Chapter 3

Promoting Climate-Smart Agriculture

The World Bank will support climate-smart agriculture (CSA) in Sub-Saharan Africa by advocating for the main regional CSA initiatives, fostering adoption of improved CSA policies, and financing national and regional investment programs to scale up adoption of CSA technologies and management options (table 3.1). Within the context of the Comprehensive African Agricultural Development Program, the World Bank is also developing an investment facility that will support countries in the preparation of proposals on CSA as well as other topics prioritized in the 2014 Malabo Declaration on Accelerating Agricultural Growth and Transformation. The so-called Malabo facility may be used to support investments not only through the World Bank but also...
through other financiers (ministries of finance, other multilateral institutions, bilateral sources). It will operate in coordination with the proposed Climate Resilient Investment Facility.

### Sectoral Background and Development Challenges

Agriculture is a major economic driver in Africa and key to poverty alleviation and food security: Growth in the sector reduces poverty by about three times as much as growth in other sectors. Agriculture typically represents 30–40 percent of GDP in Africa and employs up to 65 percent of the labor force, providing livelihoods for millions of smallholders and their families.

Africa is home to more than 225 million undernourished people. It also has the world's highest rate of stunting (40 percent) (FAO 2014). Farm families in Africa and other parts of the world are already overrepresented among the poor. Climate change will strongly reduce their chances of escaping poverty.

### TABLE 3.1  Support to Climate-Smart Agriculture: At-a-Glance Summary

<table>
<thead>
<tr>
<th>Activity</th>
<th>Expected outcomes</th>
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<tr>
<td>Engage in advocacy, awareness raising, and resource mobilization in support of key initiatives in the region: • Vision 25 x 25 in support of the Malabo Declaration on accelerated agricultural transformation • The Africa Climate-Smart Agriculture Alliance • The West African CSA Alliance</td>
<td>Fast track (by 2023) • Improvement in capacity to implement CSA policies in 10 countries • Integration of CSA into regional agricultural policies in West Africa Longer term (by 2026) • Improvement in capacity to implement CSA policies in 20 countries • Integration of CSA into regional agricultural policies across Africa</td>
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<tr>
<td>Support adoption of evidence-based policies and institutional strengthening for CSA</td>
<td>• Strengthening of evidence base for CSA policies in 10 countries • Adoption of improved CSA policies in at least three countries</td>
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<tr>
<td>Provide financial and technical support for national and regional investment programs to scale up adoption of CSA technologies and management options</td>
<td>• Adoption of CSA practices by 10 million farmers • 1 million hectares of farm land with CSA-compatible infrastructure and practices • Improved pastoral systems in place in seven countries • Adoption of CSA practices by 25 million farmers • 3 million hectares of farm land with CSA-compatible infrastructure and practices • Improved pastoral systems in place in 15 countries</td>
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<table>
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<th>Main partners</th>
<th>Resource mobilization</th>
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<td>African governments, as convened through the African Union Commission; CGIAR, CRS, CARE, Concern International, FAO, GIZ, OXFAM, World Vision; COMESA, EAC, ECOWAS, SADC, CORAF, FANRPAN, FARA, NEPAD; DFID, NORAD; World Bank client countries</td>
<td>Fast track (by 2020) $3,000 million Longer term (additional funds by 2024) $2,000 million</td>
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Climate variability is already reducing productivity. Crop productivity simulations show that cereal yields between 1981 and 2002 would have been 2–3 percent higher in the absence of climate shocks—an estimated production loss of 40 million tons of grain a year (Lobell and Field 2007). Without actions to improve the resilience of agriculture, a rise in average temperatures of 2°C by the middle of the century might reduce yields by up to 20 percent (Schlenker and Lobell 2010). Additional temperature increases would cause exponentially more harm. More irregular rainfall amplifies temperature risks; the consequent droughts may trigger famines.

Agriculture and agriculture-driven land use produce significant greenhouse gas emissions (24 percent of the global total [IPCC 2014]), but they can also become a part of the solution. CSA practices such as agro-forestry and improved livestock and pasture management can reduce emissions and remove carbon out of the atmosphere.

African agriculture must strive to attain a triple win: dramatically increasing productivity, enhancing the resilience of farming systems, and achieving lower emissions. CSA can deliver on all three goals (Box 3.1).

Commensurate measures to preserve and increase transportation connectivity for agricultural communities will have a reinforcing effect on agricultural resilience by making it easier for increased harvests to find their way to markets, enabling the efficient distribution of agricultural inputs, and allowing for the efficient movement of food products to regions experiencing poor harvests as a result of climate change.

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**Box 3.1 Increasing African Food Security While Reducing Greenhouse Gas Emissions through Climate-Smart Agriculture**

African agricultural and livestock systems are extremely vulnerable to climate change: Drought, heat, extreme events, changes in water availability, disease, and pest infestations, to name but a few of the many complex impacts, reduce yields and increase the rate of animal deaths.

Falling yields come at a time when population growth and increasing incomes will require African agricultural systems to almost triple overall production. Doing so in a business as usual scenario would triple agriculture and land use–related emissions, catapulting Africa to near the top of international agricultural emission contributors and threatening achievement of the 2°C goal. CSA investment plans, projects, and policies can help address these challenges and increase production, enhance resilience, and reduce emissions. Indeed, with the help of low-carbon agricultural production systems, Africa could triple food production while controlling emissions.

The widespread use of high-efficiency, low-energy irrigation systems could reduce drought stress, enabling higher production and lower losses as a result of natural disasters and improving energy efficiency per kilogram of food. Scaling up agro-forestry would dramatically reduce fertilizer use...
Initiatives to Address the Challenges and Enhance Resilience

At the 2014 Malabo Summit, convened by the African Union within the context of the renewal of the Comprehensive African Agricultural Development Program (CAADP), African heads of state committed to accelerating agricultural growth and enhancing the resilience of livelihoods and production systems by 2025. They endorsed Vision 25 × 25, which aims to have 25 million farmers in Africa using CSA practices by 2025.

The Africa Climate-Smart Agriculture Alliance aims to reach 6 million farming families with CSA by 2022. Its initial focus is in Ethiopia, Kenya, Malawi, Niger, Uganda, Tanzania, and Zambia.

The Common Market for Eastern and Southern Africa (COMESA), the East African Community (EAC), and the Southern Africa Development Community (SADC) are jointly implementing the Initiative for Climate Smart Agriculture in Eastern and Southern Africa, funded by the European Commission, the Norwegian Ministry of Foreign Affairs, and the U.K. Department for International Development (DFID). The initiative aims to establish evidence-based policies on CSA that may attract adaptation and mitigation finance to the region.

Under the CAADP umbrella and with the support of the German Agency for International Cooperation (GIZ), the New Partnership for Africa’s Development (NEPAD) is implementing a program on adaptation of agriculture to climate change that supports selected regional economic communities and African Union member states in implementing climate change adaptation strategies.

The Food, Agriculture and Natural Resources Policy Analysis Network (FANRPAN) operates a series of CSA initiatives in eastern and southern Africa focused on evidence-based policy making, strengthened institutional capacity, and cross-country watershed management.
Many initiatives on CSA are thus underway. This business plan will help these efforts source funding and explore their synergies.

In June 2015, in Bamako, a West African CSA alliance was launched and a framework for the integration of CSA into regional agriculture policy was discussed during a high-level forum hosted by the West African Economic and Monetary Union (ECOWAS) and the Permanent Interstate Committee for drought control in the Sahel (CILSS).

World Bank CSA lending operations in Africa include two major CSA projects under preparation in Niger and Kenya. Discussions are ongoing in many other countries.

The Consultative Group for International Agricultural Research (CGIAR) and the Africa Climate-Smart Agriculture Alliance have developed a framework document that guides investment on CSA for Africa. It outlines country-led action to support and enhance existing country CSA programs. The document can guide countries seeking to become more climate smart by developing national CSA action plans. As part of the Africa Climate Resilient Investment facility described later in this business plan, countries would also receive assistance through a CSA center of excellence, supported by the World Bank and hosted by the African Union and NEPAD.

CSA country readiness assessments and investments plans based on this framework will be developed in three pilot countries. They could be showcased at COP21 to demonstrate best practice and form the basis of broader dialogue with partners and donors. In addition, two World Bank–assisted country investment operations will be prepared and presented to deliver a proof of concept of the framework approach.

The Malabo facility will be established to support the next step of CAADP financial intermediation. It will be operational by December 2016. The World Bank, the African Development Bank, the International Fund for Agricultural Development (IFAD), the German Federal Ministry for Economic Cooperation and Development (BMZ), DFID, NORAD, USAID, Agence Française de Développement (AFD), and other multilateral and bilateral sources will be invited to provide funding in order to enhance investments in sustainable agricultural development.

With the assistance of the World Bank, a CSA center of excellence would be established at the African Union in Addis Ababa or at NEPAD in Pretoria, to support the Malabo facility and the Africa Climate Resilient Investment Facility. The center would offer technical assistance (through the Food and Agriculture Organization [FAO], Climate Change, Agriculture and Food Security [CCAFS], and other centers of the CGIAR) as requested by countries. It would ensure regional coordination, shared learning among participating countries, and preparation of tailored country support packages.

The center would provide assistance in the following areas:

- assessing CSA country readiness by taking stock of ongoing CSA activities
- determining CSA preparedness, policy needs, investment gaps, and human capacity constraints
• developing integrated national CSA strategies and investment plans, with building blocks and clear roadmaps for implementation
• translating CSA strategies into transformational action on the ground and engaging with the private sector and other partners
• promoting best-practice learning and results tracking systems to maximize lessons learned.

**Expected Outcomes**

With the center of excellence in place, CSA country readiness assessments and investments plans would rapidly multiply across Africa. Within 12 months of COP21, 10 readiness assessments and investment plans would be developed; within 24 months the number would increase to 30. A rapid scale-up of CSA-related lending in Africa would lead to five investment operations within 12 months of COP21, 15 within 24 months, and 30 within 36 months.

**Financing Plan**

Table 3.2 describes the financing plan.

**Key Partners**

The World Bank will deploy comprehensive resources, including IDA/IBRD and trust funds, to support the objectives outlined above. Given the growing role of the private sector in agricultural development, the Bank will team up with other branches of the World Bank Group, including IFC and MIGA.

**TABLE 3.2  Support to Climate-Smart Agriculture: Resource Mobilization Plan**

<table>
<thead>
<tr>
<th>Source</th>
<th>Amount ($ million)</th>
<th>Notes</th>
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<tbody>
<tr>
<td>Domestic sources</td>
<td>240</td>
<td>Co-funding of IDA credits</td>
</tr>
<tr>
<td>IDA</td>
<td>1,300</td>
<td>From countries and regional IDA allocations; figure assumes a tripling of IDA funding with climate co-benefits in agriculture over the baseline (FY11–FY15)</td>
</tr>
<tr>
<td>Private sector</td>
<td>240</td>
<td>Investments by private corporations in the context of government-led integrated CSA investment projects</td>
</tr>
<tr>
<td>Climate finance (GCF, GEF, CIF, and so forth)</td>
<td>100</td>
<td>Based on country quotas</td>
</tr>
<tr>
<td>Other development finance (bilateral, multilateral)</td>
<td>320</td>
<td>AfDB, IFAD, USAID, and other bilaterals</td>
</tr>
<tr>
<td>To be determined</td>
<td>800</td>
<td>Private sector, lower-level governments, NGOs, and farmer organizations</td>
</tr>
<tr>
<td><strong>Total fast track (resources raised by 2020)</strong></td>
<td><strong>3,000</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Longer term (additional resources raised by 2024)</strong></td>
<td><strong>2,000</strong></td>
<td></td>
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</tbody>
</table>
It will collaborate with traditional and emerging partners in the sector, including other multilateral institutions, bilateral donors, the Green Climate Fund, and private sector investors. It will collaborate with traditional and emerging partners in the sector, including other multilateral institutions, bilateral donors, the Green Climate Fund, and private sector investors.

Notes
1. The Africa Climate-Smart Agriculture Alliance was convened by the New Partnership for Africa's Development (NEPAD). It brings together the Consultative Group for International Agricultural Research (CGIAR), the Food and Agriculture Organization (FAO), the Forum for Agricultural Research in Africa (FARA), and the Food, Agriculture and Natural Resources Policy Analysis Network (FANRPAN) as well as several large NGOs (CARE, CRS, Concern International, Oxfam, and World Vision).
2. See https://ccafs.cgiar.org/climate-smart-agriculture-prioritization-framework#.VhKOaNLLuUk.