

PART 1: Description and all information of the outcome/impact reported

TYPE

OICR: Outcome Impact Case Report

TITLE

An estimated 11,000 rice and cassava farmers in Cambodia are using agricultural advisories based on the seasonal forecast with support of Local Technical Agro-climatic Committees

STATUS

New

YEAR

2022

OUTCOME IMPACT CASE REPORT

Study #4706

Stage of Maturity of change reported: stage 2

GEOGRAPHIC SCOPE: NATIONAL



COUNTRY: Cambodia

Comments: Battambang and Kampong Speu Provinces, Cambodia.

OUTCOME STORY/IMPACT STATEMENT

An estimated 11,000 rice and cassava farmers from 23 Agri-cooperatives in Battambang and Kampong Speu provinces used the agroclimatic advisories in their planning and decision-making for better risk management. DeRISK SE Asia introduced the Local Technical Agroclimatic Committee (LTAC) approach in Cambodia to co-develop seasonal agroclimatic advisories based on seasonal forecasts with different type of stakeholders in two target provinces. The advisories were disseminated through multiple channels, including printed bulletins, Telegram, the SESAME mobile application, and face-to-face communication.

The Local Technical Agroclimatic Committees (LTACs) are established at the provincial level to co-produce agroclimatic advisories that are tailored to the local context. The committees include relevant partners and stakeholders, such as the Provincial Department of Agriculture, Forestry, and Fisheries (PDAFF), and Provincial Department of Water Resources and Meteorology (PDoWRAM), agriculture technical experts from District Agriculture Offices (DAO), commune authorities and agri-cooperatives leaders. The advisories are based on Crop Decision Trees for rice and cassava that provide specific information on crop stages, agricultural practices, climate risk and response strategies under different climate scenarios. Agroclimatic advisories based on seasonal forecasts are disseminated to farmers via multiple communication channels: the distribution of printed bulletins during commune-level meetings, farmer interaction in villages by the leaders of agri-cooperatives and local authorities, and the installation of printed posters in public spaces. Farmer leaders and local authorities also immediately receive seasonal forecasts and agroclimatic advisories using digital channels, such as the [SESAME](#) application and Telegram. As a result, approximately 11,000 rice and cassava farmers, including 745 leaders of agricultural cooperatives and commune authorities, applied agroclimatic advisories for crop planning and decision-making. Farmers use agroclimatic advisories for seed varieties selection, land preparation, planting methods, water management, pest control, and harvesting date differently for wetter and drier climate conditions. This assisted the farmers in coping with potential climate-related risks such as excessive rainfall, flooding, drought, and pest infestation.

For planting, farmers choose rice seed and cassava crop varieties that are tolerant to adverse climate conditions such as wetter or drier than normal scenarios. Different planting methods are utilized, such as broadcasting wet rice seed (direct-seeding) in wetter climatic conditions and broadcasting dry rice seed in drier climate conditions. Rice field dikes and drainage systems are constructed for enhanced water management, and farmers have improved their pest and disease control measures. For example, farmers restrict the application of nitrogen fertilizer and the amount of water released from their rice fields when the rice blast disease is increasing under wetter than normal scenarios. Farmers can better plan and manage their farms to avoid climate risks because they have improved access and enhanced understanding of the importance of seasonal forecasts and agroclimatic advisories.

Contributing external partners:

- Department of Agricultural Land Resource Management (DALRM)
- Battambang Provincial Department of Agriculture, Forestry, and Fisheries
- Kampong Speu Provincial Department of Agriculture, Forestry, and Fisheries
- Regional Integrated Multi-Hazard Early Warning System for Africa and Asia (RIMES)
- International Institute Rural Reconstruction

CGIAR INNOVATION(S) OR FINDINGS THAT HAVE RESULTED IN THIS OUTCOME OR IMPACT

The model for climate-informed agricultural climatic advisories being tested in Cambodia is based on the "Local Technical Agroclimatic Committees" (LTAC) approach (1). Between 2013 and 2015, the International Center for Tropical Agriculture (CIAT) in Latin America developed LTAC, which has since been successfully implemented and adapted to the Southeast Asian context. LTAC is a dialogue process that seeks to understand the possible behavior of the climate in a locality and to generate local-specific recommendations to reduce risks associated with expected climate variability. It includes scientists, technicians, representatives from the public and private sectors, and farmers. This process produces a local agroclimatic bulletin, which contains the seasonal climate forecast for the region, the potential impacts on crops for specific conditions in time and space, as well as recommendations for agricultural production planning and decision-making, and is distributed to end-users or farmers.



ELABORATION OF OUTCOME/IMPACT STATEMENT

The Alliance of Bioversity International and CIAT and the International Institute of Rural Reconstruction led the piloting of participatory Local Technical Agroclimatic Committees (LTACs) in Battambang and Kampong Speu Provinces in Cambodia as part of DeRISK SE Asia. Two provincial LTACs were formed, including technical government departments like the Provincial Department of Agriculture, Forestry and Fisheries (PDAFF), Provincial Department of Water Resources and Meteorology, District Agriculture Office, agricultural cooperatives, local governments, and other stakeholders. LTAC meetings were held every 2-3 months throughout the wet season of 2021 and 2022 to prepare agro-advisories for rice and cassava farmers based on seasonal forecasts issued by the Department of Meteorology and crop decision trees (CDTs). These CDTs were developed in collaboration with the Cambodian Agricultural Research and Development Institute (CARDI) and the General Directorate of Agriculture (GDA). Through the LTACs, agroclimatic bulletins were designed with agro-advisories that are appropriate for the agroecosystems in the target communes (1, 2). PDAFF technical staff distributed agroclimatic bulletins through commune-level meetings and explained them to leaders of agricultural cooperatives and commune authorities. Subsequently, PDAFF continued to explain the agroclimatic bulletins to members of agricultural cooperatives and other interested farmers in the villages. In total 745 agricultural cooperative and commune leaders were trained on the use of agroclimatic advisories based on seasonal forecasts and disseminated bulletins to farmers in their communities. During the wet seasons of 2021 and 2022, an estimated 11,000 farmers received agroclimatic bulletins. Members of agricultural cooperatives and other interested farmers in the villages have used seasonal forecasts and agro advisories to plan and make decisions about their farms (4). A baseline survey among 301 farmers (122 women) was conducted in April-June 2021 with an end-line among 315 farmers (120 women) in October-November 2022. The findings demonstrate that the percentage of farmers accessing the bulletins increased from 64.8% to 95.9% between the baseline and endline surveys. The number of farmers that have implemented farming activities based on the agro-advisories to prevent and mitigate climate impact has increased from 72.1% in the baseline survey to 93.9% in the endline survey (5, 6). Through cooperation with the Department of Agricultural Land Resource Management of the GDA, the CDTs for rice and other key crops as cassava and maize are now being expanded to 22 provinces in Cambodia, with the plan to use these for providing agroclimatic advisory to farmers through LTAC or other mechanisms (3).

PART 2: Mapping to Alliance strategy and structure

KEY CONTRIBUTORS



Lever 3 - Climate Action

SDG TARGETS



- **13.2** - Integrate climate change measures into national policies, strategies and planning
- **13.3** - Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning
- **13.1** - Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries

GENDER, YOUTH, CAPACITY DEVELOPMENT AND CLIMATE CHANGE

- **CapDev relevance:** 2 - Principal. Provincial and district level training on local agro-climatic bulletin development is a key activity. The trainings organized by the DeRISK project were attended by PDAFF and District Office of Agriculture extension officers, leaders of agricultural cooperatives, local authorities (village chiefs, commune chiefs), and representatives of existing projects/programs. (1, 2)
- **Climate change relevance:** 2 - Principal. Climate change is a priority in this activity capturing the significance of the use of climate information for short- and long-term farm planning and decision-making (3, 4)

REFERENCES

1. IIRR, Alliance Bioversity & CIAT, RIMES and DALRM, 2022. Local Technical Agroclimatic Committee (LTAC) Implementation Guide: experiences from Battambang and Kampong Speu Provinces in Cambodia (2022). [here](#)
2. LTAC Video. Providing climate services to smallholder farmers in Battambang and Kampong Speu Provinces in Cambodia (2022). [here](#)
3. Crop Decision Trees (CDT) for rice, cassava, mungbean, soybean, and cashewnut in Battambang and Kampong Speu Provinces (2021). [here](#)
4. Agroclimatic bulletins for rice and cassava in Battambang and Kampong Speu Provinces (2021-2022). [here](#)
5. Baseline survey report (April-June 2021). [here](#)
6. Endline data (October-November 2022). [here](#)

Communication Material

LTAC implementation guide: Experience in Battambang and Kampong Speu provinces in Cambodia [here](#)

CONTACT PERSON

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