

# Engaging Youth in Climate-Smart Agriculture

## THE CONTEXT AND IMPORTANCE OF CLIMATE-SMART AGRICULTURE

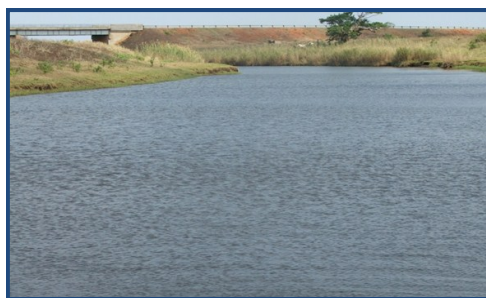
Sub-Saharan Africa (SSA) has a unique population profile, with 44% of its population under the age of 15 in 2006, making it the youngest region of the world. Agriculture employs 65% of Africa's labour force and accounts for 32% of gross domestic product. However, climate change exacerbates the low performing smallholder agriculture sector across Africa.

Today, two out of three inhabitants of SSA are under 25 years of age. Africans aged 15 to 24 are projected to reach 350 million by 2050. Young Africans are therefore the key to African agricultural development, even in the smallholder agriculture sector, which currently offers few opportunities for today's youth. However, many are unable to fulfil their potential because of poverty, hunger, poor health and lack of education.

The average age of the African farmer is over 50 years but farming is perceived by many young people as old-fashioned and offering little opportunity for a productive future, so they seek well-paid jobs in towns and cities. However, the majority of them lack the skills needed to gain employment in other formal sectors. There is thus an urgent need to encourage them to be involved in the agricultural sector, especially in the rural areas, where underemployment is prevalent.

Growing awareness of agricultural opportunities is critical – in engineering, production, marketing, research, transport, processing, Information and Communication Technologies (data management and GIS). And although these opportunities exist, accelerating climate change will continue posing additional challenges.

Agricultural production and food security in Africa urgently need to be enhanced and this requires strengthening agricultural systems to be more capable of performing well in the face of adverse events. Under the threat of climate change, innovative solutions are even more urgent. Another reason why the youth are the future of African agriculture is that they are more likely than the older farmers to understand and use new technologies to develop the sector and respond to the challenges posed by climate change.



Climate-Smart Agriculture ranges from conservation agriculture, watershed and land management to adaptive crop and livestock farming practices

## CLIMATE-SMART AGRICULTURE

Climate-smart agriculture is agriculture that sustainably increases productivity and resilience, and reduces greenhouse gas emissions. It combines innovative ways of managing land, water and soil for more efficient production and resilient systems.

Climate-smart agriculture is based upon existing effective climate-smart practices that could be scaled out for implementation in developing and developed countries, in various agricultural systems. According to [FAO](#) (2010), various agricultural practices can help to increase climate resilience and productivity for smallholder farmers, while reducing emissions. Often, several of these practices may be implemented simultaneously to maximise synergies and to give higher yields. However, the optimum application of these techniques varies across different agro-ecological and agro-climatic situations.

An integrated approach is needed for conserving, upgrading, and using the natural resource base of land, water, plant, animal and human resources, and for linking these resources. Such linkages can be achieved through research on water issues – for example, by doing basin water balances, water use accounting models, land use maps, and livelihood mapping; and through knowledge management platforms such as river basin knowledge banks and Young Professionals networks.

Variations of climate-smart agriculture are currently practiced in Malawi, Mozambique, Zambia and Zimbabwe, among other African countries. The climate-smart agriculture practices that are most common in the southern African region are conservation agriculture, agro-forestry, mixed livestock and cropping systems, and improved crop varieties. As such, southern Africa has been identified as a region suitable for rapid scaling-up of these climate-smart agriculture approaches.

Currently, there are no documented cases of youth involvement in climate-smart agriculture (CSA).

## CHALLENGES IN INVOLVING THE YOUTH IN CSA

### **Lack of enabling policy environment and platforms for youth engagement in CSA**

Regional, national and international policies do not reflect the need for consistent and comprehensive approaches for engaging young people in developing the agricultural sector, addressing climate change, and safeguarding food security. There are few, if any, incentives for them to take advantage of the available opportunities and the potential of new technologies aimed at recuperating agricultural productivity.

### **Lack of research for development in CSA**

CSA requires research in order to further develop and constantly incorporate new innovations. Young professionals are at the helm of research as the future of the agriculture sector. However, research opportunities in CSA are not always well presented to the youth, and tools and knowledge on CSA are not well developed and shared. Investment in education, capacity development and communication would go a long way towards engaging the youth in CSA.

### **Lack of access to productive resources for CSA**

Land ownership is an Africa-wide challenge, as older people tend to own or control the land. As land is the major requirement for CSA, the youth need access to this resource. In addition to land, CSA practices and technologies require other major investments, requiring coordinated financial mechanisms from different sources.



## INTERVENTIONS

There are different elements of CSA, ranging from conservation agriculture, watershed and land management to adaptive crop and livestock farming practices. This policy brief will look at two cases that promote the youth's involvement in CSA.

- strengthening evidence-based climate change adaptation policies (SECCAP), and
- conservation agriculture in Zambia.

### **Strengthening evidence-based climate change adaptation policies**

The first case is based on FANRPAN's SECCAP project. This is a research-oriented and knowledge-sharing initiative that seeks to address knowledge gaps in CSA, including the following:

- **Gaps in optimising crop management:** This gap is addressed by providing a comparative analysis of current adaptation management strategies including: optimised fertiliser application, sustainable tillage practices, crop rotation and intercropping, and how these can be used to increase crop yield.
- **Gaps in understanding linkages between climate change and crop development:** The SECCAP project looks at ways to enhance understanding of the impacts of climate change on crop development using various tools such as downscaling and crop modelling. A better understanding of these systems will lead to effective farm management decisions and planning including: when to plant, how much fertiliser to apply during the growing season, and what types of cultivar to plant. In addition, this will contribute towards the development of drought-tolerant and heat-tolerant crop varieties.
- **Gaps in cost-benefit analyses of CSA:** There has been no cost-benefit analysis of local CSA initiatives. The SECCAP project estimates the benefits and costs of implementation technologies and initiatives on CSA.
- **Gaps in household vulnerability information:** Smallholder farmers must mobilise their asset base (human, social networks, financial, natural and physical), and craft locally appropriate strategies to adapt to climate risks, if they are to reduce poverty and hunger in Africa. However, the need to reduce farmers' risks and increase their resilience should be viewed within the context of the complex, highly diversified livelihood strategies and multiple vulnerabilities they face. The SECCAP project uses the household vulnerability index (HVI) tool to assess the vulnerability of households to climate risks on the

basis of their livelihoods assets, including natural assets.

- **Gaps in options for policy response:** The SECCAP project builds policy dialogue platforms that provide for open and transparent, two-way exchanges to capture the voices of all stakeholders.

A key part of the project is the training of graduate students and post-graduate fellows in technical fields that include climate and crop modelling, cost-benefit analysis, and human vulnerability assessments. Ten students are currently part of the project, generating evidence on CSA, and thus developing future leaders into knowledge experts.

Additionally, partnerships with universities ensure that public institutions are the caretakers of cutting-edge information. This information will remain accessible to private, public and social sectors alike. Research organisations are helping to coordinate knowledge sharing. The dissemination strategy takes an aggressive approach, where CSA information is packaged for different audiences. The project is focused on the sustainability of agriculture in the future as the climate changes and on what farmers (today's youth) should prepare for.

### **Conservation agriculture in Zambia**

The second case study looks at conservation agriculture (CA) and how it has been practiced in Zambia. Zambia presents an example of how CA has been used over the years and the results it can produce. The case study shows that CA has been practiced for a long time in Zambia and that the youth have something to learn as they engage in CSA.

CA is a package of agronomic practices that have been promoted in Zambia by a coalition of stakeholders from the government, development partners and the private sector, since the mid- 1990s. The system is comprised of dry-season land preparation using minimum tillage methods and fixed planting stations (small shallow basins); retention of crop residue from the prior harvest in the field or use of other mulches/groundcovers; and rotation of crops in the field. Over 180,000 farmers used this system at the end of 2010, and this figure was projected to rise to 250,000 farmers by 2011 – representing some 30% of the population of small-scale farmers in Zambia.



The scaling up programme has recently added an agro-forestry component – the planting of *Faidherbia albida* – to provide mulch and nutrients. These practices have been found to be highly profitable, and not only because of their impact on soil health. By eliminating the need for laborious land preparation, farmers adopting the system have been able to plant closer to the onset of the rains. That alone has had a significant impact on yields, which have doubled for maize and increased by 60% for cotton using conservation farming, as compared to conventional ploughing systems. The programme has thus been able to achieve the triple win of enhanced productivity, resilience and carbon sequestration ([World Bank, 2008](#)).

## RECOMMENDATIONS

- There is a need to make CSA activities attractive and accessible to the youth. This means exploring and introducing more business and market-oriented approaches to agriculture for youth engagement in the sector, as well as making the agricultural sector a more productive and attractive profession.
- Government, private sector and development partners need to play a central role in the development of CSA technologies, especially in creating new employment opportunities for young people, nurturing linkages between education and business, and improving access to markets, financial services and innovation, as well as in the transfer of technology and skills.
- Existing good practice cases on CSA must be documented and shared for the benefit of the youth.
- Regional platforms and other awareness mechanisms must be created to increase the uptake of CSA initiatives by the youth.

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## About FANRPAN

The Food, Agriculture and Natural Resources Policy Analysis Network (FANRPAN) is an autonomous regional stakeholder driven policy research, analysis and implementation network that was formally established by Ministers of Agriculture from Eastern and Southern Africa in 1997. FANRPAN was borne out of the need for comprehensive policies and strategies required to resuscitate agriculture. FANRPAN is mandated to work in all African countries and currently has activities in 16 countries namely Angola, Botswana, Democratic Republic of Congo, Kenya, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, South Africa, Swaziland, Tanzania, Uganda, Zambia and Zimbabwe.

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