EFICAS project

Landscape management and conservation agriculture development for **E**co-**F**riendly **I**ntensification and **C**limate-resilient **A**gricultural **S**ystems

The project at a glance

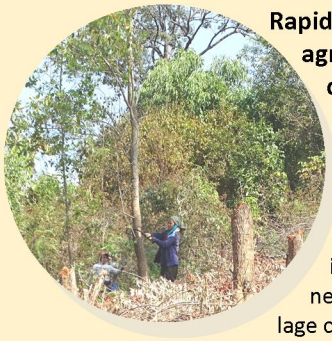
4 years (March 2014 - March 2018)

Co-funding between EU (Global Climate Change Alliance), AFD (Northern Uplands Development Program), CIRAD and DALaM (Department of Agricultural Land Management) MAF.

Co-design of agro-ecological alternatives for sustainable agricultural intensification in the mountainous provinces of northern Laos

Background

an agrarian transition in northern Laos characterized by:



Rapid changes in agricultural production systems in line with an increased access to markets (and an increased vulnerability of village communities to climatic and economic fluctuations.

Significant impacts on natural resources: reduced forest cover, degradation of agricultural land, **and on village communities**: overall poverty reduction but increased inequality and indebtedness.

Low adoption of agro-ecological innovations promoted by research and extension institutions (e.g. organic farming, conservation agriculture, agro-forestry, integrated farming, etc.).

Co-design and co-evaluation: the driving forces behind agro-ecological innovation

SCIENTIFIC CHALLENGES

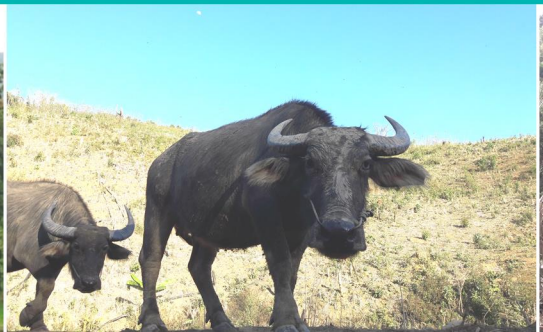
1. How can farmers be more involved in the innovation process?
2. How (co-) assess the performance and impact of alternative production systems?
3. What intervention mechanisms to support the adoption and widespread dissemination of innovative practices?

DEVELOPMENT CHALLENGES

Supporting the agro-ecological transition in the mountainous provinces of northern Laos

1. Make village communities of northern Laos more resilient to external shocks (climatic, economic)
2. Design and disseminate agricultural production systems that would be more eco-friendly
3. Make agroecology visible on the map / show that agroecology can be applied on a large scale

5 provinces of intervention in northern Laos
Phongsaly, Luang Prabang, Houaphan, Sayabouri, Xieng Khouang



Engaging the entire village community in the definition, implementation and evaluation of landscape-level innovations

Methods

Participatory diagnostic approach

Inventory and prioritization of problems encountered (agricultural and non-agriculture related), village history and demographic dynamics, identification of major obstacles to local development,

Analysis of natural resources management methods, characterization of landscape units and analysis of land use dynamics (remote sensing tools, maps and 3D models),

Description and classification of agricultural production systems according to their technical and economic performance, assessment of the margins of maneuver, identification of technical and organizational levers to improve systems performance.

Co-design of technical and organizational alternatives

Discussions on existing innovations (endogenous / exogenous) and / or possible ones,

Field visits, selection of pilot sites and families,

Co-design of a territorial project through the exploration of development scenarios, definitions of collective rules and indicators for the implementation of innovations.

Co-financing and technical support for the implementation of the defined territorial project.

Monitoring and evaluation

Definition of local indicators to assess the performance of production systems and their resilience to climate change and market fluctuations,

Integration of indicators that make sense for local populations into a baseline that serves as a basis for a participatory approach to monitoring and evaluation of socio-economic and environmental dynamics.

Involvement of farmers in the monitoring of the various indicators jointly defined to evaluate the impact of the territorial project and agroecological innovation on the agrarian dynamics and the resilience of the village communities.

Lesson 1: Place in contexts favorable to territorial planning

Lesson 2: Anticipate problems and negotiate solutions

Main lessons

In the initial phase of demonstration of the method, choose preferentially limited village communities (ie less than 80 families) with a strong social link, ie populations that have not been the object of recent resettlement or mergers, mono ethnic preferably without major known internal conflicts, etc. in order:

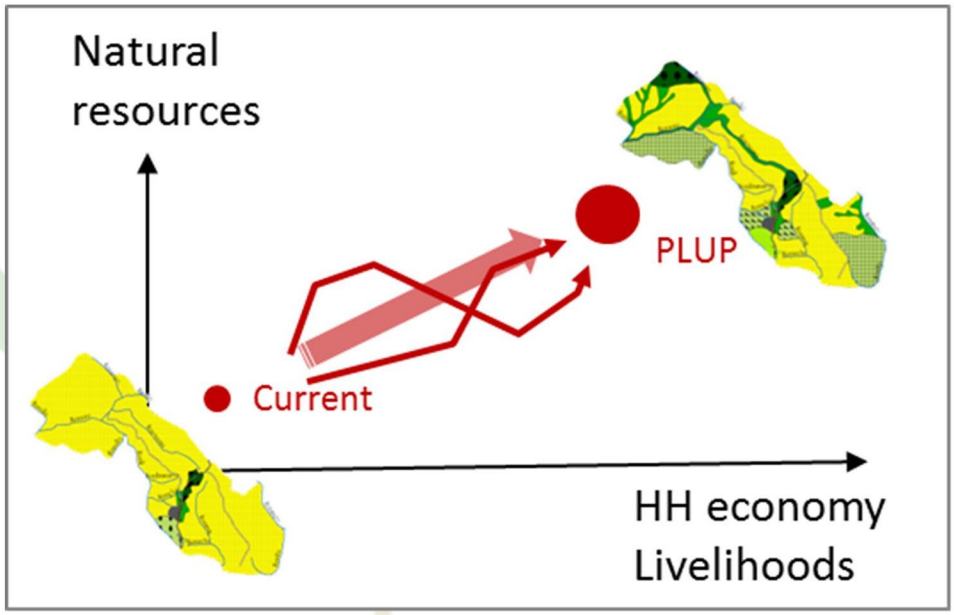
- to facilitate the participation and the adhesion of the greatest number to the alternatives discussed and validated collectively,
- To avoid being manipulated by villagers to resolve their internal conflicts rather than jointly building a common project

The adoption and dissemination of agro-ecological practices is subject to organizational constraints and / or individual development strategies which are already well known (we give two examples below from the Laotian context but certainly generalizable in other areas in Southeast Asia).

These problems must be anticipated / discussed and the solutions (specific activities to be implemented, control procedures, penalties and interest raising mechanisms) negotiated with the whole village community before the implementation of the activities.

Lesson 3:
An integrated approach to agro-ecological practices

Lesson 4:
Involve all development stakeholders in the innovation process from the outset



Problem 1. Animal free roaming

Animal free roaming is a major constraint to the adoption of agroecological practices, e.g. need to protect cover plants and crop residues in conservation agriculture.

The regulation of animal roaming and the creation of livestock areas are necessary conditions for the ecological intensification of cropping systems in sloping areas.

Problem 2. Expansion of cultivated areas

The gain in productivity resulting from the adoption of technical innovations such as mechanization or the use of herbicides are generally reinvested into an expansion of cultivated areas, to the detriment of forests.

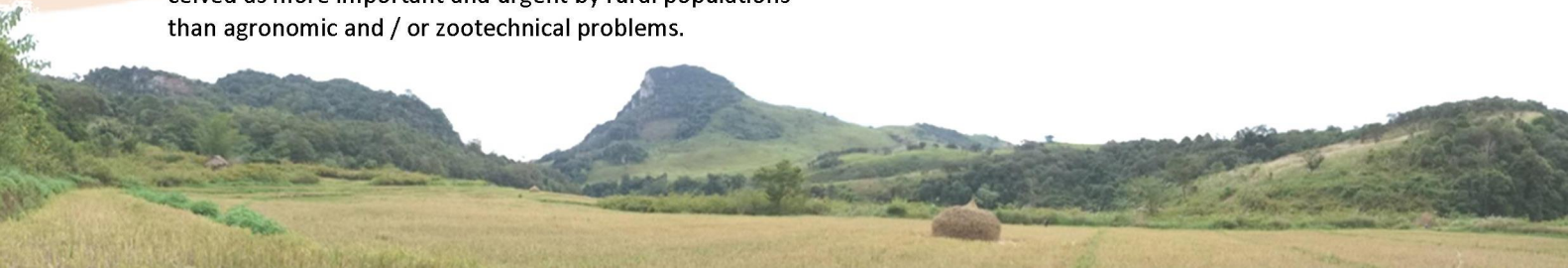
The land use plans that define the agricultural and forest areas of the villages must be negotiated upstream and respected by the farmers.

The co-designing of agro-ecological practices implies an integrated approach. Any project concerned with the improvement of cropping systems should also focus on improving livestock systems, and on how forest resources are used and managed. A territorial approach is therefore an essential support for co-design because it integrates spatial dynamics and interactions / flows between all the components of the agrarian system.

Agro-ecological transition is rarely the priority of village communities. Improved access to water, electricity, health, education and / or safer agricultural outlets are often perceived as more important and urgent by rural populations than agronomic and / or zootechnical problems.

Whatever the project's R&D theme, the project must take account of local priorities and must play a facilitating role in finding appropriate solutions. This is a necessary condition for engaging village communities in planning dynamics that really make sense because they respond to the issues as they are perceived.

The search for common intervention with other projects, for complementarities both thematic (agriculture, forestry, nutrition, etc.) and geographical (transfer of scale) are important elements of the long-term support of territorial projects whose impact can only be noticeable / measurable after several years.



MAIN PROJECT ACHIEVEMENTS

Participatory planning and management of village territories

Increase the involvement of village communities in sustainable land management

- Revision of Participatory Land Use Plans (PLUPs) or negotiation of first PLUPs,
- Extension of these PLUPs into Community Agricultural Development Plans (CADPs), setting medium-term objectives and indicators of achievement (2017) and sharing of responsibilities between actors,
- Annual review and adaptation of CADP plans

Capacity Building for Village Land Management Committees (VLMC)

Supporting the ecological intensification of agriculture

- Empowerment of the members of the committee through the establishment of a budget and support for the monitoring and evaluation of field activities,
- Exploration with VLMC members of scenarios aimed at reducing vulnerability to external shocks (e.g. climate change, price fluctuations)

Re-organization of crop-livestock interactions

To spatially dissociate the cropping activities from the livestock activities in order to better re-associated them thereafter

- Landscape units identification and protection: financial support for the permanent fencing of crop and livestock areas as defined in the PLUPs / CADPs (barbed wire, establishment and maintenance of live fences),
- Intensification of animal feeding systems: support for the establishment and management of improved pasture,
- Support for the improvement of animal health: awareness raising and training of village veterinary workers, establishment of revolving fund for animal health, and special funds to favor the access to livestock activities by the poorest families

Development and promotion of multi-cropping systems incorporating legumes

Maintain soil fertility while improving the nutritional status of populations

- Promotion of relay cropping systems (e.g. with pigeon pea, red bean) or intercropping systems (e.g. with soybean, groundnut)
- Support for the valorization of these secondary crops: economic valorization (stick lac production on pigeon pea stem), sensitization for the integration of these legumes into traditional food systems,
- Training for a better conservation of legume seeds

Expansion and intensification of lowland paddy rice fields

Lowland paddy fields as farmers' priority investment

- Protection of rice terraces against floods and river erosion (bank reinforcement)
- Improved access to small-scale irrigation to increase the number of growing cycles (i.e. rice or spring corn and winter vegetables)
- Promotion of alternative cultivation techniques: SRI, compost, varietal improvement (i.e. pure seed, testing of varietal rice collections)

Sustainable management of agricultural land

- Protection of riparian forests through the promotion of cardamom-based agroforestry systems,
- Facilitation of contractual commitments between private companies and farmer groups for coffee and soybean production,
- Land security: Lowland paddy land registration to facilitate farmers' engagement into soil fertility sustainable management.

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For more information : www.eficas-laos.net