Crop sector development strategy for Eastern Africa

2021–2026
Crop sector
development strategy
for Eastern Africa

2021–2026

Food and Agriculture Organization
of the United Nations
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I am delighted to present the Crop sector development strategy for Eastern Africa 2021–2026. This Strategy is an important tool for a unified approach to increasing crop production and productivity.

The Strategy defines a series of goals and interventions agreed by representatives of the Ministries of Agriculture from the countries within the jurisdiction of the Food and Agriculture Organization of the United Nations (FAO) Subregional Office for Eastern Africa, as well as inputs from FAO representatives in the member countries, the East African Community Secretariat, the Intergovernmental Authority on Development Secretariat, the Desert Locust Control Organization for Eastern Africa and the CGIAR centres.

Crops in Eastern Africa make up about 85 percent of overall food utilization. Unfortunately, recurrent drought, poor soil fertility, increasing occurrences of plant pests and diseases, and lack of access to improved technologies and advisory services contribute to significantly lower productivity when compared with any other region of the world. Coordinated efforts on behalf of FAO and partners are required to strategically confront the growing list of limitations hindering increased agricultural production and productivity in Eastern Africa.

The Strategy focuses on presenting a holistic approach to improving crop production and productivity through a unified approach. In practical terms, this should be seen as a starting point for programmes and initiatives aimed at growing crops better, bridging yield gaps, feeding people with more nutritious food and enabling farmers to practice agriculture as a business so that they are better positioned to support their families. The higher aim of the Strategy is to contribute to the realization of the goals of the African Union, as enshrined in the Malabo Commitments to end hunger through accelerating agricultural growth by at least doubling agricultural productivity levels and halving levels of post-harvest losses by the year 2025.

FAO continuously supports member countries, Regional Economic Communities and strategic partners and organizations to develop new ideas and mobilize resources for agricultural development and food security and nutrition programmes. This Strategy will contribute to our partners’ abilities to develop the necessary new ideas and resource mobilization initiatives in the crop sector to:

1. Put in place an enabling policy environment that facilitates sustainable use of productivity-enhancing inputs;
2. Strengthen institutional capacity building to enhance crop production and protection that leads to self-sufficiency;
3. Support availability, accessibility and affordability of crop productivity-enhancing inputs in the subregion;
4. Improve post-harvest management and promote value addition;

5. Improve market access by crop-producing farmers in the subregion; and

6. Address cross-cutting issues such as youth and women, climate-smart agriculture, digital agriculture and urban and peri-urban agriculture systems.

The FAO Subregional Office for Eastern Africa will support and coordinate national efforts by collaborating with development partners in the public, private, civil society and research arenas to implement the necessary steps to improve crop production and productivity across the Eastern African subregion. FAO will provide technical support as well as partner with the relevant partners in resource mobilization through South-South Cooperation, the Hand-in-Hand Initiative and Transformative Partnerships.

FAO is committed to achieving the overall goal of ending hunger, food insecurity and malnutrition in the world through better rural livelihoods, improved agricultural productivity as well as through the contribution to the sustainable growth of national and regional economies. This Strategy serves as another critical element in the repertoire of tools at our disposal that will ensure that we are on the right path towards achieving these objectives without leaving anyone behind.

Dr Chimimba David Phiri
FAO Subregional Coordinator for Eastern Africa and Representative to the AU and UNECA
## Abbreviations and acronyms

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>AEAS</td>
<td>Agricultural extension and advisory services</td>
</tr>
<tr>
<td>AFAAS</td>
<td>African Forum for Agricultural Advisory Services</td>
</tr>
<tr>
<td>AFCFTA</td>
<td>African Continental Free Trade Area</td>
</tr>
<tr>
<td>Agra</td>
<td>Alliance for a Green Revolution in Africa</td>
</tr>
<tr>
<td>ASARECA</td>
<td>Association for Strengthening Agricultural Research in Eastern and Central Africa</td>
</tr>
<tr>
<td>AUC</td>
<td>African Union Commission</td>
</tr>
<tr>
<td>AU-IAPSC</td>
<td>Inter-African Phytosanitary Council of the African Union</td>
</tr>
<tr>
<td>CAADP</td>
<td>Comprehensive Africa Agricultural Development Programme</td>
</tr>
<tr>
<td>CABI</td>
<td>Centre for Agriculture and Bioscience International</td>
</tr>
<tr>
<td>CGIAR</td>
<td>Consultative Group on International Agricultural Research</td>
</tr>
<tr>
<td>COMESA</td>
<td>Common Market for Eastern and Southern Africa</td>
</tr>
<tr>
<td>CSA</td>
<td>Climate-smart agriculture</td>
</tr>
<tr>
<td>CTA</td>
<td>Technical Centre for Agriculture and Rural Cooperation</td>
</tr>
<tr>
<td>DLCO-EA</td>
<td>Desert Locust Control Organization of Eastern Africa</td>
</tr>
<tr>
<td>EAC</td>
<td>East African Community</td>
</tr>
<tr>
<td>EAGC</td>
<td>East African Grain Council</td>
</tr>
<tr>
<td>EACSSA</td>
<td>Eastern Africa CSA Alliance</td>
</tr>
<tr>
<td>EAFF</td>
<td>Eastern Africa Farmers Federation</td>
</tr>
<tr>
<td>EIAR</td>
<td>Ethiopian Institute for Agricultural Research</td>
</tr>
<tr>
<td>FAMEWS</td>
<td>Fall Armyworm Monitoring and Early Warning System</td>
</tr>
<tr>
<td>FAO</td>
<td>Food and Agriculture Organization of the United Nations</td>
</tr>
<tr>
<td>FAO-SFE</td>
<td>FAO Subregional Office for Eastern Africa</td>
</tr>
<tr>
<td>FAOSTAT</td>
<td>FAO corporate database that offers free access to food and agriculture data for over 245 countries and territories and covers all FAO regional groupings from 1961 to the most recent year available</td>
</tr>
<tr>
<td>FAW</td>
<td>Fall Armyworm (Spodoptera frugiperda)</td>
</tr>
<tr>
<td>GDP</td>
<td>Gross domestic product</td>
</tr>
<tr>
<td>GFAR</td>
<td>Global Forum on Agricultural Research and Innovation</td>
</tr>
<tr>
<td>GFRAS</td>
<td>Global Forum for Rural Advisory Services</td>
</tr>
<tr>
<td>GIEWS</td>
<td>Global Information and Early Warning System</td>
</tr>
<tr>
<td>GM</td>
<td>Genetically modified</td>
</tr>
<tr>
<td>IAPSC</td>
<td>Inter-African Phytosanitary Council</td>
</tr>
<tr>
<td>ICT</td>
<td>Information and communications technology</td>
</tr>
<tr>
<td>Acronym</td>
<td>Full Form</td>
</tr>
<tr>
<td>---------</td>
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</tr>
<tr>
<td>IFDC</td>
<td>International Fertilizer Development Corporation</td>
</tr>
<tr>
<td>IFPRI</td>
<td>International Food Policy Research Institute</td>
</tr>
<tr>
<td>IGAD</td>
<td>Intergovernmental Authority on Development</td>
</tr>
<tr>
<td>ILO</td>
<td>International Labour Organization</td>
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<tr>
<td>IPM</td>
<td>Integrated pest management</td>
</tr>
<tr>
<td>IPPC</td>
<td>International Plant Protection Convention</td>
</tr>
<tr>
<td>ISABU</td>
<td>Institut de Sciences Agronomiques du Burundi</td>
</tr>
<tr>
<td>ITC</td>
<td>International Trade Centre</td>
</tr>
<tr>
<td>KALRO</td>
<td>Kenya Agriculture and Livestock Research Organization</td>
</tr>
<tr>
<td>MFIs</td>
<td>Micro finance institutions</td>
</tr>
<tr>
<td>MoA</td>
<td>Ministry of Agriculture</td>
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<tr>
<td>NARI</td>
<td>National Agricultural Research Institute</td>
</tr>
<tr>
<td>NARO</td>
<td>National Agricultural Research Organization</td>
</tr>
<tr>
<td>NARS</td>
<td>National Agricultural Research System</td>
</tr>
<tr>
<td>NGO</td>
<td>Non-governmental organization</td>
</tr>
<tr>
<td>NPPO</td>
<td>National Plant Protection Organization</td>
</tr>
<tr>
<td>OPIM</td>
<td>Operational Partners Implementation Modality</td>
</tr>
<tr>
<td>RAB</td>
<td>Rwanda Agriculture and Animal Resources Development Board</td>
</tr>
<tr>
<td>RECs</td>
<td>Regional Economic Communities</td>
</tr>
<tr>
<td>RUAF</td>
<td>Global Partnership on Sustainable Urban Agriculture and Food Systems</td>
</tr>
<tr>
<td>SAMA</td>
<td>Sustainable Agricultural Mechanization: A Framework for Africa</td>
</tr>
<tr>
<td>SDGs</td>
<td>Sustainable Development Goals</td>
</tr>
<tr>
<td>SP</td>
<td>Strategic pillars</td>
</tr>
<tr>
<td>SPS</td>
<td>Sanitary and phytosanitary</td>
</tr>
<tr>
<td>SSA</td>
<td>Sub-Saharan Africa</td>
</tr>
<tr>
<td>STDF</td>
<td>Standards and Trade Development Facility</td>
</tr>
<tr>
<td>SWOT</td>
<td>Strengths, weaknesses, opportunities and threats</td>
</tr>
<tr>
<td>TCP</td>
<td>Technical Cooperation Programme</td>
</tr>
<tr>
<td>UNECA</td>
<td>United Nations Economic Commission for Africa</td>
</tr>
<tr>
<td>UNHCR</td>
<td>United Nations High Commissioner for Refugees</td>
</tr>
<tr>
<td>UPA</td>
<td>Urban and peri-urban agriculture</td>
</tr>
<tr>
<td>USAID</td>
<td>United States Agency for International Development</td>
</tr>
<tr>
<td>WFO</td>
<td>World Farmers’ Organisation</td>
</tr>
<tr>
<td>WTO-SPS</td>
<td>Sanitary and Phytosanitary Agreement of the World Trade Organization</td>
</tr>
<tr>
<td>WVC</td>
<td>World Vegetable Center</td>
</tr>
</tbody>
</table>
The Food and Agriculture Organization of the United Nations Subregional Office for Eastern Africa (FAO-SFE) in Addis Ababa, serves as the first port of call for advisory and technical support to nine member countries through a multidisciplinary team of technical officers.

The member countries are the Republic of Burundi, the Republic of Djibouti, the State of Eritrea, the Federal Democratic Republic of Ethiopia, the Republic of Kenya, the Republic of Rwanda, the Federal Republic of Somalia, the Republic of South Sudan and the Republic of Uganda.

FAO-SFE guides agricultural policy development in the subregion by supporting the member countries and Regional Economic Communities (RECs) in agricultural development; resilience building and resource mobilization for agriculture; development of agribusiness and agricultural value chains; and assists in the development of standards and sharing of best practices in agriculture and food security. FAO-SFE is responsible for developing, promoting, overseeing and implementing agreed strategies for addressing subregional food security, nutrition, agriculture and rural development priorities, thereby contributing to FAO’s overall goal of ending hunger, food insecurity and malnutrition through the sustainable use of natural resources.

The Eastern African subregion is one of the poorest regions in the world, with chronic food security problems. There is a heavy reliance on subsistence agriculture and the region struggles with the adverse effects of high population growth, low agricultural productivity, poorly developed marketing and value addition and severe degradation of natural resources. Biotic and abiotic stresses as well as socio-economic factors contribute to low productivity of crops.

On the other hand, the subregion is endowed with ample renewable and non-renewable natural resources such as water and minerals, a large young and educated workforce, an attainable potential crop yield gap, presence of regional economic communities such as
the East African Community (EAC) and the Intergovernmental Authority on Development (IGAD) and untapped investment opportunities. The subregion is the fastest growing region in Africa and even the world. A few of the opportunities available for developing agriculture and crop production comprise the increasing global demand for food crops, regional partnerships, the flow of market information and the organic agriculture sector. To tap the existing opportunities, major challenges need to be dealt with, including low-input low-output agricultural practices, the impact of climate change and biotic and abiotic stresses including transboundary crop pests and diseases.

Most countries in the Eastern African subregion have pro-agricultural development policies. The governments of the major crop-producing countries such as Burundi, Ethiopia, Kenya, Rwanda and Uganda are committed to developing the agriculture sector by allocating a generous proportion of their national expenditures. Nevertheless, there is still a wide gap to bridge to catch up with the Comprehensive Africa Agriculture Development Programme (CAADP)/Malabo commitments of allocating at least 10 percent of a country's national public expenditure to agriculture. According to the 2019 report to the February 2020 African Union (AU) assembly, for a country to be on track to implement the CAADP Malabo Declaration, only four countries (Ghana, Mali, Morocco and Rwanda) are on track with a minimum score of 6.66 out of 10. All the countries in the Eastern African subregion except Rwanda are not on track, calling for immediate attention of the governments to fulfil their commitments.

The Crop sector development strategy for Eastern Africa 2021–2026 is designed in consultation with the FAO-SFE member countries. The objective is to guide FAO’s strategic support to countries in the subregion, enhance food and nutrition security, increase incomes and improve livelihoods through increased crop production and productivity and thereby contribute to ending hunger and extreme poverty.

Five strategic pillars were identified: i) an enabling policy environment; ii) a strong institutional environment; iii) enhanced crop production and productivity; iv) processing and value-addition; and v) market access. Main strategic goals were identified and priority intervention areas proposed under each strategic pillar, including incentives to promote local production and supply of agricultural inputs; support to research and development for crop production, enhancement of the seed system and management of transboundary plant pests and diseases. In addition, cross-cutting issues that are pertinent to inclusive and sustainable crop sector development in the subregion were identified. These include youth and women in crop production, climate-smart agriculture (CSA), digital approaches in agriculture and providing support to urban and peri-urban agriculture.

A framework for action and involvement of national, regional and international bodies are indicated based on the goals defined under the strategic pillars and priority interventions. The role of public, private and civil society bodies is indicated in the strategy. Implementation of the strategy will align with existing policies and
The South-South Cooperation and the FAO’s Hand-in-Hand Initiative are indicated in this strategy as unique opportunities through which partners across the public, private and other sectors can work together.

strategies of the member countries and global and regional initiatives such as the International Code of Conduct for the Sustainable Use and Management of Fertilizers and the Sustainable Agricultural Mechanization for Africa. The African Continental Free Trade Area (AfCFTA) will be an opportunity for enhancing the impact of specific projects and programmes out of this strategy to improve livelihoods of the crop producers in the subregion.
1. Setting the scene

This section sets out the background to the Crop sector development strategy for Eastern Africa 2021–2026, explains why the strategy is necessary, the important production constraints it must address and the role of FAO in supporting initiatives to improve productivity.

1.1 Rationale for a Crop sector development strategy for Eastern Africa 2021–2026

The Eastern African subregion is one of the poorest regions in the world and has chronic food security problems. There is a heavy reliance on smallholder agriculture and the subregion struggles with the adverse effects of high population growth, low agricultural productivity, poorly developed markets and value addition and severe degradation of natural resources. Biotic and abiotic stresses, as well as adverse social and economic conditions, contribute to low crop yields and production.

Although natural resources are being depleted and access is often contested among poor and marginalized farmers, the subregion has vast untapped potential to produce more crops and increase productivity. It has a large young and educated workforce, forward-looking Regional Economic Communities (RECs) such as the EAC and IGAD, as well as untapped investment opportunities.

National governments are addressing years of neglect on agricultural policies and are actively pursuing new directions to reinvigorate the crop sector. Strategies to support the crop sector are being supported by donors and development agencies, and there is a common purpose on the need to identify and respond to challenges and opportunities to improve crop productivity.

The fundamental needs for a crop sector development strategy are clear, but the challenges are diverse and complex. Challenges include crop
production systems that are low-input and low-output, access to quality seeds, climate change, pest and disease threats, and weak agricultural extension and advisory services (AEAS). This subregional crop sector development strategy aims to identify key areas and topics where collective and targeted action is needed to deliver change and improvement to productivity and sustainability.

1.2 Crop production constraints

Low agricultural productivity in Eastern Africa led to a persistent food insecurity that negatively affects the overall economic and social performance of the governments in the subregion, in part fuelling insecurity and political instability of the subregion. According to the FAO’s Global Information and Early Warning System (GIEWS) report (March 2020), globally 44 countries, of which 34 are in Africa, continued to need external assistance for food, with conflicts being the primary cause of high levels of food insecurity. Furthermore, adverse weather conditions affect access to food and its availability for millions of people. According to this report, eight of the nine SFE countries with the exception of Rwanda, are on the list of 32 countries in Africa that continue to need external assistance for food (FAO, 2019).

Crop productivity in Eastern Africa is significantly lower than in any other region of the world (Figure 1). An African Development Bank report indicates that staple cereal crop yields are about a half to one-third of their potential without the proper application of fertilizers, irrigation and seeds (Salami et al., 2010). Major constraints hindering crop production range from recurrent drought, low soil fertility, the prevalence of major crop disease and pests (Boa et al., 2015) and the regular introduction of new ones, such as Fall Armyworm (FAW), a devastating insect pest on maize and other staple crops (Table 2). Desert locust invasions occurred and caused significant damage to crops and forages in some countries of the Eastern African subregion like Djibouti, Eritrea, Ethiopia, Kenya and Somalia (FAO, 2020). A lack of access to improved crop technologies, inadequate AEAS and limited rural finance all contribute to low

Figure 1. Productivity of crops in Eastern Africa and other parts of the world, 2018

| Productivity of crops in Eastern Africa and other parts of the world, 2018 |
|-----------------------------|-----------------------------|
| **Yield (t/ha)**            | **World** | **Africa** | **Eastern Africa** | **Northern Africa** | **Southern Africa** | **India** | **Mexico** | **Brazil** |
| Cereals                     | 4.1       | 1.6        | 1.8                | 2.0                  | 4.2                  | 3.2       | 3.8       | 4.8        |
| Roots & Tubers              | 13.4      | 8.5        | 8.0                | 23.1                 | 18.8                 | 21.8      | 29.3      | 15.9       |

production and productivity. Based on the report to the AU Assembly (2019), only Rwanda is said to be on track in implementing the Malabo Commitment, made to invest at least 10 percent of the national GDP in agriculture, while the eight countries in the subregion are not on track to fulfil the commitment (Table 1). Furthermore, government expenditure in the subregion on agriculture and agricultural research is minimal. For example, in Eastern Africa the average government expenditure in the agriculture sector in the 15 years from 2000 to 2014 was about 4.3 percent of total expenditure. Ethiopia and Kenya have made a relatively large national investment in agricultural research (1.21 and 1.19 percent respectively), while other countries have allocated smaller proportions (Ojijo et al., 2016).

Table 1. Country overall progress for implementing the Malabo Commitment for Agriculture transformation in Eastern African countries

<table>
<thead>
<tr>
<th>Country</th>
<th>Score(^1) of commitment (out of 10)</th>
<th>Progress 2017 to 2019 (%)</th>
<th>On track</th>
</tr>
</thead>
<tbody>
<tr>
<td>Burundi</td>
<td>5.82</td>
<td>24</td>
<td>No</td>
</tr>
<tr>
<td>Djibouti</td>
<td>2.82</td>
<td>-12</td>
<td>No</td>
</tr>
<tr>
<td>Eritrea</td>
<td>3.89</td>
<td>N/A</td>
<td>No</td>
</tr>
<tr>
<td>Ethiopia</td>
<td>5.31</td>
<td>0</td>
<td>No</td>
</tr>
<tr>
<td>Kenya</td>
<td>4.88</td>
<td>2</td>
<td>No</td>
</tr>
<tr>
<td>Rwanda</td>
<td>7.24</td>
<td>19</td>
<td>Yes</td>
</tr>
<tr>
<td>Somalia</td>
<td>0.55</td>
<td>N/A</td>
<td>No</td>
</tr>
<tr>
<td>South Sudan</td>
<td>2.89</td>
<td>N/A</td>
<td>No</td>
</tr>
<tr>
<td>Uganda</td>
<td>5.68</td>
<td>29</td>
<td>No</td>
</tr>
</tbody>
</table>

Source: African Union.

\(^1\) Against the 2019 benchmark of 6.66 out of 10, which is the minimum score for a country to be on track for implementing the CAADP Malabo Declaration, countries whose score is above the minimum score (6.66) are ON TRACK, while countries whose score is below the minimum score (6.66) are NOT ON TRACK for the 2019 report to the February 2020 AU Assembly.
Table 2. Recent introductions of damaging crop pests and diseases to the Eastern African subregion

<table>
<thead>
<tr>
<th>Example</th>
<th>Major outbreak introduction</th>
<th>Countries affected *</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall Armyworm (Spodoptera frugiperda)</td>
<td>2016</td>
<td>Burundi, Eritrea, Ethiopia, Kenya, Rwanda, Somalia, South Sudan, Uganda</td>
</tr>
<tr>
<td>Banana Xanthomonas wilt</td>
<td>2001</td>
<td>Burundi, Ethiopia Kenya, Rwanda, Uganda</td>
</tr>
<tr>
<td>Cassava brown streak virus</td>
<td>2004</td>
<td>Burundi, Rwanda, Kenya, Uganda</td>
</tr>
<tr>
<td>Cassava mosaic virus</td>
<td>1990s</td>
<td>Burundi, Ethiopia, Rwanda, Kenya, Uganda</td>
</tr>
<tr>
<td>Coffee wilt</td>
<td>1997</td>
<td>Burundi, Kenya, Rwanda, Uganda</td>
</tr>
<tr>
<td>Maize lethal necrosis</td>
<td>2011</td>
<td>Kenya, Rwanda, Uganda</td>
</tr>
<tr>
<td>Mango mealybug (Rastrococcus invadens)</td>
<td>2019</td>
<td>Rwanda</td>
</tr>
<tr>
<td>Napier grass stunt</td>
<td>2000</td>
<td>Ethiopia, Kenya, Rwanda, Uganda</td>
</tr>
<tr>
<td>Tomato leafminer (Tuta absoluta)</td>
<td>2012</td>
<td>Burundi, Eritrea, Ethiopia, Kenya, Rwanda, South Sudan, Uganda</td>
</tr>
<tr>
<td>Wheat stem rust (UG99)</td>
<td>1998</td>
<td>Eritrea, Ethiopia, Kenya, Rwanda, Uganda</td>
</tr>
</tbody>
</table>

* Neighbouring countries outside the SFE subregion may also have been affected. Information on occurrence for Eritrea, South Sudan and Somalia is limited.

Concerning fertilizer utilization, Ethiopia and Kenya have the highest fertilizer consumption within the Eastern African subregion, but the utilization is still low compared with other countries (Table 3). Average fertilizer consumption in the subregion is less than that for sub-Saharan Africa and significantly lower than other individual countries and regions beyond Africa. The low use of fertilizer is one of the most important constraints to increasing crop production in Eastern Africa.

Table 3. Fertilizer use in the Eastern African subregion compared with other countries and regions (2016)

<table>
<thead>
<tr>
<th>Country/region</th>
<th>Fertilizer consumption (kg/ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2006</td>
</tr>
<tr>
<td>Burundi</td>
<td>3.3</td>
</tr>
<tr>
<td>Djibouti</td>
<td>N/A</td>
</tr>
<tr>
<td>Eritrea</td>
<td>0.02</td>
</tr>
<tr>
<td>Ethiopia</td>
<td>11.13</td>
</tr>
<tr>
<td>Kenya</td>
<td>33.2</td>
</tr>
<tr>
<td>Rwanda</td>
<td>3.5</td>
</tr>
<tr>
<td>Somalia</td>
<td>N/A</td>
</tr>
<tr>
<td>South Sudan</td>
<td>N/A</td>
</tr>
<tr>
<td>Uganda</td>
<td>1.3</td>
</tr>
<tr>
<td><strong>Eastern African subregional average</strong></td>
<td><strong>8.7</strong></td>
</tr>
<tr>
<td><strong>Sub-Saharan Africa</strong></td>
<td><strong>14.1</strong></td>
</tr>
<tr>
<td><strong>Middle East &amp; North Africa</strong></td>
<td><strong>96.2</strong></td>
</tr>
<tr>
<td><strong>World</strong></td>
<td><strong>119.4</strong></td>
</tr>
<tr>
<td><strong>East Asia &amp; Pacific</strong></td>
<td><strong>282.8</strong></td>
</tr>
<tr>
<td><strong>China</strong></td>
<td><strong>452.1</strong></td>
</tr>
<tr>
<td><strong>India</strong></td>
<td><strong>136.4</strong></td>
</tr>
<tr>
<td><strong>Egypt</strong></td>
<td><strong>492.1</strong></td>
</tr>
<tr>
<td><strong>South Africa</strong></td>
<td><strong>62.3</strong></td>
</tr>
</tbody>
</table>


According to the Africa Agricultural Status Report (2016), access to and use of improved seed, fertilizers, manure and pesticides are limited. For example, in Ethiopia and Uganda just over 20 percent of households used improved seed in 2011 and 2012, while only about one-third of farming households had access to AEAS. During the same period, fewer than 20 percent of agricultural households used recommended pesticides and/or herbicides (Delve et al., 2016).
Poor delivery of AEAS in sub-Saharan Africa is due to a variety of reasons, ranging from the weakness of farmers in defining problems to limited job incentives for extension agents (Davis, 2008). A more recent assessment of the status and performance of AEAS in selected countries, including Ethiopia and Uganda, showed that the numbers of extension agents had increased and there was improved targeting of clients and use of digital technologies to share information. Though encouraging progress had been made in making national extension systems more pluralistic, service delivery is far from adequate (Davis et al., 2020).

A study of major food crops in Asia and sub-Saharan Africa provides further insights into the relative importance of types or categories of production constraints (Waddington et al., 2010). The four major categories were biotic (pests and diseases), abiotic (drought, soil fertility), management (tillage) and socio-economic (market access, labour availability). Illustrative findings for African countries are shown in Table 4.

Table 4. Relative importance of production constraints for yields of major food crops by farming system

<table>
<thead>
<tr>
<th>Production constraint</th>
<th>Wheat</th>
<th>Sorghum</th>
<th>Cassava</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Highland temperate mixed</td>
<td>Highland temperate mixed</td>
<td>Cereal-root crop mixed</td>
</tr>
<tr>
<td>Abiotic</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Biotic</td>
<td>4</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Management</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Socio-economic</td>
<td>2</td>
<td>4</td>
<td>3</td>
</tr>
</tbody>
</table>

The most important constraints varied between farming systems. For sorghum, insect pests and weeds were most important in highland temperate mixed systems, while Striga and nitrogen deficiency were the most important factors in cereal-root crop mixed systems and market access in agropastoral millet/sorghum. The precise reasons are less important than creating an overarching strategy for the crop sector that will enable governments and regional bodies to provide enabling policies and follow through with funding and other support needed to redress poor production and productivity.

1.3 FAO Subregional Office for Eastern Africa

FAO-SFE is a technical hub which supports its member countries in Eastern Africa and has a core team of professionals with multi-disciplinary expertise. It is responsible for developing, promoting, overseeing and implementing agreed strategies for addressing subregional food security, nutrition, agriculture and rural development priorities. SFE guides agricultural policy development in the subregion by supporting the member countries in agricultural development; resilience building and resource mobilization for agriculture; and the development of agribusiness and agricultural value chains. SFE also assists in the development of standards and sharing of best practices in agriculture and food security.

SFE works closely with the African Union Commission (AUC) located in Addis Ababa, Ethiopia. The AUC recently launched the African Continental Free Trade Area (AfCFTA), which aims to accelerate trade between African countries and boost Africa's trading position in global markets. AfCFTA will assist in the establishment of regional value chains, in which agricultural inputs will be sourced from different African countries to add value before external export. This is an opportunity to develop a reliable and sustainable market for smallholder farmer producers and boost incomes.

Agenda 2063 of the AUC, in its First Ten-Year Implementation Plan (2014–2023), has set a goal of modern agriculture for increased productivity and production in which agricultural productivity and production is identified as a priority area. One of the proposed strategies in the plan is to promote commercialization of traditional high-nutrition and drought-resistant grains and food crops at continental or regional level.

SFE also technically supports and liaises with RECs in Eastern Africa, namely the EAC and IGAD. These RECs play a key strategic role in supporting agricultural development and improving food security in the subregion. The third REC that SFE works with is the Common Market for Eastern and Southern Africa (COMESA). All three RECs offer member countries and partners a wide forum for policy debate and strategy development by fostering ideas and initiatives on how to tackle key challenges in agriculture.

Membership in these three RECs varies among countries in the Eastern African subregion (Table 5). The main membership among the countries is in IGAD (total eight countries), while six of them are members of EAC. Moreover, all Eastern African countries covered by the Subregional Office, except South Sudan, are also members of COMESA, which covers 19 countries.

Table 5. Membership of Regional Economic Committees

<table>
<thead>
<tr>
<th>Country</th>
<th>IGAD</th>
<th>EAC</th>
<th>COMESA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Burundi</td>
<td>no</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Djibouti</td>
<td>yes</td>
<td>no</td>
<td>yes</td>
</tr>
<tr>
<td>Eritrea</td>
<td>yes</td>
<td>no</td>
<td>yes</td>
</tr>
<tr>
<td>Ethiopia</td>
<td>yes</td>
<td>no</td>
<td>yes</td>
</tr>
<tr>
<td>Kenya</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Rwanda</td>
<td>no</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Somalia</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>South Sudan</td>
<td>yes</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>Uganda</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
</tbody>
</table>

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2 Burundi, Djibouti, Eritrea, Ethiopia, Kenya, Rwanda, Somalia, South Sudan and Uganda.
SFE’s contribution to agricultural development at a subregional level focuses mainly on interactions with EAC and IGAD. Both RECs take a wide view of agriculture, framed by political, social, economic and natural resource imperatives experienced by member countries. For example, the EAC’s Vision 2050 aims to transform the region into an upper-middle-income society within a secure and politically united East Africa based on the principles of inclusiveness and accountability (EAC, 2016). IGAD seeks to expand areas of regional cooperation, increase the interdependency of members and promote policies that ensure peace and stability in the region to attain food security and sustainable management of the environment and development.

Another key subregional partner in the effort to sustainably increase crop production and productivity in Eastern Africa is the Association for Strengthening Agricultural Research in Eastern and Central Africa (ASARECA). This not-for-profit organization represents National Agricultural Research Systems (NARS), including all those that fall under the coverage of SFE, except for Djibouti and Somalia. ASARECA has a wide remit and regularly collaborates with SFE. ASARECA is committed to enhancing regional collective action in agricultural research for development, extension, sustainable use of resources, and training and education. Its overall aims are to promote economic growth, reduce poverty and improve food security (ASARECA, 2009).

SFE plays an important role in partnering with subregional bodies in coordinating responses to challenges in agriculture, promoting new ideas, sharing knowledge and developing insights that inform national policies. SFE has developed its Priority Framework (2019–2023) to support its activities and guide its actions. The Priority Framework has three strategic pillars to broadly describe what it aims to achieve:

- strengthen policy, monitor governance and accountability frameworks to improve food security and nutrition;
- focus on sustainable agricultural production, productivity and management of natural resources; and
- build resilience against shocks and threats.

**The Priority Framework highlights six focus areas for delivering the three strategic pillars:**

- agribusiness and value chains in crops, livestock and fisheries;
- post-harvest management;
- transboundary pest and disease management;
- enhanced productivity of natural resources;
- conservation and restoration of degraded natural resources; and
- land-use and sustainable land management.
CROP STRATEGY
2. Overview of the crop sector

This section highlights the major components of the crop sector, where different groups of people carry out related work to support farmers in growing crops. The section describes cross-cutting issues indirectly related to growing crops, yet important in increasing equity, inclusion and farmer representation.

The section concludes with a summary of the key features of crop production in the SFE countries and thus the context in which farmers produce.

2.1 Major components

Research and technology development

Research capacity varies considerably across the subregion. Ethiopia, Kenya and Uganda have well-established national agricultural research organizations and networks of institutes with complementary mandates (Table 6). Research on crop production is also carried out at universities.

Marie at the nursery in Jomba, Rwanda where she receives training in farming practices by FAO. Marie, a farmer and businesswoman trained by FAO is married with three children. The family owns a small plot where their house stands, as well as an animal shelter. On the slope down from the house Marie grows vegetables and avocados. She received the seeds and seedlings from the TCP. She still has two of the three goats she received from the MPG. She has borrowed a cow from a neighbour, which she cares for in exchange for using the manure for her crops.

She also keeps several chickens which rummage around the house. She was recently able to obtain a loan through SACCDO of Rwf 50,000, with which she bought a sewing machine, which she keeps at her house. In a short amount of time she was able to repay the loan of Rwf 50,000. With the loan she will get from the Saving and Loan Scheme of the TCP she hopes to rent a small space in the centre of the village to put her sewing machine and grow her business in tailoring. She also intends to increase her crop production and sell some of the produce.
Research projects are highly dependent on external funding, some of which are coordinated through independent bodies such as the Alliance for a Green Revolution in Africa (AGRA) or CGIAR institutes. Donor funding allows for multi-country involvement in research projects as it recognizes the importance of transboundary crop pests and diseases, for example. It is difficult to monitor research programmes across the subregion and have a clear picture at any time of who does what. Many donor-funded projects are relatively short-lived, and the documentation of results and impacts is often difficult to find and complete. These and other weaknesses are inevitable given the fluctuating agendas of donors and changing priorities of governments, some of which could not have been anticipated – such as the arrival of new pests and diseases.

There are limited opportunities for scientists to meet and exchange ideas within the subregion, let alone nationally, which undermines attempts to forge a stronger sense of a research community in agriculture. Yet research continues to attract new talent and the increased ability to access information and keep abreast of research developments around the world provides hope for stronger and expanded research capacities in Eastern Africa. This still warrants careful nurturing and should be in line with support to the crop sector.
National agricultural extension systems

Most African countries do not have a specific policy for extension and advisory services. Any strategy or directive is usually rooted in their broader agricultural sector development policies. Some countries have a policy that is outdated or not well-implemented. While policies exist on paper in some countries, follow-up with adequate funding is lacking (Davis et al., 2020). Financing is donor-dependent and public sector-led. For example, while Rwanda and Ethiopia use donor funds, their extension programmes are driven by their extension and agriculture strategies rather than by donor priorities. Ethiopia provides an example of specific policy- and strategy-driven, government-led extension services promotion that makes a difference in the agriculture sector. Countries may have subsectoral policies and strategies as well that compete with extension for resources. Funding for extension should be explicitly identified in the national agricultural investment plans; without such clear earmarking, extension funds could be diverted to other purposes that are politically more attractive. In addition, this spending is included in total agricultural investment and meets the AU’s CAADP agreement of 10 percent allocation of annual budget to agriculture.

Generally, the linkage between AEAS and the national agricultural research system (NARS) is very weak, affecting access of the farmers to improved agricultural technologies including improved seeds, inputs and other good agricultural practices.

The African Forum for Agricultural Advisory Services (AFAAS) is part of a global network of organizations under the umbrella of the Global Forum for Rural Advisory Services (GFRAS). GFRAS hosts the Worldwide Extension Study and an invaluable repository of country reports on national AEAS systems. It also hosts a useful library of peer-reviewed ‘global good practice notes’ and practical advice for extension providers, managers and agents. GFRAS works closely with FAO in providing advice and analysis of major issues in AEAS.
Inputs

According to the Agriculture Status Report 2020 by the World Bank, low smallholder yields and returns to labour are largely due to the lack of use of productivity-enhancing inputs such as modern seeds and fertilizers. Underdeveloped markets, high prices and high transport costs have limited the availability of fertilizers and improved seeds. Policy and market failures account for the slow adoption of productivity-enhancing inputs. To some extent, subsidized fertilizers are not reaching the neediest farmers. There was early resistance to agrotechnology such as genetically modified (GM) crops to fight climate and disease impacts, but this trend seems to be waning and the adoption of biotechnology is on the rise. Mechanization is still costly and has yet to be widely adopted. Less than one percent of households (except in Ethiopia) use formal or informal credit to purchase modern inputs, corroborating evidence about the weakness of agriculture input credit markets in Africa. Despite recent advances, much scope remains for deepening financial rural markets (World Bank, 2020).

Marketing

Despite conducive agroclimatic conditions and a growing international market, Eastern African farmers have been unable to reap the benefits of the crops they produce due to ineffective value chains.

Performance of grain markets has a significant impact on people’s welfare, particularly the poor, and is critical to inducing pro-poor growth in agriculture-led economies like those in Eastern African countries. Marketing costs at the borders would need to be reduced, but even more attention should be paid to domestic marketing costs. To encourage greater regional trade, concerted public investments and policy actions at local, national and regional levels are required.

Reduced marketing costs would allow a reduction in input prices and thus production costs, contributing to overall efficiency in agricultural production and productivity (World Bank, 2020).

In the Eastern African subregion there is insufficient market information and market intelligence on potential markets of interest. The tendency is to rely on cooperatives, brokers and agents. This is likely to distort the reliability and timeliness of information received by the smallholder farmers. In addition, contract farming is not widely practiced and convincingly managed. The laws governing contract enforcement are relatively weak and the legal structures are not adequately equipped to manage contract defaults. In some cases, buyers hire their representatives to ensure that the contract terms are well understood and honoured. This increases the procurement costs.

The import licensing procedures, the supporting documents required for export and the permits from diverse authorities all create a significant burden on exporters and hence affect the sector’s competitiveness. Sanitary and phytosanitary measures and quality assurance standards also add to the burden. In most of the Eastern African countries, the road networks connecting the production areas to the ports of export are insufficient and poor. Investors in the transport business are therefore not attracted, which makes the cost of internal trade much higher. This also affects the timeliness of deliveries and smallholder farmers might often miss short windows of opportunity. On the other hand, marketing systems are relatively better developed for some export commodities such as coffee and cut flowers. Marketing boards monitor prices and oversee tariffs and other charges borne by growers. There is less clarity on how markets operate for many staple crops, though greater transparency on prices and demand through mobile phones has helped farmers take better advantage of opportunities.
Case studies (such as Diao et al., 2007) provide insights on market opportunities and constraints to agricultural growth, though findings may cease to be relevant as prices fluctuate from one year to the next.

2.2 Country briefs

All the countries in the Eastern African subregion grow similar crops, particularly among smallholders. However, there are significant differences in the relative importance of crop groups which predominate in each country (Table 7), reflecting different climates, soils and topographies.

Identifying the priority support areas for the crop sector will depend on the crops under cultivation, but strategic responses to common challenges and opportunities will have a greater overall impact on crop production. One example of a common challenge in the agriculture sector includes the formulation of strategic responses for national research or extension systems, or in any of the key points discussed under cross-cutting issues (Section 3.4). The balance between a crop and systems focus is clearly expressed in the CGIAR research programmes. Separate programmes exist for wheat, maize, rice, roots, tubers, bananas, green legumes and dryland cereals. This approach to CGIAR-focused programmes is contrary to globally integrated programmes for climate change in agriculture and food security, for example.

At a practical level, good agricultural practices and the use of improved seed will influence individual farmer yields, yet it is an overall package of support to the crop sector that matters most. It is important

<table>
<thead>
<tr>
<th>Commodity group</th>
<th>Burundi</th>
<th>Djibouti</th>
<th>Eritrea</th>
<th>Ethiopia</th>
<th>Kenya</th>
<th>Rwanda</th>
<th>Somalia</th>
<th>South Sudan</th>
<th>Uganda</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vegetables, primary</td>
<td>3</td>
<td>1</td>
<td>2</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>3</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Cereals</td>
<td>4</td>
<td>5</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Roots, tubers</td>
<td>1</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>4</td>
<td>5</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Fruits, primary</td>
<td>2</td>
<td>2</td>
<td></td>
<td></td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Pulses</td>
<td>5</td>
<td>4</td>
<td>4</td>
<td>3</td>
<td>5</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oil crops</td>
<td>5</td>
<td>5</td>
<td></td>
<td></td>
<td>5</td>
<td>4</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Citrus fruit</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: FAOSTAT, 2018 data. Empty cells indicate groups outside the top five.
that the general agricultural context of SFE countries is understood and some key features are provided in the following briefs, or snapshots. Current data on some countries are weak. More up-to-date information is required for planning interventions to increase crop production and productivity.

The short descriptions of agriculture in the SFE countries highlight key features and rely on broad classifications of farming systems. Classification schemes developed by FAO have evolved over the years and big data have enabled a more detailed analysis of agricultural activities based on agro-ecological zones (FAO, 2021). A useful overview of farming and rural communities is shown by a hybrid map outlining livelihood zones (Figure 2).

Figure 2. Livelihood zones in Eastern Africa


Further insight into a key constraint to crop production is revealed in a subregional map of drought risk, as shown in Figure 3.
Table 8. Land-use characteristics in nine Eastern African countries

<table>
<thead>
<tr>
<th>Country</th>
<th>Area used for agriculture (million ha)</th>
<th>Cropland (million ha)</th>
<th>Percentage of cropland</th>
<th>Arable (million ha)</th>
<th>Percentage of arable land</th>
</tr>
</thead>
<tbody>
<tr>
<td>Burundi</td>
<td>2.0</td>
<td>1.6</td>
<td>76.2</td>
<td>1.2</td>
<td>59.0</td>
</tr>
<tr>
<td>Djibouti</td>
<td>1.7</td>
<td>0.002</td>
<td>0.1</td>
<td>0.002</td>
<td>0.1</td>
</tr>
<tr>
<td>Eritrea</td>
<td>7.6</td>
<td>0.7</td>
<td>9.1</td>
<td>0.7</td>
<td>9.1</td>
</tr>
<tr>
<td>Ethiopia</td>
<td>37.5</td>
<td>17.5</td>
<td>46.7</td>
<td>16.0</td>
<td>42.5</td>
</tr>
<tr>
<td>Kenya</td>
<td>27.6</td>
<td>6.3</td>
<td>22.9</td>
<td>5.8</td>
<td>21.0</td>
</tr>
<tr>
<td>Rwanda</td>
<td>1.8</td>
<td>1.4</td>
<td>77.4</td>
<td>1.2</td>
<td>63.6</td>
</tr>
<tr>
<td>Somalia</td>
<td>44.1</td>
<td>1.1</td>
<td>2.5</td>
<td>1.1</td>
<td>2.5</td>
</tr>
<tr>
<td>South Sudan</td>
<td>28.5</td>
<td>2.8</td>
<td>9.7</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Uganda</td>
<td>14.4</td>
<td>9.1</td>
<td>63.1</td>
<td>6.9</td>
<td>47.9</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>165.4</strong></td>
<td><strong>40.5</strong></td>
<td><strong>24.5</strong></td>
<td><strong>32.8</strong></td>
<td><strong>19.8</strong></td>
</tr>
</tbody>
</table>

Burundi
The farming system is predominantly Highland Perennial, and to a lesser extent Root Crop. The country is densely populated, with 90 percent of the population involved in small-scale subsistence farming. The main staple crops are banana, cassava, sweet potato and beans. The main export crop is coffee. Over-exploitation of the land has resulted in depleted soils and low fertility. Many other natural resources such as water and overall biodiversity are threatened for similar reasons. Two-thirds of the population are under 15 years old.

Djibouti
Agriculture is a minor activity as a scarcity of water and an arid climate limit what can be grown. Although most of the country’s food is imported, there is potential to grow more short-cycle crops and build on existing horticulture expertise in vegetables and fruit production.

Eritrea
While there is a significant area classified as Sparse (arid) under the FAO farming systems classification, significantly sized Agro-pastoral millet/sorghum and Highland Temperate Mixed areas are used extensively for agriculture. Water availability is a key constraint, though irrigation schemes offer potential for the expansion of crop production.

Ethiopia
Upland regions are important areas for a diverse group of crops grown in Highland Temperate Mixed and Maize Mixed farming systems. Most of the land area is classified as Pastoral and crop production is low. Ethiopia has a diverse agriculture system, with key crops including maize, sorghum and wheat. With Africa’s second largest population of more than 110 million and an estimated 40 percent under 14 years old, opportunities abound to grow more crops to confront major challenges in food security.

Kenya
Kenya has substantial Pastoral farming systems but is similarly known for upland areas (Maize Mixed) which are densely populated and intensively farmed. Cereals, roots and tubers are cultivated and there is a substantial commercial sector for exporting high-value crops, some grown by contract smallholder farmers. Farmers face similar challenges as their counterparts in neighbouring countries, where once-productive areas now give

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lower yields because of depleted soils and limited water availability. Kenya is perhaps exceptional in its well-developed input supply system, though access to key items such as seed and fertilizer is limited by affordability and geographical availability.

**Rwanda**

A rapidly growing population and limited space for agriculture presents one of the major challenges for increasing crop production. In general, the land is classified as *Highland Perennial*. Roots, tubers and fruit dominate crop production. Year-round production of crops is constrained by the availability of water, with a strong dependence on rainfed production systems compared with underdeveloped irrigation production systems. Low input use has been a historical brake on increased crop production. However, a crop intensification programme has helped to strengthen a growing network of input suppliers.

**Somalia**

Continuing conflict and instability have had a major impact on the relatively small area of the country under crop production with access to irrigation. The area under permanent crop production is a tiny fraction of the dominant *Pastoral* farming system. Efforts to revive an extensive large-scale irrigation system established many years ago suggest there is potential to increase production, though greater public security and stability remains a challenge.

**South Sudan**

The agricultural activity in South Sudan is heavily affected by conflict and instability. There is considerable potential in *Root Crop, Cereal-Root Crop Mixed* and *Maize Mixed* farming systems, coupled with substantial water resources. Sorghum and maize are key crops, but there are many others grown by smallholders, including vegetables, and strong demand for these crops from urban markets. South Sudan was a net exporter of agricultural product to regional markets. However, due to war-related destruction, poor infrastructure and lack of investment in the agriculture sector, the country is now a net importer of food. It currently imports as much as 50 percent of its needs, including 40 percent of its cereals from neighbouring countries, particularly Uganda and Kenya. More than 75 percent of rural households in South Sudan consume cereals, primarily sorghum and maize, millet and rice. With over 95 percent of agricultural production being rainfed, weather variability is a major factor in determining crop performance. In lowland areas, flooding is a normal occurrence, but variability of the water levels affects harvested area and yields. In spite of having 50 percent of its arable land mass as prime agricultural land, only four percent of this area is cultivated continuously or periodically. The very low ratio of cultivated to total land compares with 28 percent in Kenya and eight percent in Uganda. Most of this land use in South Sudan is accounted for by smallholder subsistence farmers that, in the absence of fertilizers, pesticides and herbicides, practice some form of shifting cultivation (AfDB, 2013).

**Uganda**

A small area in the north is *Maize Mixed*; otherwise, *Highland Perennial* is the dominant farming system. Maize remains a widespread crop though the main staple grown by smallholders is banana. Like Kenya, Uganda has a wide network of input dealers that serve both commercial agriculture and small-scale producers. High productive potential and the ability to satisfy strong demand are hampered by familiar constraints such a dependency on rainfed agriculture systems and weak access to markets (World Bank, 2018).
Women of Kibézi camp for internally displaced persons sustained by ‘Sauvons les Orphelins’ NGO and FAO in Burundi working in the communal garden (potato patch), where improved seeds and crops are in use and under way.
3. The way forward

3.1 Designing a strategy

The primary aims of the crop sector development strategy are to enhance food and nutrition security, increase incomes and improve livelihoods through increased crop production and productivity, and thus contribute to ending hunger and extreme poverty. The underlying objective is to guide FAO-SFE’s support to member countries in the implementation of the strategy across the subregion through 2026.

The strategy has a wider point of reference, notably the Sustainable Development Goals (SDGs) and FAO’s Strategic Framework (2022–31). More specifically, the crop strategy is in line with the FAO’s Four Betters:

- Enhance food and nutrition security, increase incomes and improve livelihoods through increased crop production and productivity

Overview of the five strategic pillars (SPs) to guide discussions and the articulation of the crop sector development strategy.

SP1 POLICY ENVIRONMENT
- Revise policies, laws, regulations, and legislation
- Increase agricultural investments
- Support AICFTA
- Promote input incentives
- Promote fertilizers code of conduct

SP2 INSTITUTIONAL ENVIRONMENT
- Strengthen national research systems
- Enhance research - AEAS - farmers links
- Support NPPOs
- Encourage youth agripreneurship
- Harmonize SPS systems

SP3 CROP PRODUCTION & PRODUCTIVITY
- Enhance local agri-input production
- Improve access to rural finance
- Strengthen seed systems
- IPM, community-based early warning systems
- Promote small-scale mechanization
- Support urban and peri-urban agriculture

SP4 PROCESSING & VALUE-ADDITION
- Promote farmers and agro-industries
- Improve post-harvest management
- Develop local standards and quality assurance

SP5 MARKET ACCESS
- Strengthen market information systems
- Promote contract farming
- Focus on high-value crops
- Strengthen farmer-based organizations

GOAL: Enhance food and nutrition security, increase incomes and improve livelihoods through increased crop production and productivity

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4 At the time, Eritrea was not represented as a member country of FAO-SFE.
1. Better production (BP)
   a. BP1 – Green innovation: support sustainable crop production systems through innovation, technologies and enabling policies.
   b. BP3 – One health: support improved pest and disease prevention, early warning and management.
   c. BP4 – Equitable access to resources: support small-scale producers’ access to natural resources, markets, services, information, education and technologies.
   d. BP5 – Digital agriculture: support accessible digital ICT technologies to enhance market opportunities, productivity and resilience.

2. Better nutrition (BN)
   a. BN4 – Reducing food loss and waste: support to reduce food loss and waste at all value chains.
   b. BN5 – Transparent markets and trade: support improved market transparency and equitable participation in markets, global value chains and international trade.

3. Better environment (BE)
   a. BE1 – Climate change mitigating and adapted agrifood systems: support establishment and implementation of climate-smart agricultural practices.

4. Better life (BL)
   a. BL1 – Gender equality and rural women’s empowerment: support equal rights, access to and control over resources, services, technologies.
   b. BL3 – Sustainable urban food systems: support efficient, inclusive, resilient and sustainable urban and peri-urban agrifood systems transformation.

Five strategic pillars (SPs) are identified to guide the Crop sector development strategy for Eastern Africa 2021–2026:

- **SP1**: Policy environment
- **SP2**: Institutional environment
- **SP3**: Crop production and productivity
- **SP4**: Processing and value addition
- **SP5**: Market access

Goals were identified and priority intervention areas were proposed for each strategic pillar, which include incentives to promote local production and supply of agricultural inputs, support research and development for crop production, enhance national seed systems and management of transboundary plant pests and diseases. Cross-cutting issues relevant to the strategic pillars were discussed and are described in Section 3.4.

Unless otherwise stated, the goals and intervention areas are aimed at all member countries in the Eastern African subregion.
3.2 Strategic pillars

SP1. POLICY ENVIRONMENT

**Goal:** To harmonize policies, laws and legislation in the development of the crop sector.

“One of the biggest impediments to large-scale private investment in cross-border trading capability – particularly in Southern and Eastern Africa – is the unpredictable behaviour of governments in imposing export bans whenever they fear food shortages in their own markets.”

Binswanger-Mkhize, 2009

**Challenges:** Lack of consistency between member countries in their current approaches to the crop sector. Different policies, laws and legislation across member countries hinder the free movement of agricultural inputs and outputs. Imported agricultural inputs are expensive and there is little or no private sector involvement in their production and supply at national levels.

**Proposed interventions**

1.1 Formulate or update policies, laws, regulations and legislation related to the crop-development sector, ensuring closer alignment across the subregion.

1.2 Encourage or support the countries to increase investments in agriculture and fulfil their commitments to the CAADP Malabo declarations.

1.3 Support the AfCFTA in the harmonization and formulation of policies, laws and regulations related to the crop sector development.

1.4 Promote incentives to encourage input production and supply with a focus on fertilizer and seed.

1.5 Promote implementation of the International Code of Conduct for the Sustainable Use and Management of Fertilizers.

1.6 Promote implementation of the Sustainable Agricultural Mechanization: A Framework for Africa (SAMA) in the Eastern African subregion.

SP2. INSTITUTIONAL ENVIRONMENT

**Goal:** Enhance institutional capacity to support development of the crop sector.

**Challenges:** The linkages between extension, farmers and research are weak. Inadequate plant health regulations restrict the movement (import/export) of agricultural outputs. There is minimal knowledge exchange on good crop-production practices within and outside the subregion.

**Proposed interventions**

2.1 Strengthen the capacity of the national research systems.

2.2 Strengthen the linkage between research, AEAS and farmers.

2.3 Strengthen the national AEAS.

2.4 Strengthen national plant protection organizations and plant health regulatory bodies.

2.5 Encourage youth entrepreneurship through training in agribusiness, with a focus on high-value crops.

2.6 Sustain the AfCFTA in the formulation and harmonization of the WTO-SPS framework to support member countries in the subregion.
SP3. CROP PRODUCTION AND PRODUCTIVITY

Goal: Enhance the nutritional quality of and increase the production and productivity of major crops such as cereals, pulses, roots and tubers, fruits and vegetables by at least 25 percent.

“To ensure global food security for all, the adoption of crop improvement technologies is no longer just an option – it is an imperative.”
Flavell, 2016

Challenges: Smallholder farmers seldom use fertilizer, improved seed and mechanization practices. Transboundary pests and diseases are highly damaging and risk management is inadequate (or timely responses have limited effect). Nutritious crops receive insufficient attention as cereal crops dominate farming systems. Climate change has a profound effect on crop production.

Proposed interventions

3.1 Enhance production and supply of fertilizer and agrochemicals in the subregion.
3.2 Improve farmers’ access to rural finance.
3.3 Promote input voucher schemes and strengthen formal and community-based seed supply systems.
3.4 Establish schemes for emergency seed banks.
3.5 Promote technologies to ameliorate problematic soils (e.g. high salinity, acidity).
3.6 Improve plant health and reduce crop losses through the promotion of integrated pest management (IPM) and establishment of community-based early warning systems.
3.7 Promote small-scale mechanization technologies.
3.8 Promote private sector involvement in agricultural mechanization service investments.
3.9 Promote production of nutrient-rich crops and varieties.
3.10 Emphasize and support urban and peri-urban agriculture and school gardening.
SP4. PROCESSING AND VALUE-ADDITION

**Goal:** Reduce post-harvest losses of major crops by at least 50 percent by 2030 and improve the quality of produce and products through expanded use of more effective and efficient processing and handling methods.

**Challenges:** The weak link that exists between small-scale farmers and agro-processors, lack of quality standards and guidelines for agricultural products, and significant post-harvest crop losses.

**Proposed interventions**

4.1 Create partnerships of farmers with small-scale agro-industries.

4.2 Promote efficient technologies on post-harvest management.

4.3 Develop local standards and guidelines for quality assurance.

SP5. MARKET ACCESS

**Goal:** Improve input and output market access for smallholder farmers.

“Adoption of technologies and productivity enhancements is being driven by an improved access to input and output markets, linked to increasing accessibility of rural finance.”

Delve et al., 2016

**Challenges:** Farmers have limited access to market information and farmer organizations are weak or non-existent.

**Proposed interventions**

5.1 Strengthen market information systems.

5.2 Promote contract farming through commodity producer groups and cooperatives.

5.3 Enhance value-addition, with a particular focus on high-value crops such as fruits and vegetables.

5.4 Strengthen farmer-based organizations.
3.3 Cross-cutting issues

Cross-cutting issues have also been considered to develop the Crop sector development strategy for Eastern Africa 2021–2026.

Youth involvement

“Links between young entrepreneurs in agriculture and formal financial institutions need to be strengthened by improving youth’s financial literacy and the capability of institutions to assess agricultural sector opportunities. Better metrics can drive better policy – African governments should produce and share reliable statistics on youth employment in agriculture and their financial inclusion. Young agripreneurs, having fewer assets, will benefit from forms of finance that do not require fixed collateral, such as contract farming, leasing, warehouse receipt finance or factoring.

A scarcity of venture capital firms (including the mentoring services that they provide) hampers African young entrepreneurs, including in agriculture, in developing and scaling up their businesses. Development organizations should continue to scale up their support for challenge funds and impact investing to fill this critical gap in the market.”

Rutten and Fanou, 2015

In the Eastern African subregion, about 65 percent of the population is under 24 years old. Youth unemployment is high and exceeds 20 percent in most countries in the subregion. The formal economy struggles to find jobs for the increasing number of young people. Despite labour shortages in agriculture, young people continue to migrate to urban centres while agricultural production is consigned to the elderly (Keya and Rubaihayo, 2013).

Part of the problem is that rural livelihoods are often precarious, yet more could be done to encourage youth to venture into agriculture. A starting point is to strengthen the quality of teaching of agriculture in high schools and tertiary colleges, for example, by using ICT to equip youth with the requisite skills and knowledge (Keya and Rubaihayo, 2013).

Modernization of curricula and teaching methods will provide a more thorough grounding in science and technology, coupled with development of practical farm management and business skills. These new skills, in combination with an increased awareness of the potential of agricultural enterprises, are the foundations for stronger youth involvement, especially with new cash crop sectors.

Improved teaching is only the start, as the quotation suggests. Improved finance such as investments and access to credit is needed. The purchase of agricultural inputs through group procurement such as youth organizations will lower prices. Selling through farmer groups can also help secure better prices for products and increase marketing opportunities.

There is no simple solution to increasing youth involvement in agriculture, but it is imperative that this should be a high priority for governments, given the ageing of farmers in all countries in the subregion.
Climate-smart agriculture

“Climate change (is) a significant threat to food availability and stability by reducing agricultural productivity and increasing inter-annual variations in yields. Adaptation will be required if food production is to be increased in both quantity and stability to meet food security needs during the twenty-first century.”

Rippke et al., 2016

Climate-smart agriculture (CSA) is an integrated response to the complex economic, social and environmental challenges posed by the climate crisis. The three main pillars of CSA are to increase agricultural productivity and farmer incomes sustainably; adapt and build resilience to climate change; and minimize or eliminate greenhouse gas emissions (FAO, 2016). The Eastern Africa CSA Alliance (EACSAA) was established in 2016 to explore challenges and develop solutions to increase CSA activities in Eastern Africa. A workshop held in July 2018 discussed the need to scale up CSA practices and enhance coordination among stakeholders in the subregion.

CSA measures aim to enhance resilience by maximizing ecosystem services based on sound agro-ecological principles and adopting landscape approaches. CSA measures range from diversification of crop production and sources of income to establishing delivery systems and extension services that support efficient and timely use of inputs. Adaptation measures to combat climate change and increase resilience include the introduction of new crop varieties, livestock breeds, fish and forest species.

CSA-related crop production interventions to promote in the Eastern African subregion include:

Women in crop production

Women are the backbone of the rural economy in Eastern Africa, as in many other similar regions. Yet, compared with men, women receive only a fraction of the available land to develop agricultural enterprises. Access to credit – though improving – is still weak, as is the availability of key inputs such as quality seed and fertilizer. Opportunities for training and access to AEAS also need improvement.

Rural women’s empowerment has been shown to increase productivity significantly, reduce hunger and malnutrition and improve rural livelihoods, not only for women, but for everyone. Some of the key steps in supporting women include:

- Eliminate discrimination against women in access to agricultural resources, education, extension and financial services, and labour markets.
- Invest in labour-saving and productivity-enhancing technologies and infrastructure to free women’s time for more productive activities.
- Facilitate participation of women in flexible, efficient and fair rural labour markets.
- Ensure access to productive resources, income opportunities, extension services and information, credit, labour- and time-saving technologies such as grain milling machines, hand/treadle water pumps, solar powered equipment, improved rural stoves and biogas energy.
- Support women’s voices in household and farming decisions.
- Balance the need for safe pregnancies and the demands of raising young children with the provision of equitable access to training and support for agricultural activities.

Crop diversification and replacement of existing varieties with those that are resistant to major pests and diseases, high-yielding, and tolerant to drought and a shorter growth season.

Promotion of conservation agriculture, which is defined as a range of measures that include reduced or no-till, crop residue management, intercropping and crop rotation.

Small-scale irrigation using solar-powered water pumps to enable year-round cropping and efficient water utilization.

Crop insurance schemes to mitigate risks associated with crop failure.

Integrated soil fertility management through compost and manure management, biological fertilizers and efficient fertilizer application techniques.

Improved post-harvest management techniques to reduce losses and increase incomes.

**Digital approaches**

The use of Information and Communications Technology (ICT) in agriculture has had a profound impact. The widespread availability of smartphones and access to the internet at all times for farmers — and at relatively low cost — have enabled direct access to critical information like market prices and demand, to enhance incomes. The major benefits for farmers to invest in digital approaches in agriculture include better identification of buyers, faster delivery of products to markets, streamlining of supply chain operations and reduction of operational costs. Further digital transformation of agriculture is under way, for example the expansion of training material via extensive virtual libraries that farmers can directly view on smartphones (Bentley et al., 2019).

Although the direct impact of digital technologies and ICT on crop production and productivity is less clear, it undoubtedly has the potential to produce major benefits for smallholders in the future, for example through pest and disease early warning systems. A typical example is a mobile phone-based application, the FAW Monitoring and Early Warning System (FAMEWS), launched by FAO in 2018 to monitor FAW presence and assist national counterparts in their FAW management decision-making processes. There is some doubt about the extent to which farmers use apps after these have been downloaded (Krell et al., 2020).

Digitalization promotes rapid delivery of extension and advisory services on a wide range of topics via apps such as the Plantwise Factsheets Library and Plantix. The range of agriculture-based apps is growing rapidly, though relatively few are aimed directly at the Eastern African subregion.

**BOX 1. Digital technologies for agriculture**

**ETHIOPIA** — In July 2014, the Ethiopian Agricultural Transformation Agency launched “8028”, Ethiopia’s first agricultural hotline, providing ready and direct access to best agronomic practices, helping smallholders make timely and informed decisions (Ethiopian ATA, 2016).

**KENYA** — Reliable money transfers via M-PESA and Airtel Money have been a boon to many farmers. mFARM updates market prices and connects farmers with buyers.

**RWANDA** — The Rwanda Development Board has deployed a national web-based crop price tracker and other tools such as mobile phones under the e-soko project to improve marketing.

**UGANDA** — A commercial app (EzyAgric) enables farmers to order inputs, map their farms, sell and buy products and view weather conditions.
FAO’s e-agriculture portal provides updates on the expanding range of services, information and other resources relevant to farmers. Some recent examples are described in Box 1.

**Urban and peri-urban agriculture**

Urban and peri-urban agriculture (UPA) contributes to household food security and incomes, especially in times of crisis or food shortages. Opportunities for sales are greatest in larger cities. Locally produced food requires less packaging, transportation and refrigeration, and provides fresh and nutritious products at competitive prices. The scale of production varies widely, from extensive plots in peri-urban areas aimed at commercial sales, to small, cultivated areas adjacent to houses in more urban settings. Consumers, especially low-income residents, enjoy access to a wider choice of fresh produce at a lower price, while producers get higher prices when they sell locally.

Urban agriculture provides employment and incomes for poor women and other disadvantaged groups. Garden plots can be up to 15 times more productive than rural holdings.

Although a wide range of plants are grown in UPA, the short growth cycle of vegetables is more suited to initiatives aimed to promote this neglected aspect of agriculture (Shackleton et al., 2009). Greater emphasis needs to be given to UPA in national agricultural policies and urban planning, with stronger assistance to the public.

### 3.4 Crop sector development strategy for Eastern Africa 2021–2026: next steps

The goals defined under the five strategic pillars and priority interventions of the crop sector development strategy were used to develop a framework for action (Section 4.3). The results of the discussion on cross-cutting issues are also incorporated into the framework, though less explicitly because of their general relevance to all the strategic pillars. It will be important that expected outcomes related to youth or women in agriculture be clearly defined in future projects and programmes and evaluated as part of those interventions.

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6 More information at http://www.fao.org/e-agriculture/home
National and regional follow-through

This section highlights notable country policies and subregional initiatives in Eastern Africa established to create an enabling environment for sustainable crop production. It summarizes the roles and contributions of public, private and civil society organizations relevant to the crop sector development strategy and concludes with a framework for action. The framework identifies partners and collaborators for delivering the outcomes of the crop sector development strategy as elaborated in Section 3.

4.1 Country policies and subregional initiatives

Burundi has several agricultural sector policies and strategies which promote increased crop production and productivity. The Third Pillar of the Burundi 2025 Vision aims to achieve accelerated economic growth of at least 10 percent. Much of this will depend on the modernization of the agricultural sector. Previous policies have focused on the development of agricultural and rural statistics, a national agricultural investment plan, development of master plans for rice, bananas, seed, fertilizer subsidies, phytosanitary capacity and food security.

Current agricultural policies in Djibouti support the production of high-value fruits and vegetables. Other priorities include the development of greenhouse agriculture with micro-irrigation systems to improve water efficiency, including hydroponics; an expansion of the cultivated area to improve production; application of appropriate cropping techniques through management; and training and use of solar-powered water pumps.

Eritrea is implementing an integrated five-year strategic agricultural development plan up to 2023 to provide sustained improvements in food security. A key objective is sustainable increases in agricultural and livestock produce for food and raw materials for associated industries. The agricultural development strategy includes infrastructure development for agriculture, soil conservation and environmental protection, expansion of irrigation schemes, intensification of agricultural production, strengthening of research and extension, investment in agro-industry and market stabilization, regulation of standards and quality and development and consolidation of producers’ unions. Eritrea also promotes the joint role of small and medium commercial farmers in achieving productive, profitable agricultural value chains linked to domestic and international markets.

In Ethiopia, the Growth and Transformation Plan-II (GTP-II) 2016–2020 seeks to transform the economy from agricultural-led to industrial-led development. Agriculture will, however, continue to be an important part of GTP-II. The agricultural and rural development components include an agricultural policy investment framework, an emphasis on agricultural production, productivity and marketing, effective management of natural resources, disaster risk management and food security. The current 10-Year Development Plan will replace GTP-II and will highlight new priorities, such as increased production and competitiveness. The new strategy aims to build a green and climate-resilient economy as well as institutional transformation. Agriculture, innovation and technology are key development areas of the 10-Year Development Plan.

Specific emphasis will be given to:

- Improving irrigation capacity and reducing dependence on rainfed agriculture.
• Expanding agricultural mechanization services
• Supporting productive model farmers to become investors
• Focusing on cluster farming and high-value horticultural production
• Supporting private sector investment in agriculture
• Institutional capacity building
• Climate-resilient sustainable agriculture

The Ethiopian Agriculture Development Plan highlights improving productivity and production of market-oriented crops and has an ambitious target to increase irrigated wheat production from the current 8,000 tonnes to two million tonnes per season.

In Kenya, the Agricultural Sector Transformation and Growth Strategy 2019–2029 prioritizes three anchors to drive a ten-year transformation. The first anchor is to increase incomes of small-scale farmers, pastoralists and fishers and target around one million farmers nationwide for better provision of inputs, equipment and processing and post-harvest aggregation. Farmers will be able to access a wide range of services and inputs from private and public providers using e-vouchers.

The second pillar proposes the establishment of six large-scale agro- and food-processing hubs across the country based on new public-private partnerships and streamlined approval systems. The new ventures and hubs will target domestic and export market goods. Agricultural production will be increased by creating approximately 50 new large-scale private farms with 150,000 acres under sustainable irrigation.

The Government of Kenya emphasizes the intensification of irrigation systems. The Kenya fertilizer and seed development fund, established in 2014, supports the purchase of subsidized seed and fertilizer, bulk clean planting material and the use of clean seed. The aim is to stabilize domestic open market prices. The number of smallholder farmers able to access the subsidized fertilizers is increasing under this fund.

Other government initiatives include crop insurance schemes, improved access to credit and financial services for smallholder farmers, agriculture mechanization programmes to benefit smallholder farmers, youth empowerment, platforms to link research, extension and farmers, and multi-institutional platforms to respond to transboundary pests and diseases.

Rwanda’s Strategic Plan for Agriculture Transformation Phase 4 outlines priority investments in agriculture and support for the development of the agriculture sector from 2018 to 2024. The strategy seeks the “transformation of Rwandan agriculture from a subsistence sector to a knowledge-based value-creating sector that contributes to the national economy and ensures food and nutrition security in a sustainable and resilient manner”.

The strategy focuses on improvements and enhancements in the following areas:

• Stronger role of the private sector, including farmers, with the Government shifting from a market actor to a market enabler
• Farm profitability and commercialization
• Nutrition and household food security
• Climate-smart production
• Diversification in favour of higher value agricultural products such as horticulture, vegetables, poultry, pork and fisheries
• Innovation and extension services
• Government coordination and stakeholder engagement

Priority Area 2, which is the Productivity and Resilience part of the strategy, aims to increase productivity, nutritional value and resilience through sustainable, diversified and integrated crop, livestock and fish production systems.
**Somalia**

The Federal Ministry of Agriculture’s Strategic Plan 2016–2020 has four main goals:

- Strengthen the institutional capacity of the Ministry of Agriculture
- Improve and rehabilitate productive agricultural infrastructure
- Increase agricultural production
- Strengthen resource mobilization

Details of actions and initiatives concerning agricultural development, plant protection, seed, food security, land and water irrigation were developed with FAO in 2017. Other initiatives include the draft Phytosanitary and Seed Regulations and Acts, the EU-funded and FAO-implemented Somaseed project to focus on plant genetic resources, a United States Agency for International Development (USAID) programme to develop sesame value chains and a study of the banana value chain.

FAO and the World Bank (2018) recommend a holistic approach to deliver quick, large and sustainable production and productivity gains for staple food commodities and a diversification of crops in horticulture, pulses and other high-value crops. The approach highlighted important action areas:

- Rehabilitation of pre-war flood control and irrigation infrastructure along the two major rivers in Southern Somalia.
- Expansion of rainwater catchment and moisture conservation and the introduction of control measures for soil erosion and gully formation in the Central and Northern regions.
- Institutional and human capacity building.
- Rehabilitation of pre-war major and rural roads to improve the transport of inputs to farms and produce to markets.
- Improved awareness of, access to, and adoption of productivity-enhancing and resilient technologies for crops.

**South Sudan** approved a Comprehensive Agricultural Master Plan (CAMP) in March 2017. This covers four subsectors – crop, livestock, fisheries and forestry. CAMP provides prototype project profiles for implementation over a 25-year period. The policy and regulatory framework for implementing CAMP remains to be created. CAMP encompasses several projects including the production of quality seed, sorghum, vegetables and fruits, sesame, urban and peri-urban vegetable production and marketing. Other projects cover training of tractor operators, development of large-scale irrigation systems, phytosanitary infrastructure and systems, crop pest and disease control, private sector investment, quality standards and control of agricultural products, establishment of legislative frameworks and the strengthening of laws and regulations in the agriculture sector.

In **Uganda**, the National Agriculture Policy (2013) guides all current and future agriculture plans, policy frameworks and strategies. The Government works towards achieving prosperity for all and the central strategy for achieving this is through agricultural development. Priority action areas include coffee, food and nutrition, agricultural extension services and fertilizers. Draft policies cover the production of seed, horticulture, cassava, cocoa, tea and organic production, plant genetics and plant health regulation.

The **Agriculture Sector Strategic Plan 2015/2016–2019/2020** focuses on increasing production and productivity, improving market access and value addition, providing an enabling environment and strengthening institutions.

### 4.2 Role of public, private and civil society bodies

Partnerships are at the heart of FAO’s mission to help build consensus for a world without hunger. Only through effective collaboration with governments, civil society, the private sector, academia, research centres and cooperatives, and making use of each other’s knowledge and comparative advantages, can food insecurity be defeated.
The public sector for agriculture in Eastern Africa encompasses a variety of organizations that range from Ministries of Agriculture at the national level to local government, research institutes and numerous agencies and bodies that enact policies, set standards and respond to government regulations and directives.

The civil society sector in agriculture is equally diverse, though dominated by non-governmental organizations (NGOs). They operate agricultural programmes throughout Eastern Africa and often fill gaps and functions that the state cannot fulfil because of limited budgets and outreach. Many NGOs address overarching issues related to agriculture and crop production, including food security, climate change, access to inclusive markets and access to nutritious food sources for mothers and their children. Agriculture is often part of a wider portfolio of projects and programmes, ranging from human health and social development to nature conservation and beyond. Advocacy on a wide range of issues features prominently in the work of some NGOs.

NGO activities might include mitigation and adaptation to climate change, ecological restoration, governance of natural resources, developing opportunities for agro-entrepreneurs to access markets and facilitating private sector engagement with young farmers. NGOs who focus solely on agricultural development use a wide array of strategies to boost crop production. Some use novel schemes to finance and deliver inputs, such as high-quality seed and fertilizer. Others provide training on modern agricultural production techniques, post-harvest storage solutions and facilitating market access and sale of products. NGOs have also developed new ways to share knowledge and create online information resources, including high-quality farmer-to-farmer training videos in local languages.

The civil society sector includes large foundations which play an increasingly important role in funding agricultural development programmes, including research on plant breeding, mitigation of pest and disease risks and improvements to delivery of agricultural inputs.

FAO considers the private sector to be a key ally in the fight against hunger. Attitudes have changed towards the private sector, a recognition of their role in global transformations to the governance of food and agriculture through new technological, knowledge-based financial and managerial tools. The two main routes for private sector engagement with FAO are collaboration on projects and sponsorship in support of FAO programmes. Private companies can have a global influence through provision of new products, tools, machinery and digital technologies. Others are major buyers of staple crops and high-value export crops within countries and play an important role in organizing outgrower schemes and providing employment.

There is a much greater willingness to create partnerships that combine actors from all three sectors, as witnessed by efforts to promote pluralism in AEAS. It is also an acknowledgement that the SDGs depend on contributions from the public, private and civil society sectors and the need to develop shared visions and common purposes that facilitate complementary roles by organizations and individuals.

4.3 Framework for action: who does what?

This crop strategy comprises a series of broad goals and key interventions, organized under five strategic pillars (Section 3.3), agreed by leading representatives from the participating member countries in the Eastern African subregion. The framework for action (Table 9) is the springboard for governments and organizations from the public, private and civil society sectors to create programmes, implement projects and undertake sustaining actions required in the crop sector to have a lasting impact on people's lives and livelihoods.

Table 9 is the starting point for future support and contributions by government ministries and
agencies, RECs and many other organizations in the public, private and civil society sectors. The list of contributors is indicative rather than comprehensive, and there are many other organizations that have a part to play in achieving the strategic goals and the overarching SDGs.

The interventions in Table 9 will help to suggest other collaborators and partners who could contribute to national programmes and projects, particularly those who have already developed new ideas and shown innovative approaches in increasing crop production and productivity. The strategy highlights the roles of organizations who offer skills and experience in areas such as gender equality, youth development, market development and digital technologies, all of which have a key part to play in the crop sector.

There is a much wider appreciation of the diversity of organizations needed to deliver sustained change in the crop sector, from those involved in growing crops to those that enable farmers to earn more money and those that tackle social inequalities. Broad coalitions are needed to integrate efforts and provide the holistic support needed to succeed in developing the crop sector. FAO-SFE’s role will be crucial in helping to develop these coalitions and support multisector involvement in putting the framework to action.

FAO-SFE has a broad view of the crop sector and a wide knowledge of actors and organizations active in the crop sector, as well as close contact with funders. It has strong bilateral ties as well as a multilateral mandate within the United Nations. The focus of SFE includes an awareness of previous initiatives and programmes and an institutional understanding of why some succeeded better than others. This historical perspective is vital, as it provides an important perspective on what was previously done to support the crop sector and the success and failings of programmes in the past.
### Table 9. Moving the crop development strategy forward: a framework for action and involvement of national, regional and international bodies

**Strategic pillar 1: policy environment**

**Strategic goal:** To harmonize policies, laws and legislation in the development of the crop sector

<table>
<thead>
<tr>
<th>INTERVENTION</th>
<th>NATIONAL</th>
<th>REGIONAL</th>
<th>INTERNATIONAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1 Formulate or update policies, laws, regulations and legislation related to the crop development sector, ensuring closer alignment across the subregion.</td>
<td>MoA</td>
<td>ASARECA, AU, EAC, IGAD</td>
<td>IFPRI</td>
</tr>
<tr>
<td>1.2 Encourage or support the countries to increase investments in agriculture and fulfil their commitments to the CAADP Malabo declarations.</td>
<td>MoA</td>
<td>AU, EAC, IGAD</td>
<td>IFPRI</td>
</tr>
<tr>
<td>1.3 Support the AfCFTA in the harmonization and formulation of policies, laws and regulations related to crop sector development.</td>
<td>MoA</td>
<td>AU, EAC, IGAD, IASPC</td>
<td>IPPC; WTO-SPS; STDF</td>
</tr>
<tr>
<td>1.4 Promote incentives to encourage input production and supply with a focus on fertilizer and seed.</td>
<td>MoA and Ministries of Trade</td>
<td>AU, EAC, IGAD</td>
<td>AGRA, IFDC&lt;sup&gt;7&lt;/sup&gt;</td>
</tr>
<tr>
<td>1.5 Promote implementation of the <em>International Code of Conduct for the Sustainable Use and Management of Fertilizers.</em></td>
<td>MoA</td>
<td>AU, EAC, IGAD</td>
<td>IFDC</td>
</tr>
<tr>
<td>1.6 Promote implementation of the <em>Sustainable Agricultural Mechanization: A Framework for Africa (SAMA)</em> in the Eastern African subregion.</td>
<td>MoA, local financial institutions</td>
<td>AUC, AfDB, AGRA</td>
<td>UNECA, UNIDO, World Bank</td>
</tr>
</tbody>
</table>

<sup>7</sup> *International Fertilizer Development Corporation*
**Strategic pillar 2: Institutional environment**

**Strategic goal:** Enhance institutional capacity to support the development of the crop sector

<table>
<thead>
<tr>
<th>INTERVENTION</th>
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<th>REGIONAL</th>
<th>INTERNATIONAL</th>
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<tbody>
<tr>
<td>2.1 Strengthen the capacity of the national research systems.</td>
<td>NARS</td>
<td>ASARECA</td>
<td>GFAR, CGIAR</td>
</tr>
<tr>
<td>2.2 Strengthen the linkage between research, AEAS and farmers.</td>
<td>MoA, NARS, national and local government, Nat feds. of farmers (e.g. KENAFF)</td>
<td>AFAAS</td>
<td>GFRAS</td>
</tr>
<tr>
<td>2.3 Strengthen the national AEAS.</td>
<td>MoA, NARS, national and local government, Nat feds. of farmers (e.g. KENAFF)</td>
<td>AFAAS</td>
<td>GFRAS</td>
</tr>
<tr>
<td>2.4 Strengthen national plant protection organizations and plant health regulatory bodies.</td>
<td>MoA</td>
<td>AU-IAPSC, EAC, IGAD</td>
<td>IPPC; WTO-SPS; STDF</td>
</tr>
<tr>
<td>2.5 Encourage youth entrepreneurship through training in agribusiness, with a focus on high-value crops.</td>
<td>Ministries of ‘employment’ and ‘youth’</td>
<td>AUC, EAC, IGAD</td>
<td>ILO, OECD</td>
</tr>
<tr>
<td>2.6 Sustain the AfCFTA in the formulation and harmonization of the WTO-SPS framework to support member countries in the subregion.</td>
<td>National governments</td>
<td>AUC, EAC, COMESA, IGAD</td>
<td>UNIDO, ITC (International Trade Centre), EU</td>
</tr>
</tbody>
</table>
### Strategic pillar 3: Crop production and productivity

**Strategic goal:** Enhance the nutritional quality and increase the production and productivity of major crops such as cereals, pulses, roots and tubers, fruits and vegetables by at least 25 percent

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<tbody>
<tr>
<td><strong>3.1</strong> Enhance production and supply of fertilizer and agrochemicals in the subregion.</td>
<td>MoA, national associations of input suppliers</td>
<td>AGRA</td>
<td>CropLife, IFDC</td>
</tr>
<tr>
<td><strong>3.2</strong> Improve farmers’ access to rural finance.</td>
<td>MoA, MFIs, credit unions</td>
<td>East Africa Seed Network</td>
<td>IFAD, UNIDO</td>
</tr>
<tr>
<td><strong>3.3</strong> Promote input voucher schemes and strengthen formal and community-based seed supply systems.</td>
<td>MoA</td>
<td>East Africa Seed Network</td>
<td>International Seed Federation, CGIAR</td>
</tr>
<tr>
<td><strong>3.4</strong> Establish schemes for emergency seed banks.</td>
<td>MoA, NARS, NES, NPPO</td>
<td>DLCO-EA, CGIAR centres, World Vegetable Center</td>
<td>CABI</td>
</tr>
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<td><strong>3.5</strong> Promote technologies to ameliorate problematic soils (e.g. high salinity, acidity).</td>
<td>MoA, NARs, NESs, MFIs</td>
<td>AUC (DREA)</td>
<td>IFDC</td>
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<td><strong>3.6</strong> Improve plant health and reduce crop losses through the promotion of integrated pest management (IPM) and establishment of community-based early warning systems.</td>
<td>MoA, local government/city councils</td>
<td>AUC (DREA), ASARECA</td>
<td>IPPC (FAO), WVC</td>
</tr>
<tr>
<td><strong>3.7</strong> Promote small-scale mechanization technologies.</td>
<td>MoA, local government/city councils</td>
<td>AUC, EAC</td>
<td>World Bank</td>
</tr>
<tr>
<td><strong>3.8</strong> Promote private sector involvement in agricultural mechanization service investments.</td>
<td>MoA, Ministries of Trade, local government/city councils</td>
<td>AUC (DREA)</td>
<td>IFAD, JICA, GIZ</td>
</tr>
<tr>
<td><strong>3.9</strong> Promote production of nutrient-rich crops and varieties.</td>
<td>MoA, local government/city councils</td>
<td>AUC (DREA)</td>
<td>CGIAR</td>
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<tr>
<td><strong>3.10</strong> Emphasize and support urban and peri-urban agriculture and school gardening.</td>
<td>MoA, MoE (Ministries of Education), City Admins</td>
<td>AUC (DREA)</td>
<td>RUAF, Urban Agriculture and Food Systems</td>
</tr>
</tbody>
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Strategic pillar 4: Processing and value addition

Strategic goal: Reduce post-harvest losses of major crops by at least 25 percent and improve the quality of produce and products through expanded use of more effective and efficient processing and handling methods

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<tbody>
<tr>
<td>4.1</td>
<td>MoA, farmer federations and unions</td>
<td>EAC, IGAD, EAFF</td>
<td>WFO, World Farmers’ Organisation</td>
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<tr>
<td>Create partnerships of farmers with small-scale agro-industries.</td>
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<td>4.2</td>
<td>MoA, national standards agencies</td>
<td>AUC (DREA), EAC, IGAD</td>
<td>The Postharvest Education Foundation</td>
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<tr>
<td>Promote efficient technologies in post-harvest management.</td>
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<td>4.3</td>
<td>MoA, NARS, NES</td>
<td>AUC, EAC, COMESA</td>
<td>IFOAM, ISO</td>
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<td>Develop local standards and guidelines for quality assurance.</td>
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Amarech, a farmer in Southern Ethiopia, benefited from FAO’s postharvest management project.
**Strategic pillar 5: Market access**

**Strategic goal:** Improve input and output market access for smallholder farmers

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<tr>
<td>5.1 Strengthen market information systems.</td>
<td>MoA, farmer federations and unions</td>
<td>EAGC, COMESA</td>
<td>ITC, International Trade Centre</td>
</tr>
<tr>
<td>5.2 Promote contract farming through commodity producers’ groups and cooperatives.</td>
<td>MoA, farmer federations and unions</td>
<td>EAFF</td>
<td>IFPRI</td>
</tr>
<tr>
<td>5.3 Enhance value-addition, with a particular focus on high-value crops such as fruits and vegetables.</td>
<td>MoA, MoI</td>
<td>AUC (DREA)</td>
<td>WVC, World Vegetable Center</td>
</tr>
<tr>
<td>5.4 Strengthen farmer-based organizations.</td>
<td>MoA</td>
<td>EAFF</td>
<td>CTA</td>
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*MFI – microfinance institutes; NARS – National Agricultural Research System; NES – National Extension System; ProMED – the only international scheme for raising alerts for pests and diseases (part of the Infectious Diseases Society); IPPC members have an obligation to report pests through an official reporting mechanism.*
Partner Implementation Modality (OPIM). TCPs enable FAO-SFE to deploy its technical expertise to respond to priority needs of governments, including capacity development. FAO has a well-established record and mandate to assist member countries in mobilizing resources.

FAO recognizes that partners offer complementary mandates, skills, resources and perspectives, leading to improved outcomes and enhanced ownership by the parties involved. The OPIM allows FAO to allocate project funds to eligible operational partners for project implementation, increasing national ownership and building local capacity.

FAO-SFE will engage with regional organizations to expand their role in supporting the crop sector development strategy and addressing the needs of member countries in the design and implementation of projects.

In line with the above, FAO-SFE is cooperating with the International Trade Centre (ITC) to formulate a project on enhancing value chain development on pulses and oilseeds in Eastern Africa. This initiative aims to benefit 800,000 smallholder farmers in Ethiopia, Kenya, Tanzania and Uganda. FAO-SFE will be responsible for coordinating the delivery of outputs to enhance the production and productivity of pulses and oilseeds through strengthening farmers’ capacity, while the ITC will be responsible for enhancing investment and market access to the pulses and oilseed value chain.

Finally, South–South Cooperation plays a crucial role to achieve the strategic goals outlined in the crop sector development strategy. South–South Cooperation is based on the concept of solidarity that breaks the traditional dichotomy between donors and recipients. FAO’s Hand-in-Hand Initiative, which is similar in approach to South-South Cooperation, will be pursued as it is an innovative business model that provides a unique opportunity through which partners across the public, private and other sectors can work together to end poverty and hunger and build prosperity in developing countries.

4.4 FAO-SFE’s support for the Crop sector development strategy for Eastern Africa 2021–2026

Across a wide array of Africa, regional and country policies and initiatives, FAO-SFE seeks to employ a programmatic approach to support regional bodies, organizations and national governments to increase food security and economic development through the implementation of the strategy.

This ambitious undertaking requires a multitude of response measures to overcome complex challenges. FAO-SFE has the unique ability to provide wide-ranging support for existing policies and initiatives and to facilitate change. Specific policies and initiatives include the International Code of Conduct for the Sustainable Use and Management of Fertilizers (2019) and the Sustainable Agricultural Mechanization: A Framework for Africa. The initiative of continental importance is the AfCFTA, in which Eastern African agricultural producers can exploit opportunities in new markets, agro-processing and other sector linkages.

FAO-SFE will coordinate consultative processes to design and implement specific subregional projects that address the strategic goals and proposed interventions using FAO’s recognized strengths in Joint Resource Mobilization, Technical Cooperation Programmes (TCP) and Operational

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8 For most people, Eastern Africa is a region and a subregion – an area within a region, e.g. an arid zone, marshy area or highland area which spans perhaps two or three countries maximum.
References


