

TERMS OF REFERENCES

ENABLING CAPACITY FOR EXTENSION AND ADVISORY SERVICES FOR CLIMATE SMART AGRICULTURE AND RESILIENCE

Task	Strengthen the capacity for extension and advisory services for climate smart agriculture and resilience
Purpose	To institutionalize expertise in the line Ministries and within ADRA to bridge the gap between scientific insights and practical applications, fostering climate-responsive planning to safeguard food security in the evolving climate landscape of Somalia.
Target Group	Directly: MOE Officers, Agricultural Extension Agents and ADRA staff Indirectly: Farmers, Farmer trainers, and School Garden Management Committees (SGMC)
Locations	Banadir, Jubaland, Southwest and Hirshabelle States (Somalia)
Duration	TBD
Start Date	September/October 2025

Background

Achieving food security, while also adapting to climate change and reducing greenhouse gas (GHG) emissions, is a matter of urgency on a global scale. Climate change, food security and food systems are crucial and closely interlinked concepts, which have gained considerable attention given the global efforts to achieve the sustainable development goals (SDGs) by 2030. Climate change affects every aspect of food security, particularly in the developing world, as the former interact with other social, economic, demographic and institutional changes, by producing non-linear outcomes. Agriculture undoubtedly represents the most crucial source of livelihood in many poor countries and contributes immensely to their economy, by providing the main source of employment, by providing food and raw materials that serve as an input for the industrial sector, and by contributing to international trade and exports.

The climate in the Horn of Africa is projected to become even drier, warmer, more erratic, and more extreme than in recent decades and thus less favorable to crops, livestock, fisheries, and forestry-based livelihood systems. While most climate models predict higher rainfall, the expectation of a drier climate is supported by the stronger historical evidence. Somalia has a predominantly agrarian economy, with agriculture accounting for about 60% of the country's GDP. However, the pre-existing vulnerabilities of decades of conflict, climate change, drought, flooding, and insecurity have had a significant impact on the agricultural sector in Somalia. A warmer future, with increased variability and frequency of extreme rainfall events is predicted. The consequences of such changes are dire for Somalia's agriculture. Higher air temperatures will increase transpiration from soil, tree canopies, and water bodies. More variable and extreme rainfall on already barren soils will result in more run-off and erosion, less groundwater recharge, and less water availability in the surface layers for plant growth. Other likely impacts include reduction of vegetation for grazing and more variable water availability, with grave impacts on livestock herding and related livelihoods. Rising sea temperatures and acidification will also reduce fish stocks and change their distribution.

In this context, climate-smart agriculture (CSA) has been proposed as a useful approach to simultaneously increase food productivity, sustainability, resilience and food security. An important aspect to be considered is the context-dependence of CSA practices, and their great variability at national, regional and local level. In other words, **one size does not fit all**. Flexibility appears to be the key to making CSA practices successful: farmers in different regions and territories might prioritize different CSA technologies and interventions, and factors that may act as enablers in one context can also function as barriers in another context. To achieve this, the assignment is guided by the Three Pillars of Climate-Smart Agriculture, which will be the focus of the capacity building initiative. They include (i) increasing production: entails training farmers on strategies to boost agricultural output while adapting to changing environmental conditions; (ii) resilience: entails training farmers on how to implement farming practices that are able to withstand the unpredictable effects of climate change; and (iii) avoidance: entails training farmers on how to identify methods that can help them avoid losses caused by climate change, such as extreme weather events.

It is therefore important for an in-depth exploration and explanation of climate change science to key stakeholders, focusing on understanding of the climate models, downscaling, projections, and uncertainties

related to climate change. This foundational knowledge base lays the groundwork for effectively introducing actors to the key concepts and practices of Climate-Smart Agriculture (CSA).

Rationale:

Climate-Smart Agriculture is knowledge intensive and entails moving toward more agro-ecology based approach rather than conventional intensification. Implementing and scaling up of CSA at a watershed or landscape level is even a greater knowledge intensive endeavour. Unlike conventional agricultural practices, CSA requires capacity to identify and implement synergetic activities with minimum trade-off that ensure high productivity, enhance resilience, and reduce GHG emissions. Therefore, all implementers of CSA at different scales need to be trained and equipped with the necessary knowledge and skills. Awareness and training among farmers increase success of CSA. Dissemination of information and skills through 'farmer-to-farmer' pathways are effective in delivering desired results and enhancing climate smart agriculture technology adoption. Exposure visit is essential in accelerating adoption and sustaining of newer innovations for both agricultural extension officers and farmers.

Proper implementation of CSA requires extension and advisory services to build the capacity of farmers on understanding and identifying climate related risks, identifying the relationship between climate risks and other environmental problems, understanding the synergies and trade-offs of different agricultural practices and technologies, estimating required inputs for CSA practices and evaluating the productivity and environmental benefits of CSA. The trainings therefore need to be provided through targeted trainings sessions, meetings, demonstrations, social gatherings and other relevant methods for community participation in planning and implementation of CSA and adoption of CSA technologies. CSA is generally a practice of analyzing the synergies and trade-offs of a set of agricultural practices within a farm, a watershed and/or a landscape level and then implement, monitor and adjust as required. It is therefore imperative that we deliberately focus on building the capacity of experts and development agents to scale up CSA. Equipping extension agents with skills and techniques to implement CSA at the required scale (plot or landscape). Hence, there is a need to develop a standardized CSA training material to train Agricultural Extension Agents and Development Agents.

Overall Objective:

The primary goal of the training is to institutionalize expertise in the line Ministries and within ADRA to bridge the gap between scientific insights and practical applications, fostering climate-responsive planning to safeguard food security in the evolving climate landscape of Somalia.

This Training of Trainers (ToT) aims to advance the knowledge and skills of staff and extension officers to enhance climate-resilient agricultural systems in the target locations of Somalia. This is to be achieved through empowerment and knowledge transfer to communities to help develop more resilient and adaptive agricultural systems, contributing to sustainable agricultural development.

The key objectives of the training are:

- (i) Empowerment: Equip agriculture extension officers with knowledge and skills to interpret and apply climate change information for climate resilience and adaptive agricultural practices.
- (ii) Knowledge Transfer: Facilitate translation of scientific insights into practical applications to foster climate-responsive planning and food security in the changing climate of Somali.

Target

The direct target for this capacity building initiative includes Agricultural Extension Agents and Development Agents (staff and other relevant parties). The participants will be selected based on specific criteria, including their willingness to participate in the program and their commitment to improving their agricultural practices.

Scope

The scope of the assignment entails:

The spectrum of the dimensions involved in CSA practices is very broad, and they are all interrelated and interconnected. This assignment will focus on the following categories:

- i. Water-smart: *in situ* moisture conservation and efficient water (irrigation) application system
- ii. Weather-smart: agro-advisory services and robust weather forecasting
- iii. Crop-smart: improvement and adaptation of varieties with higher input use efficiencies
- iv. Nutrient-smart: manuring and site-specific integrated nutrients management
- v. Carbon and energy-smart: resource conservation technologies and farm chemical reduction
- vi. Knowledge and technology-smart: gender equality and awareness campaigns to increase capacity-building.

Key activities shall include:

- (a) Developing a standardized training material for CSA implementers
- (b) Identify training- of-trainers (TOTs) from project localities
- (c) Train the TOTs in theoretical and hands-on sessions
- (d) Help and monitor the TOTs to train CSA implementers at grass root level
- (e) Provide refresher TOTs with additional skills based on their field experience
- (f) Monitor and support the TOTs and their CSA implementation capacity at the field level.
- (g) Pilot and Scale-Up: Potentially include a pilot phase followed by a broader rollout to test and refine interventions.

Methodology

The actors need to be supported to gain critical insights into selecting and implementing locally tailored CSA technologies and practices, with a strong emphasis on strategies to scale up these interventions in their localities to effectively combat adverse impacts of climate change. Exploration of climate hazards, exposure, vulnerabilities, and risk indicators, empowering actors to critically analyze and address the impacts of climate change on agriculture is equally crucial. Another critical component of the capacity building would be to focus on effective communication strategies, with targeted sessions designed to sharpen the skills of actors in engaging and mobilizing farming communities. More emphasis shall be on integrated interactive sessions, hands-on exercises, case study analyses, and dynamic group discussions to maximize the impact and effectiveness of the trainings. Participants should be exposed to tackle hypothetical scenarios to analyze potential climate hazards, exposure, vulnerabilities, and risks, fostering a collaborative and deeply practical learning environment.

Implementation Strategy

Prior to implementation of planned activities extension workers, development agents and Lead farmers will be trained in the technical standards and application of the selected CSA practices and technologies. Training of farmers will be supported by practical field exposure to pilot CSA watersheds and landscapes where relevant technologies, controlled grazing and other sustainable land management approaches are tested. Development agents and technical experts will provide timely support including access to inputs and required information during the implementation of planned CSA measures. Lead farmers will play important roles in providing technical advice to their respective farmer groups and communicate with extension workers based on skill gaps during implementation. Regular exchange between the CSA farmer groups will be facilitated at community levels through the extension workers.

Deliverables

- (a) Needs assessment reports.
- (b) Inception report including work plan and climate-smart training approach and manual(s).
- (c) Training manual (modules and materials)
- (d) Demonstration plots and community learning events
- (e) Final project report detailing CSA adoption, achievements, challenges and lessons learned.

Timeline and Budget

- (a) Provide a detailed project timeline with key milestones and activities.
- (b) Outline the budget required for personnel, activities, and materials.

Monitoring and Evaluation

- Establish a robust monitoring system to track key performance indicators related to productivity, adoption rates, food security, and climate resilience.