PART 1: Description and all information of the outcome/impact reported
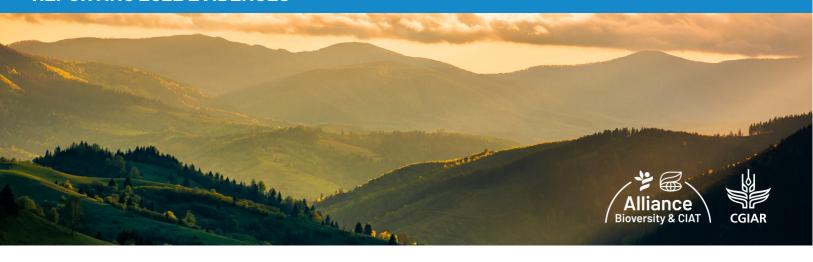
TYPE
OICR: Outcome Impact Case Report

TITLE
Over 100,000 Laotian farmers use the seasonal climate forecasts and weekly agro-advisories disseminated via Laos Climate Services for Agriculture to improve crop management

STATUS
Updated at new level of maturity

YEAR
2022

OUTCOME IMPACT CASE REPORT
Study #4698
Stage of Maturity of change reported: stage 2

GEOGRAPHIC SCOPE: NATIONAL

COUNTRY: Lao People's Democratic Republic

OUTCOME STORY/IMPACT STATEMENT

In Laos, farmers are using the validated agro-climatic advisories from the Alliance-supported Strengthening Agro-climatic Monitoring and Information System to improve their farming practices, such as crop variety, planting dates, and water and fertilizer applications. These advisories were integrated into the Laos Climate Services for Agriculture (LaCSA) system which disseminates information to over 100,000 farmers through farmer field schools, loudspeaker broadcasts, Whatsapp and Facebook. It is currently at the operational stage.

In Lao PDR, the GEF-funded and FAO-implemented project Strengthening Agro-climatic Monitoring and Information System (SAMIS) has advanced climate services for agriculture. With its strong relationship with the Ministry of Agriculture and Forestry (MAF) and Ministry of Natural Resources and Environment (MoNRE), SAMIS generates and delivers climate information for agricultural planning and decision-making at national, provincial, district and village levels. The strong interest and willingness of both SAMIS and The Alliance-supported DeRISK SE Asia projects to collaborate and work together in generating impact at scale have brought significant technical advances and useful content to the Laos Climate Services for Agriculture (LaCSA) system. The collaboration, which started with DeRISK supporting specific training topics and activities for SAMIS, has expanded organically into various areas of work such as: i) development of cropping calendars for provinces and districts (both English and Lao languages); ii) development of tailored agro-climatic advisories disseminated on weekly basis at district level and seasonal scale at provincial level for irrigated, rainfed and lowland rice, maize, cassava, banana, coffee, pumpkin, livestock, cabbage; SAMIS is using official website, Facebook, Whatsapp, at provincial and district levels and loudspeaker and school posters in villages as communication channels for dissemination; iii) development of field level crop monitoring tool for near real time monitoring and information sharing using Kobo tool with pending Ministerial Order from MAF endorsing the tool as official field data collection for LaCSA; iv) assessment of adaptive capacity of agricultural livelihoods to be use for national adaptation planning; v) support to develop M&E data collection tools, analysis and reporting. The tools and approaches introduced by DeRISK have been taken up by SAMIS and currently being applied and integrated into LaSCA system and its processes.

Over 85% of target population changed practices as a result of access to agro-advisories from loudspeakers. Strategic planning related to selection of crop varieties, planting dates and water management were the main responses from farmers because of access to advisories. Most of farmers (>80%) claimed to have adjusted farming practices based on SAMIS bulletins received from community speaker, whether or not they have received additional intervention by attending FFS (Field Farmers Schools).

Promotional Product:

- Strengthening Agro-climatic Monitoring and Information System (SAMIS) here

Contributing external partners:

- FAO-SAMIS – Strengthening Agro-climatic Monitoring and Information Systems Project of the Food and Agriculture Organization of the United Nations
- MONRE – Ministry of Natural Resources and Environment (Laos)
- DALaM – Department of Agricultural and Land Management of the Ministry of Agriculture and Forestry (Laos)
- NAFRI – National Agriculture and Forestry Research Institute of the Ministry of Agriculture and Forestry (Laos)

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

Significant technical support was provided to Strengthening Agro-climatic Monitoring and Information System (SAMIS) to develop the agro-climatic information that goes into the Laos the Climate Services for Agriculture (LACSA) system and is disseminated at scale across five provinces in Lao PDR. The system is made possible through the collaboration of SAMIS and The Alliance (through the DeRISK SEA Project) to deliver nationwide seasonal and weekly agro-climatic advisories [3] with emphasis on last-mile users of climate information [4]. The critical step towards developing tailored agro-advisories for specific crops is the drafting of the crop decision trees (CDTs) based on the different seasonal climate scenarios (normal, wetter, and drier). CDTs are an important systematic tool for the development of climate risk responses based on sub-seasonal and seasonal forecasts. CDTs are unique in that they combine the need for a harmonized standardized model at the national level with the ability to tailor responses to the local level (9).

ELABORATION OF OUTCOME/IMPACT STATEMENT

The Alliance invested in providing technical support to the Strengthening Agro-climatic Monitoring and Information System (SAMIS) project in Lao PDR to co-develop tailored agro-climatic recommendations based on weather forecasts. These advisories were integrated into the Laos Climate Services for Agriculture (LaCSA) system [1, 2]. There are two main beneficiaries of (LaCSA): 1) boundary organizations represented by national-, provincial- and district-level agricultural and forestry offices; and 2) farmers, especially smallholders. LaCSA enables boundary organizations to effectively disseminate tailored agricultural recommendations through seamless access to an automated system that combines agricultural and climate data. The platform has unlocked barriers that had previously limited the translation of useful information into actions. SAMIS and DeRISK SE Asia projects co-developed: 1) decision trees that provide agricultural recommendations based on seasonal forecasts, and 2) district and provincial level crop calendars and climate risk assessments to deliver timely agricultural advisories at a finer scale, capturing the inherent spatial and temporal variability of crop management and climate-related hazards [3]. This information was critical for the operationalization of the LaCSA system. The system increased the capacities of Provincial Agriculture and Forestry Offices (PAFO) and Department of Agriculture and Forestry Offices (DAFOs) to provide up-to-date and relevant advisories to the agricultural sector, particularly the farming communities through seamless access to dynamic climate and agricultural information.[4] LaCSA includes modules that release information on varieties to plant, when to plant, water management strategies, fertilizer applications, pest and disease management based on climate smart practices and seasonal forecasts, and climate risk and suitable response strategies based on historical information and weather forecast.[5] SAMIS co-developed protocols for delivering seamless supply of climate information and agro-advisories from LaCSA to the last mile users. Many methods of providing this information were explored based on farmers' preferences. Data dissemination tools included: advertising through village loudspeakers (by village officials, training program by Laotian National Radio); radio broadcast aired by Lao National Radio), provision through farmer field schools; school leaflets aimed at students bringing in the information to their parents, ICT tools via LaCSA applications and the official Facebook page of the Department of Meteorology and Hydrology [6]. Based on a 2022 survey, average crop yield and average gross income increased (17% and 33% respectively) after adjusting farming practices, based on information from LaCSA. Production costs also increased (8%) since there was more use of pesticides and fertilizer. However, there are drastic decreases in losses (-77.4%) due to the impacts of pests [8].

PART 2: Mapping to Alliance strategy and structure

KEY CONTRIBUTORS

Lever 3 - Climate Action

SDG TARGETS   13 CLIMATE ACTION

- **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 n all countries

REFERENCES

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4. FAO, 2021. Weather dependent climate smart recommendations. Accessible online
5. FAO, 2021. How to get climate services to farmers. Accessible online
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9. Kim, K.H.; Barlis, A.; Palao, K, Mienmany, B.; Imbach, P.; Swaans C. (2022). The development of crop decision trees for climate risk management

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The Alliance of Bioversity International and the International Center for Tropical Agriculture (CIAT) delivers research-based solutions that harness agricultural biodiversity and sustainably transform food systems to improve people's lives. Alliance solutions address the global crises of malnutrition, climate change, biodiversity loss, and environmental degradation.

The Alliance is part of CGIAR, a global research partnership for a food-secure future.

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