissions development (LED).
- (3) **Building mechanisms to engender finance.** This involves engendering finance tools to overcome barriers to adoption and investment in CSA technologies by and for women and youth and catalyzing the increase of targeted investments in CSA technologies across scales.
- (4) **Enhancing the capacity of local institutions and services to close gender and youth gaps.** This includes promoting the use of climate services to enable increased adoption of CSA by women and youth. All activities will contribute to the scaling of CSA, which increases women’s and youth’s access to and control over productive assets and resources.<sup>7</sup>

In line with the GSI Strategy, working with youth is important for achieving the sub-IDOs for equity and inclusion. CCAFS has committed to target youth separately from gender-related

<sup>7</sup> CCAFS developed five regional gender impact pathways in 2013, which are now integrated into the ToC.

activities through strategic research across FPs and regions. This builds on youth experience from Phases I and II of the CCAFS program and includes the following focus areas of activity:

1. Identifying CSA options and incentives that offer attractive opportunities for young farmers and youth entrepreneurs along value chains, including digital-based opportunities.
2. Understanding the relationship and interactions between youth migration, climate change, and related factors (e.g. food security, employment, disasters, and conflict).
3. Exploring the use of digital technologies and engagement processes to meet the CSA and climate information needs of youth to strengthen their entrepreneurship and climate resilience.
4. Undertaking strategic research on youth engagement in policy and how it can be improved at local, national, and global policy levels (e.g. through civil society organizations, social media, youth networks, and negotiation processes).
5. Engaging in the capacity development of young people, including through social media, webinars, participatory learning approaches (e.g. use of participatory video, theatre, ICTs, climate change research opportunities, and access to professional networks).
6. Disaggregating data by age in MEL processes.

In addition, a database of young researchers is managed to identify and coordinate a network of graduate students and early career scientists working on CCAFS research projects.

This Strategy provides guidelines for strategic research on youth to ensure that CCAFS is well aligned with the urgent need to address youth issues globally, including youth participation in, and potential to benefit from, CSA. There is a critical need to identify CSA options and incentives that create opportunities for young farmers and entrepreneurs along value chains. The research priorities outlined here will generate robust evidence to better support investment decisions and to inform capacity building. Together, this will support the design, integration, and development of youth in CSA policy and programming at local, national, and global levels.<sup>8</sup>

<sup>8</sup> See the CCAFS Theory of Change on pg. 7.



# Youth: Understanding diversity of experience and opportunity

## Youth and climate-resilient agriculture: Key issues

Widespread changes in rainfall and temperature patterns threaten agricultural production and increase the vulnerability of people dependent on agriculture for their livelihoods, including most of the world's poor (Lipper et al., 2014). Countries with large youth populations tend to depend heavily on agriculture and are projected to suffer significantly from extreme heat stress, which will disproportionately increase the exposure of rural youth, who have limited employment options beyond agriculture (IFAD, 2019). While livelihoods dependent on the agriculture sector are deeply threatened by climate change, the sector also has the potential to increase employment and support livelihoods for youth, if their adaptive capacity is supported (IFAD, 2019).

CSA is an approach to transform and reorient agricultural systems to better support food security under the new realities of climate change. CSA approaches guide actions needed to transform and reorient agricultural systems to effectively support development and ensure food security in a changing climate (Lipper et al., 2014). Youth play an active role in protecting the environment and implementing innovative climate change solutions, such as CSA (Mungai et al., 2018). Rural youth have demonstrated awareness and understanding of climate change, including how it will impact both themselves and future generations (Amsler et al., 2017). Governments, however, often provide few to no opportunities for direct participation in policy processes (te Lintelo, 2012) or in climate change adaptation processes.

CSA has key three objectives, or pillars:

1. To increase agricultural productivity to support increased incomes, food security, and development.
2. To increase adaptive capacity at multiple levels, from farm to nation.
3. To decrease greenhouse gas (GHG) emissions and increase carbon sinks (Campbell, 2014).

An important aspect of CSA is to build the adaptive capacity of farmers and institutions to respond effectively to longer-term climate change and manage the risks associated with increased climate variability (Campbell, 2014). Adaptive capacity is described as the “ability to experiment, innovate, and learn to act on new information in response to change and

disturbance” (Fernández-Giménez et al., 2015: 49), including climate change.<sup>9</sup> Adaptation is shaped by the goals, values, risks, and social choices that emerge from within society, all of which may differ according to different processes and power structures within society (Adger et al., 2009). Adaptive practices are essential to establish, maintain, and sustain capacities in the face of a more volatile future in agriculture and related sectors. Additionally, while identifying potential synergies and trade-offs between objectives is an essential element of CSA (Neufeldt et al., 2013), the relative priority of each objective varies across locations. For example, a greater emphasis is placed on productivity and adaptive capacity in low-input smallholder farming systems in least developed countries (LDCs).

Improved adaptive capacity may include the diversification of farm enterprises, the sustainable intensification of livestock production systems, improved capacity of institutions to disseminate knowledge and manage local-level adaptation planning, or access to crop varieties that are more tolerant of heat, droughts, floods, and salinity (Bennet et al., 2014). Climate information related to planting dates, pest and disease control, water availability, social safety nets, and climate-weather insurance to manage risk are also important (Campbell, 2014).

Adaptive actions are shaped through the interaction of physical events with social, political, and cultural systems. Different types of adaptation practice interact with social norms and cultural values in a particular setting, thus requiring “highly situated climate adaptation strategies” (Neef et al., 2018). It is also important to understand individual needs so that the social differences that shape livelihood decisions and outcomes are also understood (Carr et al., 2016). For example, greater attention to social context means tailoring climate and weather information needs to gender and other intersecting social factors to inform inclusive, climate-smart practices (Fisher and Carr, 2015). Carr et al. (2016) found that weather and climate information have different values for different users. Understanding the varied climate and weather information needs of these different users will produce more effective climate services. Context-specific gender differences in household responsibilities, access to technology and resources, social and gender norms<sup>10</sup>, decision making processes, differences in literacy rates, or male bias in extension services can also restrict the access of women and youth to channels of communication (Gumucio et al., 2020; World Bank, IFAD, FAO, 2015).

<sup>9</sup> Adaptation to climate change refers to long-term, permanent or ongoing changes made by groups to mitigate the impact of both slow and sudden-onset disasters (Neef et al., 2018).

<sup>10</sup> Gender refers to the characteristics of women, men, girls, and boys that are socially constructed. This includes norms, behaviours, and roles associated with being a woman, man, girl, or boy, as well as relationships with each other. As a social construct, gender varies from society to society and can change over time (WHO, 2020).

More research, however, is needed to understand how, and to what extent, young women and men are aware of and respond to climate change as well as the extent of their adaptive capacity. As Macdonald et al. (2013:360) state, “globally, youth voices and their experiences, observations, and perceptions about climatic and environmental change and variability are relatively absent in the published literature to date.” Mentorship, training, knowledge management, and finance are all methods of youth engagement in CSA (Mungai et al., 2018).<sup>11</sup>

We draw on existing empirical research to identify and outline key areas where further research and action are needed to increase the potential of youth to contribute to, participate in, and benefit from CSA.

### **Who qualifies as youth?**

While “youth” is commonly defined by age, age-based definitions differ across countries and development organizations and include diverse, complex, and sometimes turbulent, experiences and transitions – such as completing school, searching for work, entering into marriage, or starting a family. For example, the United Nations categorises youth as 15-24 years old (Gough et al., 2013), whereas many African countries expand the definition of youth into the mid-thirties, such as the African Youth Charter, which considers youth as people between 15–35 years of age. Age categories in CCAFS countries similarly vary by country and region, from the age of 12 up to 35 (see Table 1 in Annex). These various definitions for youth have subsequent implications for statistical cross-national comparability (Ayele et al., 2017). Access to capital and assets, which are needed to adapt to climate change, also vary within these categories. For example, those in lower age brackets, roughly between 15 and 24 years old, may depend more heavily on parents and have limited decision-making power when compared to those who are older, independent, and/or married.

Additionally, age-based definitions, as commonly implemented in legal and policy contexts, do not capture the cultural realities of youth, providing little space for the notion of transitions, which is central to a modern understanding of young people’s lives (Locke and te Lintelo, 2012). Frequently used alternatives to age-based definitions are the life stages, youth transitions, or youth culture perspective (MacDonald et al., 2001). Life stage and youth transition approaches categorise youth as a distinct stage between childhood, which is

<sup>11</sup> Mungai et al. (2018) suggests several ways to increase youth awareness and action on climate change in agriculture. Training and education that includes vocational training and extension services; and developing curricula in CSA in higher education could generate a multiplier effect by disseminating knowledge on climate adaptation and mitigation to farming communities.

characterised by dependence and immaturity, and adulthood, characterised by independence and maturity (Gough et al., 2013). Although policy and law tend to assume that young people pass through life stages linearly, for example entering into employment after completing their education, many young people may assume economic roles at earlier stages (e.g. be financially independent or breadwinners during childhood) and may also revert back to assuming “younger” roles later on (Waage, 2006). Finding a job, leaving home, getting married, and becoming a parent may occur simultaneously or not at all. In other cases, youth may move back home in the event of becoming unemployed (Johnson-Hanks, 2002). In the Global South, where young people often traverse back and forth across boundaries of time and place, specific notions of childhood, youth, and adulthood can be fluid (Johnson-Hanks, 2002). For example, in Sub-Saharan Africa (SSA), longer periods of educational enrolment may delay marriage and postpone entry into the labour force for young people (White, 2012).

### **Policy and programme lacunae**

In the last decade, high youth unemployment rates have been the impetus for a surge in policy and programme attention in SSA (Ayele et al., 2017). In many instances, however, policies simply do not address youth issues or priorities (Sommers, 2011), in part because young people are marginalised from policy and programme development (Chinsinga and Chasukwa, 2012; Proctor and Lucchesi, 2012). For example, while youth access to land should be prioritized by governments, as well as international and national organizations (White, 2012), most policies and programmes focus on supply side issues, such as education, skills training, behavioural change, and, particularly, entrepreneurship (Flynn et al., 2017). Considered one of the strongest drivers of global job creation, “with an important impact on economic growth and political stability” (USAID, 2011), youth entrepreneurship is widely promoted as a solution to youth unemployment, especially in SSA, where the public sector is shrinking and the private sector offers limited opportunities for formal wage employment. There is insufficient evidence, however, that “youth will engage with value chains that demand higher levels of management and greater attention to quality” while integrating digital technologies into their enterprises (Sumberg and Hunt, 2019: 131). There is also limited support for the claim that young people are naturally entrepreneurial, that they have greater entrepreneurial capacity than adults, or that youth will naturally embrace new agricultural technologies, such as improved seeds, fertilisers, irrigation and mechanisation. Additionally, this entrepreneurial focus, as promoted by donor agencies and NGOs, operates on the assumption that young people are in a position to respond to market demands and to bear the associated risks. These expectations also follow the assumption that they have the individual freedoms and autonomy that enable them to improve their quality of life (DeJaeghere and Baxter, 2014) along with adequate resources to support the changes

required to adapt to market conditions. Entrepreneurship, as a result, may not provide a way out of poverty if markets are not well developed. In turn, young people may find themselves “entrepreneurially underemployed,” without the ability to sell the goods and services they produce (Flynn, 2017; Yeboah et al., 2016; Ayele et al., 2017).

In general, policy and programming tend to frame youth homogeneously, undifferentiated by ethnicity, gender, age, class, or religion. Despite their deep embeddedness in families, communities, and broader social relationships, young people are often considered independent of these entities, without regard for how these systems influence youth experiences and their ability to take advantage of agricultural opportunities. Interactions with parents, families, peers, and communities, as well as service providers (e.g. youth workers, teachers, and trainers), shape their opportunities (Chigunta et al., 2005). For example, young people in Tanzania are often unable to access and market coffee through cooperatives since their parents hold the household’s membership and they cannot afford an annual membership on their own (Anania and Kimaro, 2016). Situations like these illustrate a common situation of limited agency when young people work within family enterprises. The view of young people as independent entities produces a significant mismatch between youth policy and anticipated positive youth outcomes (Anyidoho et al., 2012; FAO, 2016; Hajdu et al., 2013). This policy framing, in response to African agriculture’s “youth problem,” is also hampered by a lack of research (Sumberg et al., 2012). To work with young people more effectively, it is imperative to better understand the wider contexts which influence youth agency.

## **Youth, climate, and agriculture: A literature review**

### **Education**

Achieving universal primary education was a critical Millennium Development Goal (MDG), leading to more children enrolling in primary and secondary education than ever before (Gough et al., 2013). As a result, more young people are going to school and pursuing education for longer periods (Elder and Kring, 2016). There remains, however, more work to be done. In 2018, an estimated 61 million children, of lower secondary school age, did not attend school, with more than three quarters of these children live in South Asia and SSA. In total, an estimated 40 percent of lower secondary school-age children in SSA are not in school. To date, more than two-thirds of countries have reached gender parity in primary education, while less than a third have achieved parity at the lower secondary level. The largest gender gaps are in West and Central Africa, where 83 percent of girls are enrolled in

lower secondary school for every 100 boys. In contrast more girls than boys are enrolled in lower secondary school in Latin America and the Caribbean (LAC).<sup>12</sup>

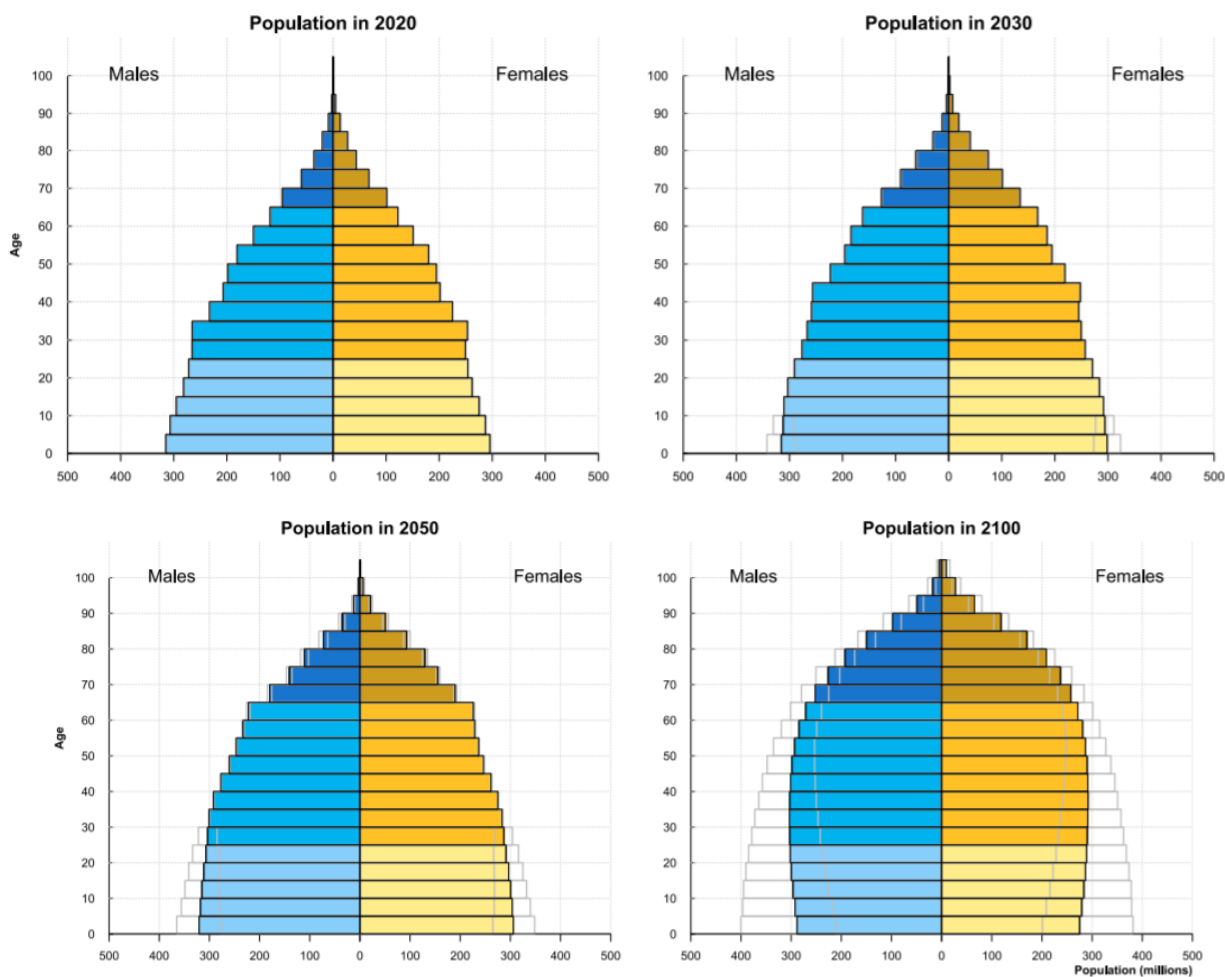
African youth continue to exit the education system earlier than youth in the rest of the world, especially young girls. Reasons for lower educational enrolment of girls and young women include childbearing at a young age or social norms in rural areas that pressure them into early marriage (Mabiso, 2018; Blum et al., 2017). Parents may also prioritize investments in boys' education, often a result of male child preference or the expectation that, when married, young women will not have a need for employment. However, even in regions with lower enrolment rates, such as SSA, an estimated 59 percent of 20-24 year olds will attain a secondary level education by 2030, compared to 42 percent in 2012 (African Development Bank, 2012). While this is a positive development, there is little research on the types of knowledge and skills young people acquire through formal education and if those skills are useful in the labour market (Gough et al., 2013).

## **Youth employment**

While youth issues have been on the international community's policy agenda for decades, they took on increasing importance in 1985 when the UN declared the first International Year of Youth. The world's population is increasing, with youth making up the largest population segments in many regions, including Southeast Asia and SSA. In 2019, Central and Southern Asia were home to the largest population of youth (361 million), followed by Eastern and South-Eastern Asia (307 million), and SSA (211 million). In the 47 least LDCs, the youth population is projected to increase by 62 percent over the next three decades, rising from 207 million in 2019 to 336 million in 2050. The largest increases are expected in SSA (+89 percent), Oceania, excluding Australia and New Zealand (+38 percent), and Northern and Western Asia (+28 percent).<sup>13</sup>

<sup>12</sup> UNESCO Institute of Statistics global database, 2019.

<sup>13</sup> <https://population.un.org/wpp>



**Figure 2. Projected population for least developed regions<sup>14</sup> (United Nations, Department of Economic and Social Affairs, 2019: 7)**

With close to 70 percent of its population below the age of 25, Africa is the youngest continent in the world (Ackah-Baidoo, 2016). This demographic figure is often referred to as a “youth bulge,” which describes the existence of a proportionately large population of young people in an area or region and often frames policy narratives. A focus on harnessing youth abilities to contribute significantly to the economic development of a country can be conceptualised as the “demographic dividend.” The youth bulge can also be perceived as a threat to security and stability, since the presence of large numbers of unemployed, presumably idle, youth is associated with insecurity, urban social unrest, and political instability (Urdal, 2004). Youth employment improves the ability of young people to increase their productivity and resilience. Globally, however, youth unemployment rates are high and projected to increase. Over the last decade, renewed interest in youth is related to concern

<sup>14</sup> “Medium-variant projections for 2020-2100 are shown as thin coloured lines, and uncertainty is shown in lighter shades for 95 per cent prediction intervals” (United Nations Department of Economic and Social Affairs, 2019: 7).

about a growing population of unemployed, or “underemployed,” young people. In 2014, an estimated 73.4 million young people were unemployed globally, with downturns in economic activity pushing another half million into unemployment (ILO, 2015). It is estimated that 43 percent of young people are unemployed or among the working poor, with approximately 228 million young people earning less than US\$2 per day, and 286 million living below US\$4 per day (Flynn & Sumberg, 2017; ILO, 2015).<sup>15,16</sup>

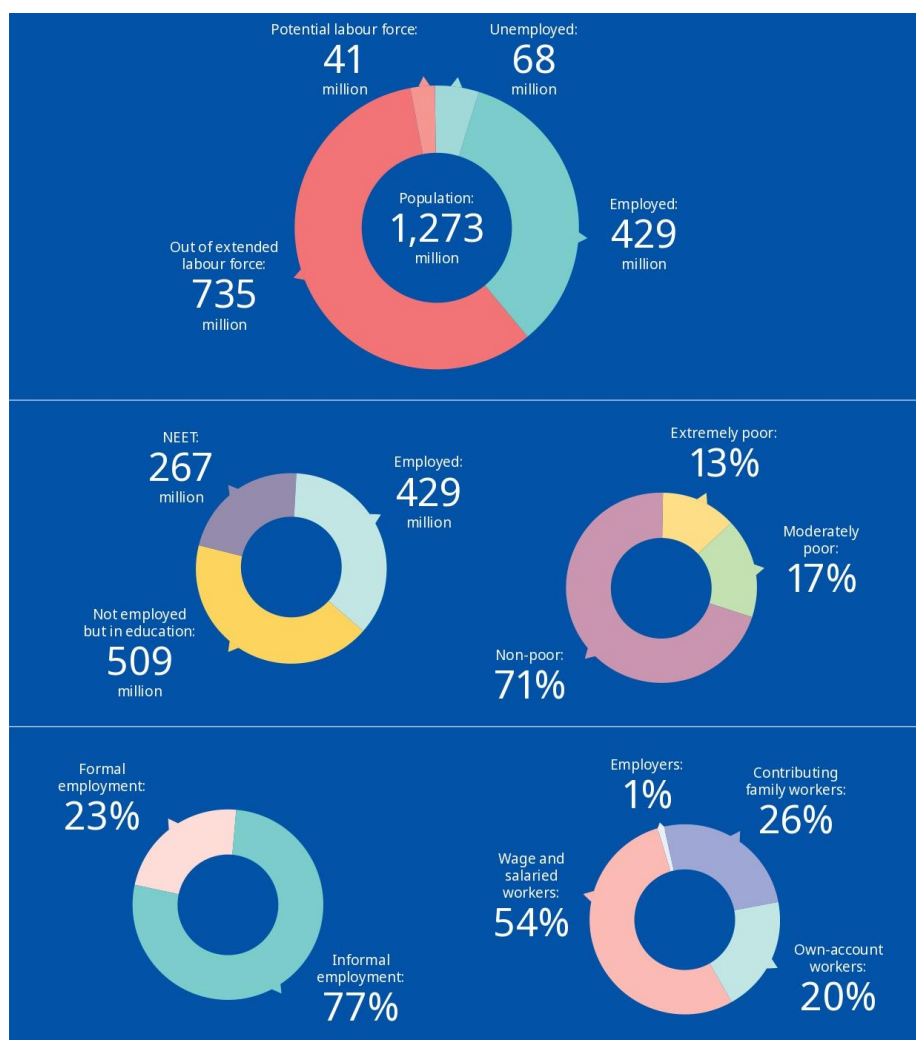


Figure 3. Overview of the global labour market for youth, 2019 (ILO, 2020: 23)<sup>17</sup>

<sup>15</sup> The ILO assessment is lower than the UN figure of 438 million; however the ILO analysis assumes people are disproportionately represented in the informal economy and that most employment growth in the developing world is taking place in the formal economy (ILO, 1983; 2015).

<sup>16</sup> In emerging and developing countries, 16.7 per cent of young workers live on income below the extreme poverty threshold of US\$1.90 a day, partly because they often start their working lives in the informal economy. Globally, three out of four employed young women and men are in informal employment, compared to three in five for adults. In developing countries, this ratio is as high as 19 out of 20 for young women and men.

<sup>17</sup> “‘Youth’ refers to the age cohort between 15 and 24 years. Percentages may not add up precisely due to rounding” (ILO, 2020: 23)



Being young and female can serve as a double strike because young women tend to experience higher rates of unemployment. For example, in 2014, the labour force participation rate of young men was 16 percentage points higher than that of young women. Underlying causes for these differences include early childbearing and marriage, gender roles that ascribe responsibility for domestic work to young women, less access to productive resources, and persistent job segregation.

Additionally, the situation of young women in rural areas is often characterised by less access to human and physical capital, lower rates of participation in the labour force, lower productivity, and associated lower welfare outcomes (Elder and Kring, 2016; IFAD, 2019). For example, in certain regions of Kenya, intersecting constraints related to age, gender, and ethnicity affected young women's economic opportunities in dairy production (Bullock and Crane, 2019).

Leavy and Smith (2010) suggest that aspirations of young people are framed within the implicit and explicit expectations placed upon them by family and kinship networks which, in turn, are influenced by gender-based societal customs and norms. Girls may choose stereotypical occupations because gender norms dissuade young women from aspiring to occupations that are typically male dominated. Young women are less apt to enter into agriculture-related training globally, although there have been some increases in enrolment rates in some countries (Huyer, 2015). Such norms influence the ability of all young people to achieve their aspirations (Bullock and Crane, 2019; Elias et al., 2018).

### **Assets and resources**

In many developing country contexts, young people, especially young women, do not have access to or rights over assets, particularly productive land (Amsler et al., 2017). Tensions exists between older generations looking to retain control of family or community resources and young people wishing to receive their share of resources, form their own independent farms and households, and attain the status of economic and social adulthood (White, 2012). Concerns about fragmentation of family land may cause parents and families to be less willing to divide land among their children. Increased rates of land fragmentation, due to inheritance, reduces the viability of the family farm as a livelihood strategy, potentially pushing some family members out of agriculture (Proctor and Lucchesi, 2012). On the other hand, the limited potential to inherit or gain access to land (e.g. Madagascar, Malawi, South Africa, Zambia, and Zimbabwe) may also cause young people to leave agriculture (Asciutti, et al., 2016; IFAD, 2019).

Young people experience considerable obstacles in gaining access to capital, land, and productive assets. Land ownership is especially tenuous for women. In addition to legal or culture restrictions on owning land in some parts of the world, when women do inherit land, gender-ascribed constraints are often deeply rooted in the norms, beliefs, and values that characterise family relationships (Kabeer, 2016). Benefit-sharing is often based on gendered intra-household and intra-community resource allocation and bargaining power (Quisumbing and Maluccio, 2003). Although laws asserting women's rights to property and land are in place in many countries, norms often persist over time and are slow to change (Deere and Doss, 2006).

Young people are often marginalised from decision-making processes concerning community assets. In some cases, where land can be rented or sharecropped, youth are not included in decisions or are victims of land alienation, when household heads rent the land out to others (Asciutti et al., 2016). Marriage also has implications for asset transfers. Patrilocality, the term given to the social arrangement where women move to the home of their husbands upon marriage, often results in women giving up rights to own or access productive assets.

In addition to land ownership, the profitability of farming and the potential to adapt to a changing climate will increasingly depend on the use of purchased inputs, especially when producing for dynamic markets, such as produce production for expanding urban areas (IFAD, 2019). The lack of collateral and ability to accumulate assets hinders long term access to financial services, savings, and loan opportunities, including credit. Access to credit is important for adaptive capacity and depends on access to resources such as land, credit, and insurance, aspects where rural youth are at a disadvantage (Yeboah et al., 2018). Barriers include financial illiteracy, a lack of social and financial capital and collateral, and failure to reach the "underbanked," or those marginalised from formal banking systems (AGRA, 2015). In fact, young people make up a disproportionate share of the unbanked population worldwide (Gasparri and Muñoz, 2018).

Rural youth, in particular, comprise the largest share of individuals without access to formal financial services. Forty-six percent of youth, aged 15-24, have an account at a formal financial institution, compared with 66 percent of adults. About 18 percent of youth report having savings in a formal financial institution in the past year (ILO, 2016). Regionally, SSA has the lowest levels of financial inclusion of youth, at six percent, and the second highest share of informal financial inclusion of youth, at 13.8 percent. It is the only region where the rate of access to informal financial services is higher than formal services. The highest rates of access by youth to both formal and informal financial providers are found in South Asia, at 26.1 percent and 21.3 percent, respectively. In LAC, three times as many youth have access

to formal financial services compared to informal financial services (AGRA, 2015). To a certain extent, digital financial services, such as mobile money, can reduce age-related, gender-based, and rural-urban gaps in access to financial services and other resources (IFAD, 2019; Huyer, 2016). For example, mobile money has proven to be an effective strategy for moving female-headed households out of poverty in Kenya (Suri and Jack, 2016).

Remittances, whether from internal or international migration, are important factors in reducing household poverty and can facilitate young people's access to finance. In a study of rural youth in developing countries, around 46 percent that received remittances possessed at least one financial product, the most common being a savings account (32 percent). They saved, on average, significantly larger amounts than those who did not receive remittances (IFAD, 2019; Orozco and Jewers, 2018).

## **Migration**

Young people, especially those from Africa, Latin America, the Caribbean, and Asia, are the most likely to migrate, with an estimated 27 million young migrants in the world (ILO, 2013). Causes of migration include the effects of climate change, food insecurity, the search for employment, and a desire for better social status.

Climate change will influence human mobility in all regions of the world, although the specific types of impact and magnitude depend on both biophysical and socioeconomic factors (Piguet and Laczko, 2013). Evidence shows that climate migration is already taking place across the world and is expected to grow dramatically in the future (Rigaud et al., 2018). Migration, in the context of climate change, has multiple causes. Climate-related risks, coupled with socioeconomic drivers, increases agricultural vulnerability, leading to livelihood loss. Migration is one of the coping strategies adopted in response to the threats of weather and climate extremes. While research on youth migration resulting from climate change factors is not well advanced (Bezu et al., 2019), the high rate of migration, coupled with the predicted impacts of climate change, indicates that these interactions deserve further attention.

High rates of youth unemployment motivate, or necessitate, migration for millions of young people who are seeking improved job prospects (ILO, 2013). Since a country's level of structural and rural transformation sets the parameters for opportunities (IFAD, 2019), young people, especially those with higher levels of education, may find limited opportunities for employment or self-employment in rural areas. Where and why young people migrate is varied. Seasonal migrants tend to return to their places of origin and rebuild their livelihoods. Rural youth may migrate to urban areas within their own country or seek new opportunities in foreign countries (IFAD, 2019; Smith and Floro, 2020). They may

migrate to cities to raise money to invest in agriculture (Asciutti, 2016). Youth migration to urban areas may be temporary, permanent, occur early in life, and/or occur periodically as part of an income diversification strategy or with longer-term intentions to return home to take up farming (Leavy and Smith, 2010; Sumberg and Okali, 2013). In Swidden societies in Vietnam, youth outmigration starts early, with parents sending children to boarding schools outside of the village. From this point on, young people generally seek off-farm work for months or years at time, eventually marrying and settling in urban locations. This leads to significant demographic shifts in which entire households and villages may relocate (Cramb et al., 2009).

Migration may also be the result of an individual's desire to achieve improved social status (Proctor and Lucchesi, 2012). Increasingly, narratives about youth migration suggest that young people move out of agriculture because farming is seen as "dirty work," with low economic returns and low status. Although agriculture is a significant employer of young people, many aspire for higher living standards that are not associated with agricultural livelihoods (Leavy and Smith, 2010; Sumberg and Okali, 2013). For these reasons, understanding non-pecuniary benefits of migration are important, as well as how they influence young people's occupation choices. Non-pecuniary benefits may include "status, independence, and youth identity, closely connected to the question of aspirations and ambitions" (Flynn et al., 2017). Young people may be willing to engage in certain types of agricultural activities if they are associated with high prestige or they can expect successful results. In Zambia, rural youth chose to stay in agriculture where they considered their prospects of success to be greater than if they were to migrate elsewhere, a choice that contrasts with that of young men in Uganda, who chose to migrate to urban areas in search of economic opportunities (Leavy and Smith, 2010; Kristensen and Birch-Thomsen, 2013).

## **Conflict and violence**

More than 25 million young people live in crisis afflicted areas (UNICEF, 2006). They may be displaced, killed, orphaned, abducted, and/or victims of sexual violence. Youth are often portrayed as either perpetrators and/or as victims of conflict. Such polarizing dichotomies, however, lead to a simplified picture of the intersecting causes and effects of conflict and violence on youth.

High rates of youth unemployment are often seen as root causes of violence and conflict. The lack of economic opportunities, political inclusion, and social capital in poor performing economies, characterised by weak governance and a large youth population, are often ingredients for youth engagement in violence (Urdal, 2004). Discontent with economic opportunities can lead to competition for limited educational and employment

opportunities, which can also spark political violence (Urdal, 2006) or public demonstrations, such as those which led to the Arab Spring.

While most young victims of violent crime live in urban areas, both urban and rural youth are affected due to the increasing connectivity between rural and urban areas (IFAD, 2019). Evidence from the Near East, North Africa, Europe, and Central Asia suggest that, rather than being instigators of conflict, young people are affected more often as refugees, with long-lasting negative consequences on education and welfare (Baliki et al., 2018; Verme et al., 2015).

For young people, whose livelihoods are dependent on natural resources, the effects of climate change and conflict are increasing. Climate change has been referred to as a security problem and, while there is growing concern that climate change will increase the risk of violent conflict, empirical evidence is limited (Barnett and Adger, 2007). Climate change undermines human security, both now and in the future, by reducing access to and the quality of natural resources, such as water (Barnett and Adger, 2007). The result is a surge in social conflict between different sets of people and between nation states (White, 2011). In communities where youth depend on natural resources to support their livelihoods, such as pastoralist communities, violence is emerging in relation to climate change impacts. For example, in South Sudan, cattle raiding has traditionally been a part of boys' transition from adolescence to maturity. Pastoral communities, living in arid floodplains, travel to areas with better sources of water for pasture. The increased competition over dwindling resources has contributed to an increase in the frequency of cattle raids (Ensor, 2013).

## **Gender-based violence**

Young women and men are affected differently by violence. Compared to young women, young men are more likely to be recruited into terrorist groups, drug trafficking, rebel militias, and gangs, resulting in the more frequent depiction of young men as perpetrators of conflict (Sommers, 2011). This, however, belies the fact that young men are affected more than women by violent crime in LAC, which includes seven of the most violent countries in the world (Giuskin et al., 2018). Primary factors influencing young men's participation in violence are economic exclusion, inequality, armed conflict, drug trafficking, and the loss of a sense of belonging (Trucco and Ullmann, 2015).

The UN has identified gender-based violence (GBV) against women as a global health and development issue. At the same time, gender shapes the meaning of violent acts and often depends on situational and cultural contexts (Russo and Pirlott, 2006), resulting in a reluctance to change violent behaviour. For example, being beaten for burning a family meal

may be viewed as acceptable by women in certain contexts (Schuler et al., 2011; Schuhmacher, 2011; United Nations 2015). Therefore, when introducing concepts such as CSA, it is important to consider how women-only activities may influence gender relations. While CSA adoption is related to gender equality (Huyer and Partey, 2020), women-only initiatives can cause men to resent privileges that they do not directly benefit from. Junior women household members may be in particular risk of GBV as a result. For these reasons, programmes should be designed with gender dynamics in mind, including male buy-in of female-led activities, so that programs do not cause or increase the likelihood of harm to participants (Kantor et al, 2015).

## **Entry points for youth research in CSA**

CSA research needs to address youth-specific challenges and identify youth-tailored solutions. Young people's collective and individual agency can be supported by creating and sustaining youth groups, value chain approaches, and ICT initiatives and innovation. It is important to work with youth groups as strategic partners and to support participatory research approaches.

### **ICTs and digital technologies**

While much attention has been devoted to exploring how youth may use and create more ICT products to support better agricultural and production practices, many digital technologies are not youth-specific and youth have different capabilities in the use and creation of digital solutions. If properly implemented, digital technologies can address production level and financial constraints that youth commonly face. Opportunities may also emerge for youth to design information technology (IT) solutions that work in their specific contexts.

There is little evidence about the relationship between age and ICT use (Sumberg and Hunt, 2019), but one example of research on gender and age trends in the use of digital technology was published by the African Center for Economic Transformation (ACET). It found that smartphones are the most common mobile device in urban areas, particularly among young males, while young women tend to use basic phones. A larger gender gap in ICT use was also found in rural areas, with low-cost phones beginning to bridge the urban/rural technological divide (ACET, 2019). Nevertheless, excitement around the potential of digital innovation to support better agricultural practices, improve efficiency, and create business opportunities for youth is evident in SSA. Digital technologies may provide a host of new ways to think, participate, and learn about innovation and the creation of dynamic solutions to complex problems (Mungai et al., 2018).

Digital solutions can lower the transaction costs of market information and access, increase knowledge, and facilitate financial inclusion (Deichmann et al., 2016). Climate information services (CIS), disseminated through mobile phone platforms for better farming decisions, are gaining momentum across SSA. In Kenya, farming communities are exchanging information through mobile applications, such as WhatsApp, and receiving advice on best practices from agricultural experts through applications such as iShamba.

Mobile phones are also important platforms for digital innovations, such as digital savings, credit, and insurance products, that provide safety nets in the event of climate shocks and medical emergencies (IFC, 2018). Young people's access to financial services is constrained

by barriers that include lack of collateral and credit history, as well as regulatory issues, such as minimum age requirements for opening a bank account. Digitally enabled credit can allow young farmers to purchase inputs and control their incomes (Deichmann et al., 2016). While access to credit will not necessarily translate into agricultural investments, financial stability could result in increased resilience.

New technology-enabled farming and marketing practices are increasing productivity and creating new ways of engaging with markets (Bello et al., 2015; Noorani, 2015) and agro-advisory services (Mittal, 2016). Some of the approaches for scaling CSA highlighted, by Westermann et al. (2018), include linking up multiple value chain actors and generating a platform for dialogue, knowledge exchange, and capacity building.

Social capital is an important aspect of an individual and household's ability to adapt to climate change (Füssel, 2017). For example, a study in rural Ethiopia found that households with greater social capital tend to have more diversified livelihood options in relation to informal insurance schemes (Wuepper et al., 2018). Additionally, Martinez-Baron et al. (2018) found that social capital, through social networks, supports the scaling of CSA. Youth often lack sufficient social capital due their age and position in society, particularly where age-based hierarchies are common. Within the household, young people generally have low levels of social status and limited assets as well. The use of IT can support the creation of social capital, or networks of relationships among people in society.

Cooperatives have been an effective mechanism for engaging young people in agriculture and increasing both on and off-farm employment opportunities (FAO, 2012). The collective action of young people through social media platforms can facilitate the establishment of agricultural cooperatives. Youth can also be encouraged to join existing farmers organizations or cooperatives, helping them to gain access to inputs, services, finance, and markets. The World Food Programme (WFP) has indicated that, when farmers work as a collective unit, their ability to negotiate is strengthened and crops increase in value. They may also negotiate better prices for agricultural inputs and benefit from lower interest rates on loans (Zhao, 2017).

Other IT examples include drones, to collect real-time data on food and agriculture, and applications that facilitate access to information (FAO, 2017). Additional examples come from Sri Lanka, India, and Costa Rica, where young people used their digital experience to become infomediaries (Manalo et al., 2016). Finally, research approaches can incorporate ICTs to support knowledge sharing. Participatory video is an approach that identifies the needs and current knowledge of a community to create climate change strategies that may



be adapted at different scales (Koningstein, 2015). Workshops that use this approach have facilitated the transfer of knowledge from parents to children. Television programmes are also shaping the image of agriculture by portraying it as a profitable activity (WFO, 2017).

Specific examples shed light on the IT movement in farming that is gaining momentum and traction:

- Precision agriculture, enabled by GPS, satellites, and drone monitoring, are increasing the availability of weather and climate information (WFO, 2017). The Indian enterprise, Flybird Farm Innovations, works to increase agricultural productivity and improve resource management through precision irrigation and fertigation, enabled by a sensor-connected, automated controller (IFAD, 2019). Similar approaches have been adopted by a number of African start-ups, such as AgriPrecise, UjuziKilimo Illuminum Greenhouses, and ThirdEye.<sup>18</sup>
- Hello Tractor, developed by young people in Nigeria, is a digitally-based enterprise, along the lines of a digital car-hire app, which makes agricultural mechanization more accessible to smallholder farmers (Cabral and Sumberg, 2017). The start-up sells monitoring devices to tractor owners willing to rent out their underutilized machinery. Young people across Nigeria were trained to identify potential users and sell the product services (Cabral and Sumberg, 2017). A farmer who is registered with Hello Tractor can send an SMS text to a booking agent who will locate and schedule a tractor to be sent to the requested location to complete any task that the farmer may need done, such as ploughing, tilling, or planting (IFAD, 2019).
- Livestock owners can use sensor technologies to better understand the risk of heat stress in their herds (WFO, 2017). Other IT services, such as iCow,<sup>19</sup> improve dairy production. Iweigh, a web-based mobile application, enables users to estimate cattle weight using girth measurements and generates feed formulation details so that farmers can make more informed market and feed choices.

## Youth and gendered access to climate services

Men and women of different ages face different opportunities and constraints to access and use information services. A gender digital gap in relation to mobile ownership, access, and

<sup>18</sup> <http://www.thirdeyewater.com/>

<sup>19</sup> <https://www.icow.co.ke/>

use exists in many regions, particularly in rural areas (IFAD, 2019). Globally, there is still a gender gap of 10 percent in mobile ownership, a gap that increases to 15 and 28 percent in SSA and South Asia, respectively. The gender gap around mobile-based internet use is even larger, at 23 percent globally, with break downs of 20 percent in the Middle East and North Africa, 41 percent in SSA, and 58 percent in South Asia (GSMA, 2019). Ownership is an important factor in who makes decisions for mobile use, including the ability to choose when and where to use the phone and what the phone can be used for.

**Box 1. A triple burden: Constraints of young, rural women**

“Young rural women face gender-based constraints that may impede them from gaining the agency they need to prosper in the new economy. Economic and technological change often outpace changes in social norms. A young woman in a rural village in Bolivia, Cambodia or Niger with a smartphone has access to information, ideas and possibilities that her parents could not have dreamed of, but social norms may prevent her – more than they would a young man – from acting on these possibilities. There is a greater need than ever before for investments that will ease the triple burden of being young, being a woman and living in a rural area.” (IFAD, 2019: 61)

In Ghana, men’s and women’s key challenges to accessing climate services through mobile phones included limited training, inability to interpret climate information, and application (Partey et al., 2018). Women reported limited access to mobile phones and a lack of funds for mobile credit (ibid). Such challenges and obstacles lead to lower rates of technology adoption and limited productivity in agriculture. Similarly, urban and rural locations can influence access.

For rural youth to profit from new technologies, investments are needed to expand broadband and physical infrastructure in rural areas. Equipping youth with the cognitive and non-cognitive skills they need to realize the promise of these technologies, anticipate their perils (e.g. indebtedness as a consequence of the temptations of easy-access mobile finance), and use them to their benefit is also needed (IFAD, 2019). Young people with the necessary skills and training may become digital facilitators and developers. The lower rates of enrolment of young women in science and technology-related subjects at secondary and tertiary levels (UNESCO, 2013), however, means they may be at a disadvantage in taking advantage of digital opportunities. Young women need to be targeted for education, training, and resources to support their participation in digital agriculture. Finally, the regulatory environment for the implementation of safe, affordable, and rapid transfer of digital solutions must be put in place (IFC, 2018).

## Value chain approaches

Value chain development is an important strategy to support local enterprises and improve market and wage employment opportunities (OECD, 2018). Strategies for supporting climate-smart value chains include improving access to input markets, supporting diversification and value addition, providing climate-smart production technologies, supporting access to CIS, and making financial and insurance services available. At the harvesting, processing, and marketing stages, strengthening farmer organizations, investing in roads and facilities for storage and processing, and improving access to markets are important (Mwongera et al., 2018).

Entrepreneurial youth engagement in value chains is often difficult due to challenging market conditions, imperfect information on inputs and markets, as well as poor infrastructure, all of which increases transaction costs and creates significant barriers to youth entry. Climate risks increase the need for access to finance—particularly from droughts, unpredictable rainfall, and flooding—which affect production, as well as the post-harvest stage, where traditional technologies may not be adequate to cope with changing climate conditions. The selection of value chains to be supported with CSA options needs to be based on the potential to increase the resilience of the poorest and most vulnerable associated with it, including young people.

Young women and men often work in less remunerative, easy-to-enter positions in agricultural value chains. A study in West Africa found that an estimated 64 percent of youth work in agri-food systems, primarily in low-level positions of the value chain, such as agricultural production (OECD, 2018). Investments in local value chain development in the agri-food sector could generate employment opportunities and food security. Support to increase capital and credit can enable youth to more easily enter, profit, and sustainably participate in value chains.

Research on youth engagement in Kenya's dairy value chain found that participation in dairy value chains is contingent upon a variety of geographic factors, such as roads and electrification, proximity to markets, availability of dairy infrastructure, and supporting institutions. These locally variable factors influence youth engagement in dairy and, without these fundamental pieces in place, dairy is not as attractive as a business opportunity (Bullock and Crane, 2020).

An inclusive value chain development approach will need to engage and empower young people through youth-targeted approaches. Youth must be encouraged to innovate

and fulfil roles as agents of change to actively transform agricultural markets (Pyburn et al., 2015). Along these lines, SNV recommends conducting sub-sector analyses to identify employment opportunities that may include processing, value addition, and potential areas for cross sector incubation (Parker-Twum, 2020). Njenga et al. (2011) recommend that youth specialise in specific components of the value chain and that organizations develop partnership programmes with financing institutions to ensure that resources are available for investment. Additionally, the potential of youth to develop, innovate, and take up technologies related to renewable resources is increasingly important.

# Conceptual Approaches

## Agency

The ability of young people to choose, navigate, and negotiate their futures and develop their adaptive capacity is essential. Promoting agency will support young people to pursue CSA options based on their identified priorities. Agency is “the ability to define one’s goals and act upon them” (Kabeer, 1999) and is constructed by, and interfaces with, social structures. Agency is a cornerstone of well-being for all individuals and societies and it is important that young people have the power to make decisions in their own best interest (IFAD, 2019). Young women and men negotiate choices and engage in bargaining in the context of specific social, political, and economic circumstances and processes (White and Wyn, 1998). Agency is influenced by many factors, but is also created and expressed through relations. While structural conditions influence youth agency and possibilities, youth should be regarded as active agents. In other words, “they negotiate contemporary economic and social changes through new and diverse ways of related to traditional transitional processes” (Wyn and White, 2000: 165). It is a useful starting point to consider the range of youth opportunities that exist, and the extent to which they can exercise choice through conscious actions and goal-directed activities, while embedded in cultural and relational networks (Wyn and White, 1998).

An individual’s agency is influenced and shaped by a multitude of geographic factors that interact across local, regional, and national scales. Sumberg and Okali (2013) use the term “opportunity space,” noting that geographic characteristics of a particular location, specifically the quality of natural resources and accessibility of markets, influence the types of viable work opportunities for youth. Social and relational factors, such as social difference, norms, and expectations, frame ways of being and doing in a community (Sumberg and Okali, 2013). For example, location, gender, and age intersect in ways that can severely curtail and create differences in young women’s and men’s agency.

Young women and men, in rural and urban locations around the world, exercise profoundly different levels of agency because of community and family norms. These norms influence social relations in which inequalities, based on age and gender, are reproduced and reinforced. Although economies are rapidly changing, gender norms have persisted in the face of economic and technological change in many places around the world (Petesch et al., 2018; Bullock and Tegbaru, 2019).

Community level norms influence social relations that shape young women’s and men’s agency in socially differentiated ways. Social relations in one’s family, within kin networks

and in the wider community, can perpetuate unequal power and benefits based on gender norms and age hierarchies that can significantly shape young people's lifelong abilities. Social norms regarding gender roles vary across geographies and shape livelihood options for young men and women as they transition into adulthood, especially in rural areas (IFAD, 2019). Being young, rural, and female may result in a "triple burden" that refers to having less human and physical capital accumulation, a lower labour force participation rate, lower productivity, and the associated lower welfare outcomes (IFAD, 2019).

The elements of this conceptual approach may be similarly applied to understand how youth may engage in and with CSA opportunities. In the following section, contextual factors that influence youth's agency to navigate spaces of opportunity in their communities will be discussed. Context refers to both temporal and spatial dimensions of a place, that includes geographic and social interactions within, across, and between household, community, regional, and global scales.

### **Structural and rural transformation**

In almost all parts of the world, the transition to adulthood is more complex because of the speed of neoliberal economic and social reforms, which have a profound effect on young people's experiences, government disinvestment in welfare measures, transnational economic competition, high rates of unemployment, and economic recession (Jeffrey and McDowell, 2004). Many of the changes that have accompanied structural and rural transformations are unfolding at a faster pace or in different ways than in the past. These demographic, economic, environmental, and technological changes simultaneously open some opportunities, while closing off others (IFAD, 2019).

These macroeconomic structures affect and constrain young people's opportunities (IFAD, 2019). Supporting agency is especially critical for the successful inclusion of youth in the rural transformation process, since rural youth tend to experience exclusion more than urban youth or adults (Trivelli and Morel, 2018).

### **Social inclusion and intersectionality**

Social inclusion is an approach for designing development goals that focuses on reaching excluded groups. It is based on the premise that "no person—regardless of ethnicity, gender, geography, disability, race, or status—is denied universal human rights and basic economic opportunities" (UN Secretary-General's High-Level Panel of Eminent Persons on the Post-2015 Development Agenda, May 2013 in World Bank, 2013).

Social inclusion is defined as:

- The process of improving the terms for individuals and groups to take part in society; and
- The process of improving the ability, opportunity, and dignity of those disadvantaged, on the basis of their identity, to take part in society (World Bank, 2013: 3-4).

This involves poverty reduction, access to opportunities, participation in political and economic life, and freedom from discrimination on the basis of age, gender, sexual orientation, or disability (Warschauer, 2003). In relation to youth, social inclusion addresses the poverty and other consequences of excluding youth from economic opportunities, governance, and other aspects of human development. For example, the Arab Spring was, in part, a consequence of the exclusion of educated youth from labour markets as well as political decision making and accountability (World Bank, 2013).

“An intersectional analysis of climate change illuminates how different individuals and groups relate differently to climate change, due to their situatedness in power structures based on context-specific and dynamic social categorisations” (Kaijser and Kronsell, 2014: 417). Roles and responsibilities that influence a person’s ability to deal with climate-induced and other stressors emerge at the intersection of diverse categories of identity, including, but not limited to, gender, age, seniority, ethnicity, marital status, and livelihoods. The integration of intersectional conceptualizations into research on global climate change is still under-developed, although intersectional framings could be more effectively used to support adaptation planning and programming (Thompson-Hall et al., 2016).

Intersectional approaches can be used to explore differences among any number of social categories. Developed by feminist scholars to better analyse the complexities of individual identities and social categories, such as gender, class, and ethnicity, they address how intersections among these categories give rise to multiple inequalities and oppressions, along with benefits and opportunities (Berger and Guidroz, 2009; Djoudi et al., 2016). Gender and age intersect and structure youth transitions and experiences (Elias et al., 2018). Gender is a critical factor in shaping the opportunities of young women and men, often articulated through social relations in the household and community and based on norms that tend to discriminate and disadvantage women more than men. Other categories, such as gender, education, or socioeconomic status, intersect with age as structuring young people’s positions in society (Langevang and Gough, 2012).

## Relational approaches

Norms are perpetuated through social relations that can limit the agency of young women and men, so that understanding the lives of young people entails an understanding of how they are positioned in, and relate to, families and societies (Gough et al., 2013). A relational approach highlights power relations and resource control across generations and genders, offering an approach to understand the diverse ways in which young people are situated in social institutions, how they shape their lives and opportunities, and the ways in which they negotiate life transitions (Wyn and White, 1997). Social embeddedness is also gendered in its influence on the opportunities available to young women and men (Flynn et al., 2017).

Their situation within families affects young women and men's agency in significant ways, especially in relation to decision-making. Power dynamics structure intra- and inter-generational relations (Elias et al., 2018). Young people are embedded in social relationships that influence their choices and opportunities in relation to, for instance, starting up informal businesses and deciding how to run them, figuring out whether and how to migrate to urban areas, or engaging with savings and loans (Flynn et al., 2013). Land ownership, experience, and education can influence youth agency and decision-making power (Amsler et al., 2017). For instance, the vast majority of African rural youth in developing countries live as dependants in large families and the characteristics of their households also help to shape their opportunities and challenges (IFAD, 2019).

### Box 2. Marriage, gender, and agency

Marriage is a significant relationship and life transition that has implications for agency and decision-making among young women. For example, in East African households, Amsler et al. (2017) found that perceptions of decision-making power differed between young women and men.

Men said that women contribute to decision-making, with final decisions made by men, while women said that women and men consulted each other in making decisions. Women were the sole decision makers if their husbands were not present. Women and men participants explained that they had decision-making power in their household about certain agricultural practices, based on their expertise. Thus, knowledge and experience were deemed to be qualifying factors to be a decision maker in the household. Examples of this division of agricultural labour was most obvious in Lushoto, Tanzania, where both women's and men's groups agreed that, typically, men are responsible for cash crops while the women are responsible for, and thus have decision making power over, household gardens or subsistence farming close to the home (Tanzanian case study – Amsler et al., 2017).



Research which explores the relationship between support for youth collective agency through groups and collective action is lacking. In Lesotho and Uganda, Hartley (2013) found that cooperatives encourage youth members to learn “from” and “with” each other, leading to new ways of thinking and action. These findings reinforce the need for a youth policy in the African cooperative movement. While the role of collective organizing for civic and political participation is well researched, there is less information about the role of youth groups in agriculture in the Global South and the roles these groups may play in supporting agency, knowledge, and access to skills. Research in East Africa has found that youth groups can support peer-to-peer learning, the pooling of resources, joint land rentals, engagement in mutual lending and borrowing, and the sharing of information (Bullock and Crane, 2020).

Social platforms activated by youth can be important vehicles for promoting sustainable change. For example, the Young Professionals for Agricultural Development (YPARD),<sup>20</sup> “an international movement made by young professionals for young professionals,” is a global network with more than 15,000 members from 168 countries. YPARD supports young professionals to contribute to innovative and sustainable agricultural development. It also engages with different stakeholders around policy development and represents youth interests in political forums at different levels.

The Climate Smart Agriculture Youth Network (CSAYN)<sup>21</sup> is a group of global volunteers that share interests in CSA and the environment. The purpose of the network is to educate younger generations about increasing productivity in the context of climate change adaptation and mitigation. Its Development Dgroups online platform enables members to share findings and ask for advice from others on practical projects in their regions.

## **Methods for youth research**

In conducting youth research, different approaches are needed in different contexts. Youth research should, at a minimum, be disaggregated by age and sex. Mixed methods, or a combination of qualitative and quantitative approaches, should be used. Youth-responsive social analysis examines the youth dimension of social systems that are relevant to a project, to inform youth-responsive project design, implementation, and monitoring and evaluation (World Bank, 2006). Life cycle approaches and youth transition studies are also useful disciplinary approaches to understand transitions and economic aspirations and

<sup>20</sup> <https://ypard.net/>

<sup>21</sup> <http://csayn.org/>

opportunities. A life cycle approach can also be useful to understand life transitions, ambitions, and related economic opportunities (World Bank, 2003).

Participatory and action-based approaches may be useful in conducting youth and climate related research. Games can be used to stimulate action and the integration of real-life behaviour change, into and through gaming, is potentially an effective strategy (Vervoort, 2019). These approaches can highlight youth-specific issues in climate change as well as priority areas for engaging young people in CSA. Because of their interactivity and immersive narrative, games can be particularly useful to convey the problems that young people may face in the future and enable them to experiment with responses to these problems (Ouariachi et al., Olvera-Lobo and Gutiérrez-Pérez, 2017). The game sector can be used to engage players around issues of sustainability and future worlds, while encouraging them to engage in their own meaning-making (Bendor et. al., 2017). More research is needed to investigate how games add to social common understanding and this exercise can lead to behaviour change (Vervoort, 2019).

Research should be action oriented and findings and recommendations shared within networks and forums to support the inclusion of youth perspectives in climate policy. Examples include policy briefs for policy makers and the use of video to promote youth voices in media. Through wider distribution of youth voices at the individual level, social media, such as Instagram, Facebook, and Twitter, can promote wider transformational change around youth perspectives.

## CCAFS research questions

Five priority research areas have been identified to support CCAFS youth in CSA initiatives, including: (1) understanding the situation, aspirations, and perspectives of youth; (2) understanding youth responses to climate-induced changes that include migration and conflict; (3) capacity development in relation to CSA and climate change; (4) the potential for digital technologies to support economic opportunities; and (5) youth-inclusive policy development processes.

### Understanding context

1. What types of agricultural work do young women and men engage in? Do these differ by product, by profit, or any other key characteristics? Do women and men work predominantly in any one sector or type of work?
2. What are young women and men from different socioeconomic backgrounds, classes, cultures, and contexts doing in agriculture? For example, in paid and unpaid labour tasks, their position in value chains, their control over household and farm resources (including land), and on whose farms (e.g. parents, kin, husbands/wives)?
3. How and where do young women and men participate in key value chains and/or food systems? Do youth tend to participate in lower, less remunerative positions and are these positions equally occupied by young women and men? Why or why not?
4. Where are the current CSA value chain opportunities for young women and men? Which sectors? What future opportunities could be created? How could IT/ICT solutions support youth participation in CSA value chains? What are the gaps in support and knowledge needed by youth to improve their position in CSA value chains?
5. How does participation in the value chain serve as a way for youth to navigate youth transitions, such as completion of school, searching for a job, or marriage?
6. What value chain business models generate youth interest in agriculture, especially educated youth? What are the roles of social networks and collectives for youth?
7. Who has access to and control over productive assets, especially land?
8. How do intra-household dynamics, social relations in the community, and gender norms influence the different opportunities for young women and men to exercise agency, gain access to assets, markets, and new technologies, control resources and income, and participate in value chains?

9. Who is using and/or innovating with on and off-farm technologies in mixed crop and livestock systems to commercialise, intensify, and/or diversify? What are the intergenerational outcomes for household members in trying out climate smart innovations, e.g. labour, income? Who benefits from the uptake and adoption of new adaptation practices?
10. What are the existing and potential linkages between finance and capital that may better support uptake and development of new, climate-resilient technologies and practices, some of which can provide a source of self-employment or support entrepreneurial ventures?

### **Awareness and knowledge**

1. What are the adaptation and mitigation preferences and options of young women and men? What are their options for participation in decision making around climate responses at the household or community level?
2. What are their aspirations for agricultural or non-agricultural work? What opportunities are available to them and in what context?
3. What are existing mechanisms for sharing information among and with young people? What types of information are shared and does access vary across different groups of young women and men?
4. What are existing mechanisms and models to support peer-to-peer learning (e.g. youth groups) or non-youth groups that young people participate in, such as savings groups, community, and national level CSA platforms and networks?
5. What capacity building efforts are needed to support the role of CSA as a promising, profitable, and sustainable source of youth livelihoods?

### **CSA digital innovation and economic opportunity**

1. What are the existing and potential ways that young women and men adopt, adapt, or create ICT technologies and engage in CSA processes?
2. What are the climate information needs of young people and how could these be used to strengthen youth entrepreneurship and climate resilience?
3. Does a gender bias exist with reference to young women and men's differential access to, ownership of, use, and skills with ICTs? What strategies and priorities can address and counteract these biases and differences?
4. What are the existing and potential opportunities for self-employment and entrepreneurship within CSA value chains based on digital technologies?
5. What investment models or financial mechanisms can promote youth access to finance? Memberships in youth-only groups may enhance access to capital, assets,

and information in ways that membership in cross- generational cooperatives do not. What role can financial models, such as youth empowerment funds, play in assisting groups to take business ideas to scale?

6. What is the role of youth in dissemination of information on CSA practices and technologies via digital or other platforms?

### **Climate-related conflict**

1. How do young women and men adapt to changing climate scenarios? What are current practices? What are youths' roles in adoption and implementation of new CSA practices in households and communities?
2. What strategies will and can young women and men implement to better adapt to climate change?
3. How do climate stresses, migration, and conflict interact with other, non-climate, factors to shape young women's and men's priorities in investing in CSA/agriculture vs. urban or employment-related migration?
4. How do climate stresses and conflict affect migration options and patterns of young women and men?

### **Youth and policy**

1. Are youth concerns and issues reflected in climate and agricultural policies and, if so, which youth issues?
2. What climate and agriculture-related policy forums, platforms, and processes do young women and men participate in, if any?
3. How do young women and men participate in climate decision-making processes at local, regional, national, and international levels?
4. What are the gaps and potential opportunities and models for youth engagement in local, regional, national, and international climate and agriculture policy forums?
5. What mechanisms for youth civic engagement in climate currently exist and how effective are these mechanisms? What can be done to improve them?
6. Who participates in creating national youth policies and programmes?
  - a. Do rural and urban youth participate, or less well-educated youth, participate in decision-making processes? If so, how does participation shape the content and focus of youth policies or the integration of youth issues in climate/agriculture policies?
7. How does IT/ICT support youth voices and action in civic spaces?

8. How could IT/ICT solutions support intergenerational relationships in climate policy spaces, such as communication mechanism between youth and adults of different age groups?
9. How might IT/ICT be used to bridge rural-urban geographies to ensure that rural youth's concerns and needs are addressed in climate and agricultural policies?

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## Annex

Table 1: Definition of youth in CCAFS countries

Country	Definition of youth (years)	Source
Bangladesh	18-35	National Youth Policy
Burkina Faso	15-35	National Youth Policy
Cambodia	15-30	National Policy on Youth Development
Colombia	14-26	National Youth Policy and Youth Law
El Salvador	15-24	National Youth Policy and Action Plan and Youth Law
Ethiopia	15-29	National Youth Policy
Ghana	15-35	National Youth Policy
Guatemala	13-30	National Youth Policy
Honduras	12-30	National Youth Policy
India	15-29	National Youth Policy
Kenya	15-30	Youth Development Policy
Lao PDR	15-30	Lao People's Revolutionary Youth Union (LYU)
Mali	No fixed age. 15-40 & 10-35	National Youth Employment Program
Myanmar	16-18	Child Law and National Youth Policy
Nepal	16-40	National Youth Policy
Nicaragua	18-30	National Youth Policy
Philippines	15-30	National Youth Policy ; Youth in Nation-Building Act
Senegal	15-35	Plan of Action for Youth
Tanzania	15-35	National Youth Development Policy
Uganda	12-30 & 15-29	National Youth Policy (Popular Version)
Vietnam	16-30	Youth Development Strategy



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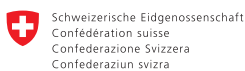
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