



Ecological intensification of agriculture through participatory landscape management in Laos (EFICAS)

The agricultural production system has evolved over the years, marked by a rapid integration into the market economy, which has increased dependency on external factors such as input prices, trader contracts and economic regulations. Many villages have adopted new farming systems with shorter fallow periods and hybrid crops varieties. These new practices have disrupted the nutrient balance in the slash-and-burn cultivation systems, leading to the gradual degradation of land.

General presentation of the project



General objective

To promote and document the intensification of environmentally friendly and climate-resilient agriculture in Laos. This is achieved through the participatory development and scaling-up of agroecological systems. The project forms part of the Global Climate Change Alliance (GCCA) programme.



Expected results

- R1. Local, provincial and national institutions and capacities are strengthened through the design and implementation of climate-responsive development plans.
- R2. Pilot field activities are implemented to improve agricultural practices, sustainable natural resource management and livelihoods adapted to the environment in targeted areas. These activities help strengthen resilience to climate change.
- R3. Insights gained from climate-related field activities influence policy development and are communicated to decision-makers in the relevant sectors.



Specific objective

- To strengthen the institutional, policy, and regulatory framework related to climate change.
- To pilot sustainable land use approaches, climate-resilient practices, and locally adapted agricultural systems to inform policy development and improve the livelihoods of communities, as well as their resilience to climate change.



Intervention strategy

The project focuses on research, knowledge generation and experience sharing, based on the following approaches:

- **The landscape approach**, which contributes to climate change mitigation and adaptation by emphasising adaptive management, stakeholder participation and multi-objective planning.
- **Ecosystem services**, encompassing supply services (e.g. timber and food), regulating services (e.g. flood control and water quality), cultural services (e.g. recreational and spiritual activities), and supporting services (e.g. photosynthesis).
- **Conservation agriculture**, which promotes minimal soil disturbance, the maintenance of permanent organic cover and the establishment of crop rotations.



Partners

The Ministry of agriculture and forestry¹, its district office² and CIRAD.



Timescale

2014 to 2018.

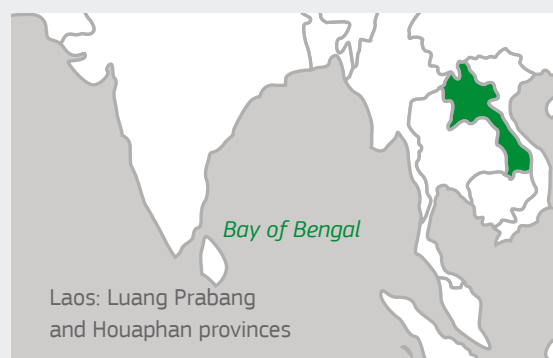


Budget

EUR 2.234 million, financed by the European Union and the French Development Agency.



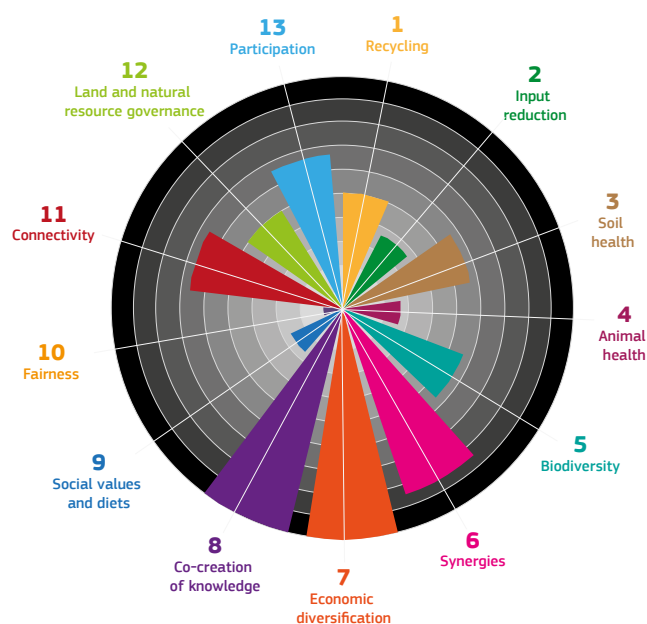
Intervention area



¹ The Department of Land Management of the Ministry of Agriculture and Forestry (DALAM)

² The District Office of Agriculture and Forestry of the Ministry of Agriculture and Forestry (DAFO)

Agroecological classification of the project according to the 13 principles of the HLPE



1 Recycling

The project partially supports the principle of recycling organic matter to amend soils. The initiatives supported in this area include the production and use of compost for market gardening, the reuse of animal waste by reducing animal roaming, through the installation of live or dead hedges, the planting off-season legumes cover and the protection of conservation forests to prevent the expansion of agricultural plots into forest areas. However, the recycling of wastewater and biomass for energy purposes is not addressed.

2 Input reduction

The project makes limited commitments to reducing external inputs, as the use of synthetic products and fossil fuels was already low in the mountainous target areas prior to the intervention, and irrigation infrastructure was minimal. The few initiatives implemented around this principle include training in the production of biopesticides, biological pest control, testing brush cutters as an alternative to herbicides, the use of locally manufactured manual seeders, and the use of crop residues for mulching.

3 Soil health

The project supports the principle of soil health by contributing to the maintenance of a natural and biologically active soil structure. Initiatives undertaken in this area include the dissemination of soil conservation techniques, the use of compost, the promotion and implementation of associated systems such as grass strips and intercropping, the intensification of cover crops, support for crop rotation and legumes integration (soybean, peanut, bean with upland rice

/ legumes with lowland rice). The project also promotes the production and use of biopesticides, the introduction of new perennial herbaceous crops (cardamom) and woody species (e.g. orange, banana, and plum trees), as well as trials of pest traps. The project also facilitated the land registration of lowland rice fields to encourage farmers' commitment to sustainable soil fertility management.

4 Animal health

The project partially addresses animal health. Actions undertaken include the establishment and improvement of forage plots to enhance animal nutrition and thereby improve livestock health and productivity, capacity building for veterinarians, the implementation of vaccination programmes (highly appreciated by the villagers), and the introduction of motor pumps to facilitate livestock access to water. No specific actions in favour of pollinator species have been identified.

5 Biodiversity

The project supports the enhancement of biodiversity by introducing a wide variety of locally adapted fruit tree species to increase varietal diversity, as well as new plant species (e.g., cardamom, soybean, peas, beans) with a particular focus on nutrition. Moreover, aquatic resources such as fingerlings from local fish species are released into fish conservation areas



created for this purpose. Outside of these fish conservation zones, the project contributes to the protection of forest conservation areas. It supported the development of diversified village nurseries and promotes a landscape approach that values associated production systems, in respect of agroecosystems.

6 Synergies

The project fosters synergies among biological components at both farm and landscape levels. The practices supported are tailored to specific production systems, landscape zones, and community needs. These include integrated systems such as crop-livestock, fish-duck-rice, agroforestry, or a sustainable models of intensive rice cultivation. Such practices aim to optimise ecosystem services while enhancing production and supporting the adoption of diversified and innovative agroecological methods. In addition, participatory land use planning (PLUP) enables the identification of conservation areas, thereby helping to mitigate the impacts of climate change (e.g. reducing erosion, recharging groundwater, preserving biodiversity).

7 Economic diversification

The project fully integrates the principle of supporting economic diversity by promoting the diversification of agricultural production. For example, it encourages this diversification during the dry season in rice paddies by supporting the cultivation of vegetables, oats, and mung beans. It also seeks to facilitate access to market by establishing linkages between farmers and local markets, and by developing equitable contract farming models between farmers and traders.

8 Co-creation of knowledge

The project adopts an approach based on co-creation and knowledge sharing. It recognizes that the intensification of production has contributed to soil degradation and that the soil conservation techniques implemented in these areas over the past twenty years have been poorly adopted by the communities. The project therefore sought to deploy a strong participatory approach, inviting communities to formulate, at their village level, a Participatory Land Use Planning (PLUP) followed by a Community-based Agricultural Development Plan (CADP) ensuring the integration of innovative agroecological practices and market-related opportunities. The activities implemented are evaluated iteratively by the communities. This allows, beyond the updating of the CADP, a learning process based on the feedback of the community. These methods promote knowledge generation by and for producers. Furthermore, strengthening the capacities of local authorities and extension agents with producers regarding these agroecological approaches and practices is also a priority widely implemented by the project.

9 Social values and diets

The principle of social values and healthy, diversified and culturally appropriate diets is rarely mentioned in the project, although it is in line with the project's intentions. This is demonstrated through support for diversified production systems aligned with community preferences, thereby fully respecting local cultural practices. This guarantees community food security and market supply. However, the project does not support policy actions aimed at promoting adequate and culturally appropriate diets.



10 Fairness

The project does not directly address fairness and human values. It is not committed to combating gender inequalities, supporting rural youth or strengthening the organizational capacities of producers. Moreover, it is not involved in policies aimed at strengthening food autonomy or sovereignty.

11 Connectivity

The project supports the principle of connectivity by encouraging a circular and solidarity-based economy. It facilitates negotiations between producers, traders and local authorities, as well as the development of fair and contractual marketing models. The project also fosters linkages between local, provincial and international producers and markets, which contributes to the development of new market opportunities and supports local economic development.

12 Land and natural resource governance

The project is committed to supporting land and natural resource governance through the formulation of Participatory Land Use Plans (PLUP) and Community-based Agricultural Development Plans (CADP) in consultation with villagers. It seeks to make resource management mechanisms more accountable, effective, and transparent. Moreover, the project's participatory approach enables community consensus on the use of landscape areas, desired land use developments, and zones to be protected. On the other hand, the project does not support institutional reforms for sustainable resource management, nor does it engage in conflict resolution.

13 Participation

The project contributes to the development of national policies. Extensive efforts have been made to capitalise on and disseminate project results to decision-makers at both national and regional levels, with the aim of influencing policies in favour of a greater integration of agroecological approaches and practices developed within the framework of the project. This approach enables the generation of knowledge for producers and feeds into capitalisation and dissemination tools, such as policy briefs and national thematic workshops. The objective is to integrate agroecology into policy processes related to climate change by amplifying community feedback. Finally, it aims to share the project's outcomes with policymakers at national and regional levels, even if the term agroecology is not systematically used.

SUCCESS FACTORS/CHALLENGES

- + The adoption and scaling up of agroecological practices requires the full participation of communities in planning, innovation and evaluation processes. Within the framework of the project, landscape analysis, policy formulation, innovation experimentation, outcome evaluation and capitalisation were key elements of learning and ownership for scaling purposes.
- + The selection of project sites and timing is a critical factor to promote its adoption. These are defined based on the stage of intensification of agricultural practices and the degree of land degradation, in order to represent a wide diversity of agricultural, environmental, cultural and commercial contexts.
- + The project is complementary to other agroecology promotion initiatives, thereby contributing to multiple levels of transition. It builds upon and is complementary to other conservation agriculture projects such as the ACTAE project (2015-2019), which supports the emergence of a multi-stakeholder platform in the Mekong region in favour of agroecology and fosters the social and political transformation dimension of agroecology, an aspect which is insufficiently integrated into the EFICAS project.
- The transformation of production systems supported by the project is driven mainly by market demands and opportunities. The project takes little account of the analysis of food needs and practices, and little attention is paid to the integration of nutrition.

