Info Note

Climate readiness indicators for agriculture

Building programs for climate-smart agriculture requires new capabilities. Indicators can help assess where investment is needed.

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Key messages

- Countries vary in their institutional technical and financial abilities to prepare for climate change in agriculture and to balance food security, adaptation and mitigation goals.

- Indicators for climate readiness provide guidance to countries and enable monitoring progress.

- Readiness assessments can enable donors, investors and national decision-makers to identify where investments are needed or likely to be successful.

- Examples of climate readiness indicators are provided for five work areas: 1. governance and stakeholder engagement, 2. knowledge and information services, 3. climate-smart agricultural strategy and implementation frameworks, 4. national and subnational capabilities and 5. national information and accounting systems.

Coping with climate change in agriculture while ensuring food security and reducing greenhouse gas emissions or emission intensities will require new information, technologies, finance instruments and possibly new institutions. Many countries are building these capabilities now, but there is much uncertainty about what is needed and what is feasible.

The capacity to manage plan, implement and monitor climate finance and activities related to climate change is a condition known as *climate readiness.* Most countries still lack the larger institutional technical capacities and infrastructure necessary to enable climate-related programs at large scales. Such infrastructure and capacities may be needed at the subnational level in a project or local district, or be nationwide. In practice this means linking agricultural investments, policies and programs to climate-related considerations.

Each sector has distinctive requirements for readiness. The purpose of climate readiness in the agriculture sector is to support programs for more resilient and low emissions agriculture, or what has been called climate-smart agriculture (CSA) – agriculture that enhances food security, is resilient to climate change and reduces emissions. Programs for CSA in turn aim to:

1. Support use of CSA practices.

2. Create enabling conditions for CSA innovations among farmers and those supporting them.

3. Use climate-related goals and development pathways in decision-making (process-based approach).

CSA can be implemented in many ways depending on social and biophysical contexts and local agricultural development needs. There is no one CSA solution or prescription for programs. As countries develop readiness in the agriculture sector, adaptability and flexibility should be guiding principles.

Indicators for climate readiness can help donors and policy makers anticipate what is needed to make progress and to track that progress. Some indicators are appropriate for formal monitoring, reporting and verification or for assessing readiness for climate finance in particular sectors. To build readiness over time, the process can be broken down into phases, with some elements prioritized over others. Countries can set goals for readiness appropriate to their contexts and available resources. Iterative improvement should be planned.

The following work areas and indicators are an example of a climate readiness framework. The concept of readiness has become widely used in the context of finance for Reduced Emissions from Deforestation and Forest Degradation (REDD+). While the framework here draws from some elements of REDD+ readiness, it has

been adapted for the agricultural sector and is intended to have wider applicability as a planning and monitoring tool for shifts in agricultural governance and climate finance.

The readiness work areas and indicators presented here are an effort to catalyze attention to the larger systems needed to support CSA. The framework is offered as an example to inform how countries, donors or finance organizations think about building programs for CSA and to help identify where attention is needed and target interventions with high rewards. They also can show finance organizations where conditions for CSA are strong.

1. Effective governance and stakeholder engagement

Indicators include:

- Lead ministry or inter-ministerial body designated to manage and coordinate climate-ready activities with clear decision-making processes and transparency.

- Institutional roles are clear in agencies and local jurisdictions.

- Platforms exist for stakeholder engagement and consultation, including the private sector and ensuring the inclusion of affected and vulnerable groups, such as smallholders, indigenous groups and women.

2. Knowledge base and information services

Indicators include:

- Vulnerability and adaptation needs of farmers and agricultural sector assessed.

- Classification exists of current agricultural production systems related to adaptation needs and mitigation opportunities.

- Identification of options and priorities for CSA, including reducing agricultural greenhouse gas (GHG) emissions is consistent with agricultural development objectives.

- Climate information services are available and accessible to farmers and other agricultural decision makers.

- Analysis exists of current land-use planning, land-use law, policy and governance impacts on CSA and drivers of CSA.

- Social and environmental impacts of CSA anticipated before programs are scaled up, particularly for vulnerable groups in agriculture assessed.

- Information is easily accessible to all national agencies, jurisdictions and civil society.

3. Climate-smart agriculture strategy and implementation framework

Indicators include:

- Agreed-upon vision and goals exist for the agricultural sector that balance food security, adaptation and mitigation and help meet United Nations Sustainable Development Goals.

- Maps and other analysis of the social and biophysical suitability of CSA interventions are available.

- Identification of priority interventions, geographic areas and potential reductions in vulnerability and emissions exists.

- Cost-benefit analysis of program options exists to inform business viability and finance needs.

- Program budgets and implementation schedules available.

- Programs funded.

- CSA mainstreamed into predominant agricultural programs.

- Policies identified consistent with agricultural development priorities.

- Provisions are in place for program monitoring and improvement at scales that can inform planning, finance and formal monitoring and reporting and verification requirements (see Work Area 5).

4. National and subnational capabilities to develop sustainable CSA infrastructure and investment strategies and practices

Indicators include:

- Rural credit is available for CSA practices.

- Capacity exists to support access to seed banks and make adapted seeds available to farmers.

- Other inputs and effective technical support capacities are available for CSA.

- Private sector and rural farmers' organizations, including women and youth groups, support innovation, learning and implementation.

5. National information system for monitoring and accounting in agriculture

Indicators include:

- Criteria and measureable indicators for resilience, climate change mitigation and productivity or food security identified.

- Monitoring systems for climate threats and vulnerability assessments exist.

- National system in place to measure, monitor, report and verify GHG emissions and multiple-benefit indicators relevant for agriculture, in coordination with other monitoring activities.

- National inventory uses country-specific emissions factors for major production systems and updates activity data annually.

- Baseline projections established for measuring GHG reductions in major production systems or regions (land).

- Activity data are collected at levels of sufficient detail to facilitate Tier II emissions factor estimates and in categories consistent with FAO statistical reporting for emissions.

- Accounting framework and baselines are integrated with other national statistical and data collection or monitoring systems.

- Monitoring occurs of impacts and effectiveness of safeguards.

Table 1. Work areas for agricultural climate readiness and desired outcomes

Work area	Outcome
Effective governance and stakeholder engagement	Transparency, inclusiveness and effectiveness in national and local governance increased. The government engages civil society—including vulnerable and affected groups such as indigenous people and women—and the private sector in national and subnational climate-smart agriculture decision-making, strategy development and implementation.
Knowledge base and information services	Knowledge for planning and assessing the impacts of interventions exists. Climate-smart agriculture practices are supported by extension services and targeted communication products.
Climate-smart agriculture strategy and implementation framework	Food security, livelihood and climate change benefits are realized in climate-smart agriculture strategies and actions.
National and subnational capabilities to develop sustainable CSA infrastructure and investment strategies and practices	National and subnational programs have inputs, technical capacities and dependable funding necessary to implement CSA.
National information system for monitoring and accounting in agriculture	Systems and capacities to develop and implement information and monitoring systems, including verification and reporting for greenhouse gas emissions, are established and operating.

Climate readiness across sectors

Climate readiness for agriculture will have an impact on the readiness of other sectors like forestry and land-use change (and vice versa). For example, spatially referenced data for soils and climate will be needed in other land use-related sectors. Monitoring emissions in agriculture can build on the monitoring, reporting and verification systems built already for forestry. Funding mechanisms directed to governments units may be relevant to more than one sector. Training programs could be multi-sectoral. An integrated approach to climate readiness across agriculture, forestry and other land uses can increase resource efficiency and help identify practical synergies in interventions.

Catalyzing effort

The goal is not to create new organizations and infrastructure, but to help existing institutions and processes evolve to meet new needs. Agricultural institutions can add climate-related information and activities, while climate-related institutions would add agricultural considerations. This brief can be a resource for anticipating what will be needed in this process and catalyze broader efforts.

Further Reading

- Zurek M, Streck C, Roe S, Haupt F. 2014. Climate Readiness in Smallholder Agricultural Systems: Lessons Learned from REDD+. CCAFS Working Paper no. 75. Copenhagen, Denmark: CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS). https://ccafs.cgiar.org/publications/climate-readiness-smallholder-agricultural-systems-lessons.learned-redd

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- Negra C. 2014. Integrated National Policy Approaches to Climate-Smart Agriculture. Insights from Brazil, Ethiopia and New Zealand. CCAFS Report No. 11. Copenhagen: CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS). http://hdl.handle.net/10568/41648

These work areas and indicators reflect discussions in a CCAFS-USAID donor meeting on metrics for climate-smart agriculture held 21 March 2015 in Paris and results of an analysis of the lessons learned from readiness for REDD+ by Zurek et al., published by CCAFS in 2014 (see Further Reading).

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