CENTRE DE COOPÉRATION INTERNATIONALE DE RECHERCHE AGRONOMIQUE POUR LE DÉVELOPPEMENT

NORTHERN UPLANDS DEVELOPMENT PROGRAMME

DEPARTMENT OF AGRICULTURAL LAND MANAGEMENT, MINISTRY OF AGRICULTURE AND FORESTRY

THE EUROPEAN UNION
LAO PDR GLOBAL CLIMATE CHANGE ALLIANCE PROGRAMME

LANDSCAPE MANAGEMENT AND CONSERVATION AGRICULTURE DEVELOPMENT FOR ECO-FRIENDLY INTENSIFICATION AND CLIMATE RESILIENT AGRICULTURAL SYSTEMS

COMMUNITY-BASED AGRICULTURAL DEVELOPMENT PLANS (CADPS) 2015

LUANG PRABANG PROVINCE

EFICAS project

March 2015

FOREWORD

Community-based Agricultural Development Plans (CADPs) were conducted in the two target districts (Pakseng and Viengkham) and the four target villages (Hadxam, Houayvat, Poutong, and Samsoum) from February to March 2015.

CADPs are the results of a 4-day full-time participatory process (presented below) involving the whole village community and including the collection of various data (e.g; men and women problem census, village population trends, diversity and profitability of agricultural and non-agricultural activities etc.).

The content of the present document only refers to the CADP-related activities planned for 2015 and to the related budgets. It also includes a short description of village and village landscape units main characteristics to facilitate the understanding of the activities presented.

Activities planned in Muang Mouay Technical Service Center are also presented as complementary activities to those planned in target villages.

Community-based Agricultural Development Plan 4-day steps

Day 1. Opening village meeting

- Introduction of the project team
- Presentation of the members of the Village Land Management Committee (VLMC)
- Objectives of the meeting and activities that will take place in the village

Day 1-2. Data collection

- Socio-economic data collection (rapid survey of all village households)
- 4 Focus group discussions
  - Problem census (men / women)
  - Wood, wildlife and NTFP
  - Village population trends
  - Land use systems (crop – livestock): input-output parameters
- Land management and regulations (3D model, maps)

Day 3-4. Activity planning

- Discussion on innovative practices
- Land management rules, indicators
- Field visits, site selection, volunteer households

Day 4. Closing village meeting

Remark: Tentative budget and budget disbursement modalities were finalized and validated later on with the Village Land Development Committee

CONTENT

EFICAS Project
Community-based Agricultural Development Plan (CADP) 2015
Ban Hadsam , Pakseng district, Luang Prabang Province

Content

1. VILLAGE MAIN CHARACTERISTICS

- GPS coordinates: N 20.09’905” E 102.35’619” (Fig. 1 and 2)
- Location: 352 m asl, along the river and the road
- Accessibility: good, 9 km far from Pakseng, 1h30 from Luang Prabang
- Size (2014): 74 households, 400 inhabitants, 1060 ha
- Ethnic group: Khmu (69 HH), Laoloum (5 HH)
- External supports:
- Past supports from World vision for infrastructure improvement (school, water supply), and from ADB livestock project (credit and animal access, village meeting room)
- PLUPs implemented in 2012 with the support from NUDP-GiZ and MONrE; recent changes (2013) in Land use plan introduced by district governor with the plan to develop an area solely dedicated to livestock raising in the southern part of the village;
- Livestock technical service center settled in the village since 2013 with livestock activities supported by NUDP
- Several on-going partnerships with the private sector for rubber (Yunnan Cie, China, concession + contract farming in the village), teak (Lao Cie from Luang Prabang), Makkao (Lao Cie from LPG), and more recently on Sacha Inchi (Lao Cie from LPG)
- Remarks:
- Migration fluxes: village that experienced many migrations (in and out) since its creation with impacts on agricultural landscapes (mosaic of individual plots) and village cohesion (limited, mainly individual agricultural development strategies)
- Land property: an important part of village agricultural land now belongs to villagers/investors that are not from the village.

Fig 1. Hadsam location in Pakseng district (PLUP, 2012)

Fig 2. Hadsam village bounderies

2. LANDSCAPE UNITS / LANDSCAPE USE

4 main landscape units identified (Fig. 3):

- **Permanent cropping area** (about 250ha, mainly belonging to village outsiders and private Cies)
    - **Ruber** plantation (220 ha, 200 ha of concession + 20 ha of village plantation now abandoned following conflicts with Cie regarding the location and quality of plots attributed)
    - **Teak** plantation (20 ha along road)
    - **Fruit trees** area (area not known, about 5-10 ha, village outsiders; bananas, orange, litchi, and mangos)
    - **Sacha inchi** area (new trend started in 2014 and 2015, 2-3ha, 5 HH)
- **Rotational cropping area** (about 90 ha mainly upland rice – 50 ha-, maize – 30 ha, and in a lesser extent job's tear and sesame, all HH; rotating on 3-5 years)
- **Lowland paddy rice area** (3.5 ha, 4 HH; 11 ha new paddy fields built in 2013 by 13 HH along Houay xam river but flooded and almost totally destroyed in 2014)
- **New livestock area**

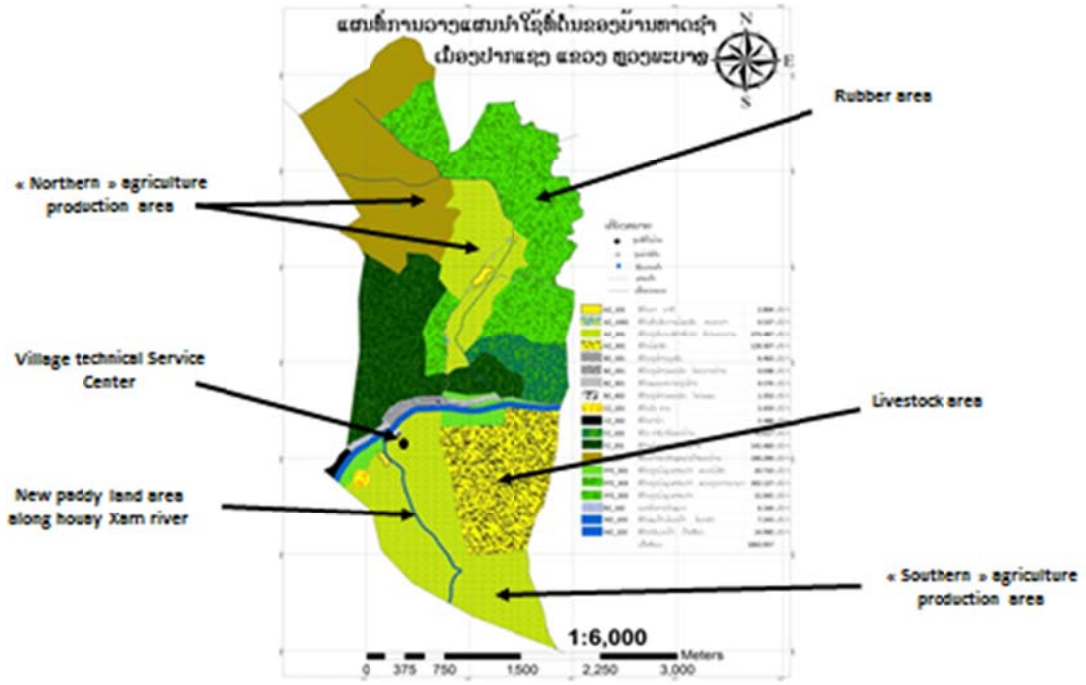


Fig 3. Hadsam main landscape units location

3. ACTIVITY PLANNING 2015

Activities planned for 2015 are related to livestock (cattle, goats, and pigs) and agricultural (animal roaming control, soil fertility improvement) production system improvement.

1. Livestock

1.1 Water supply connection at the village TSC

Referring to village priority for 2015 (water and electricity at TSC).
Water supply will facilitate the living of the staffs (2 staffs from DAFO + 3 villagers) based permanently there as well as the raising of cattle and goats (goat stalls established at the TSC).
Water source located 200m from TSC; support from project: concrete (water collector, drinking bowls) and pipe supply.
After discussions with farmers: support from district to be first solicited (and budget to be reallocated on improved pasture implementation, see 1.2)

1.2 Sowing and fencing of the 13 pilot improved forage plots

Referring to the plan for 2015 to establish 13 ha of improved forage for the short-term fattening of cattle (with support from NUDP on forage seeds and barbwire).
Specific support from the project:
- Initially: support the permanent/living fencing of the 13 plots by providing financial incentives to plant and maintain living fence during the first 2 years.
Planting material already identified by farmers: Mak niew (Jatropha curcas), Mak linh mai, mai kok, mai xakham, mai dokho.
Financial incentive of 300 LAK/ living seedling given to farmers that are investing in living fence establishment and maintenance. Incentive provided during the 2 first years of establishment and based on an on-field evaluation of living seedlings at the end of each rainy season (Nov 2015 and Nov 2016). Financial support limited to 120,000 LAK/ha/year.
-Revised late March: funding from NUDP being uncertain, farmers requested support from the project for the fencing (barber wire) and sowing of these plots.

1.3. Partial vaccination of marked goats

Referring to:
- the importance of goat production in the village (33 households, about 180 animals)
- the importance of disease outbreak on goats (20 to 30 deaths every year)
-the non systematic vaccination of goats (performed in 2013 with the support of ADB livestock project, not performed in 2014) that indicates that farmers are either only relying on external supports or that they do not perceive the value of vaccination

Proposed activity and support (in case of no other vaccination plan from Province/ADB livestock project; to be checked by the technician):
- vaccination in 2015 of not more than 30% of animals (e.g. support to max 60 animals)
- Marking of the vaccinated animals (e.g. sew thread through ears)
- Monitoring of 1) vaccination impact on animal mortality, 2) Farmers perception related to goat vaccination

1.4. Genetic diversification of cassava planting material for pig production

Referring to:
- the importance of pig production in the village (40 households, about 160 animals)
- the limited genetic diversity of cassava planting material (one single local variety)

Proposed activity and support: Cassava collection (8 to 10 cultivars) to be established and evaluated with 1 pilot HH.

2. Agriculture

2.1 Permanent fencing of the southern village agricultural land area

Referring to:
- the maintenance of agricultural activity in this area (about 30 HH),
- the increased roaming pressure from inside (new plan of village dedicated livestock area) and outside the village (animal roaming from Hat pa Ot and Nong Fadet villages),
- the impossible intensification of crop and livestock production system without a better management and control of livestock roaming,
- the identification of 4 main animal passing points (2 at village boundaries, 2 within the agricultural area, see map below)

Proposed activity and support: support the increased control of animal roaming through:
- financial support to purchase barbwire for permanent fencing at animal passing points (about 750m of linear fence, to be confirmed by farmers+ technicians; max 80 rolls of barbwire)
- financial support to plant and maintain living fence (similar to 1.2) on the passing points (about 750m)

2.2 Pigeon pea-based improved fallow

Referring to:
- the limited access to agricultural land (limited agricultural land area, out-villagers property, important area of perennial crops etc. leading to annual crop rotation on 2-3 years in the northern part of the village) and the related decrease in land productivity,
- the value of legume-based improved fallow for soil fertility improvement,
- the existence of successful local experiences related to pigeon pea cultivation and stick lack production within (e.g. M. Bounma, local champion) and close to the village (5 villages in Pakseng district involved in stick lak production with Agroforex Cie).

Proposed activity and support: support the increased use of short-term pigeon pea-based improved fallow:
- financial support to 6 pilot households (about 6 ha) in 2015: pigeon pea seeds and stick lack inoculant
- Support to stik lak sales: discussion with agroforex Cie and district authorities

4. TENTATIVE BUDGET

Project support of about 27 millions LAK (3,300 USD) for 2015, not including training support (details next page).

Activity	Unit	Cost	Description
Water supply connection at the village TSC			
About 700 m hose			1 million kip/ 100m
Additional supplies			
Permanent fencing and sowing of the 13 pilot improved forage plots (13 ha)			
Barberwire for fence 4 lines	1700 m	8 160 000	1 roll = 100m = 25m fence 4 lines
Nails	20 kg	300 000	5 kg/ha
seed		9 750 000	1ha=750000;
Living fence, local cuttings	plant	900 000	1 plant/ meter, support for maintenance
Partial vaccination of marked goats			
Vaccine		250 000	250.000 LAK to vaccinate 50 heads
Ear marks for vaccinated animals	50 heads = 1/3	1 250 000	25.000 kip x 50 heads
Genetic diversification of cassava planting material for pig production			
1 HH to grow cassava	nb stems	1 000 000	Area? + stylo intercropping
Permanent fencing of the southern village agricultural land area			
Barberwire for fence 3 lines	750 m	2 700 000	1 roll = 100m , fence 3 lines
living fence	750 m	450 000	
Pigeon pea-based improved fallow			
6 HH grow pigeon pea for 6ha	seeds	480 000	4 kg x 6 ha x 20.000 kip
strict lack	inoculum	1 500 000	5 kg x 6 ha x 50.000 kip/kg
Total		**26 740 000**	

EFICAS Project
Community-based Agricultural Development Plan (CADP) 2015
Ban Houyvat , Pakseng district, Luang Prabang Province

Content

1. VILLAGE MAIN CHARACTERISTICS

- GPS coordinates: N 20.2041510399, E 102.7879069839 (Fig. 1 and 2)
- Location: 1140 m asl, along the road
- Accessibility: moderate, dirt road, 21 km far from Pakseng, 2h from Luang Prabang
- Size (2014): 44 households, 244 inhabitants, about 2,000 ha
- Ethnic group: Khmu
- External supports:
- Past supports from World vision (village fund, school, rice bank), PRF (village meeting room), Nayobai (credit), and elder Support Project (small livestock)
- 2 PLUPs implemented in 2010 (DAFO) and 2011 (DoNRE) with 2 different village area (1289 vs 2087 ha); PLUP revised in 2015 with support from NUDP-EFICAS project
- Past farming contract on Makkao (Lao Cie from LPG, but Cie disappeared), rubber cultivation promoted by Chinese Cie (600 trees planted in 2005 but all died); current contract farming with Agroforex Cie on stick lak production
- Village also called “the stick lak” village since all households produce stick lak since 2012

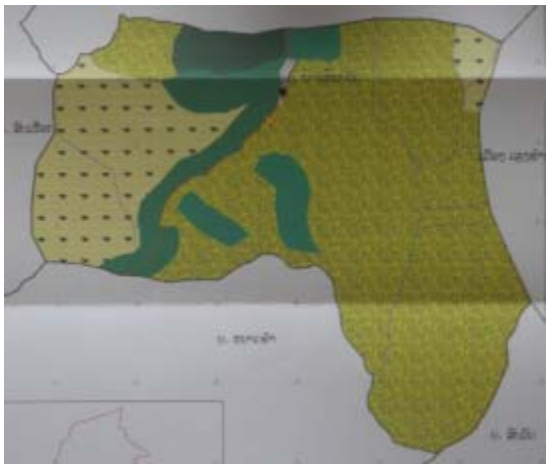


Fig 1. Houyvat location in Pakseng district (PLUP, 2011)

Fig 2. Houyvat village bounderies

2. LANDSCAPE UNITS / LANDSCAPE USE

No lowland area.
Only upland crops with upland rice as main crop; pigeon pea associated with upland rice for stick lak production; local maize and cassava on limited areas.
Rotational cultivation systems on 7-8 years in 8 different production areas (Fig. 3):

- Houay laman – Houay bong areas (30 HH)
- Phou mokhouang area
- Houay dong area
- Phou lom area
- Yot Houay deng
- Tin Phou Ban Rua Phet
- Houay pano area
- Area close to the production forest

Fig 3. Houyvat main landscape units location

3. ACTIVITY PLANNING 2015

It is difficult to create cultivation blocks with permanent fences as plots are scattered and at different stages of the rotation in a given block. Need to register all plots of each household in relation with land use plans to gradually create improved fallow blocks and large livestock areas that can be managed collectively.

Ban Phounovan is a Hmong village located close to Had houay that has developed a 67 ha grass area managed collectively. Would be a good training/demonstration site for Houayvat villagers. See also livestock villages in **Nonghet district** of Xiengkhouang province.

Houay laman – Houay bong areas (30 HH)

Production area 2015. Villagers would make living fences with jatropha, pigeon pea and acacia. Maize + pigeon pea at the bottom of the hill. After maize is harvested pigeon pea remains. Seed are collected to feed the pigs. Sticklack production in the upper part of the landscape.

Phou mokhouang area

Job's tear + pigeon pea. After harvest of job's tear, improved fallow system based on pigeon pea.

Houay dong area

Sanaam with small livestock: goats + pigs managed individually. Cassava + stylo grown as demonstration plots. Vegetable plots along the stream using manure and compost from small livestock

Phou lom area

Grazing area for big livestock. Individual plots with fences : ruzi, nepia, stylo.

Yot Houay deng

Production forest with cardamom from Phongsaly tested along the streams to protect forest cover.

Tin Phou Ban Rua Phet

Improved fallow system based on pigeon pea + job's tear. Living fences around the swidden area

Houay pano area

Small livestock area – grass production

Area close to the production forest

Agroforestry system with fruit trees

Activities ranking priority:

1. Setting-up and management of livestock areas for large livestock

- Living fences
- Grazing areas
- Systematic vaccinations
- Water reservoir for livestock

2. Improved cropping systems in the uplands

- Improved fallow system with pigeon pea in job's tear (2nd year after rice)
- Maize with pigeon pea high density for improved fallow + low density for sticklack production
- Time saving equipments: hand jab seeder – 5 units

3. Small livestock management in sanaams

- Cassava + stylo + pigeon pea -> pigs
- Guinee grass + stylo + acacia from living fences -> goats

4. Improved vegetable production

- Provision of high quality seeds
- Training at Had Houay TSC

5. Riparian forest protection: cardamom plantation along the river banks

6. Agroforestry systems combining fruit trees (prunus + peach) with coffee or tea

7. Market analysis on sticklack production (collaboration with Agroforex company)

4. TENTATIVE BUDGET

Project support of about 27 millions LAK (3,300 USD) for 2015, not including training support (details below).

Activity	Project support (LAK)	Budget	Description
1. Setting-up and management of livestock areas for large livestock			
Barbed wire		10 800 000	
Living fences	3000 m	1 800 000	300 kip per surviving tree
Forage seeds		7 650 000	9 ha
Vaccination: fridge + revolving fund		2 000 000	
2. Improved cropping systems in the uplands			
Pigeon pea seeds		150 000	Improved fallow + low density for sticklack production
Hand jab seeders		850 000	5 units
3. Improved cropping systems in the uplands			
Forage grass and legumes		850 000	Pigs and goats
4. Improved cropping systems in the uplands			
Vegetable seeds		200 000	
5. Riparian forest protection			
Cardamom cuttings	0,5 ha	200 000	
6. Agroforestry systems			
Fruit trees (prunus + peach)		2 400 000	3HH would grow about 100 seedling each
7. Market analysis			
Stick lak		pm	
Total		**26 900 000**	

EFICAS Project
Community-based Agricultural Development Plan (CADP) 2015
Ban Phoutong, Viengkham district, Louang prabang Province

Content

1. VILLAGE MAIN CHARACTERISTICS

- GPS coordinates: 20°13'39.44"N – 102°49'27.47"E
- Location: along the road from Samsoom to Pakseng, 1045 m asl.
- Accessibility: easily accessible, along the main road but dust road difficult to access during the rainy season. Two new roads (3 + 4 km long) were recently constructed by the maize traders under a 3-year contract with the villagers to reach the production areas.
- Size: 71 families in 2015 with a population of 429 (195 female), 16 poor households. Some family lack rice about 3 to 6 months.

Economic development and external supports

Village development plan done by GIZ in 2014 (see VDP document)

Sell very little crop products, mainly used for family consumption. Mainly sell livestock. The village is included in the district strategy to improve large livestock production.

Problems with companies that brought jatropha seed, makkao seeds but none comes to buy the product. Villagers are very dependent on market opportunities.

Since 2015, roads have been opened by the maize company to reach production areas. Farmers have to grow hybrid maize to reimburse their debts.

Save the Children NGO has recently invested in building a health station in the village that will provide health care to the whole Phousanaam kumban. The station was previously located in Phousanaam village but lacked water and was therefore relocated to Phoutong. The doctor will move to Phoutong once the health station will be completed, by mid of this year. In addition, Save the Children will support the construction of an additional water adduction system with a new reservoir and 7 more water taps in the village.

Fig 1. Phoutong location in VGK district (MoNRE, 2011)

Fig 2. Phoutong landscape (Google earth, 2014)

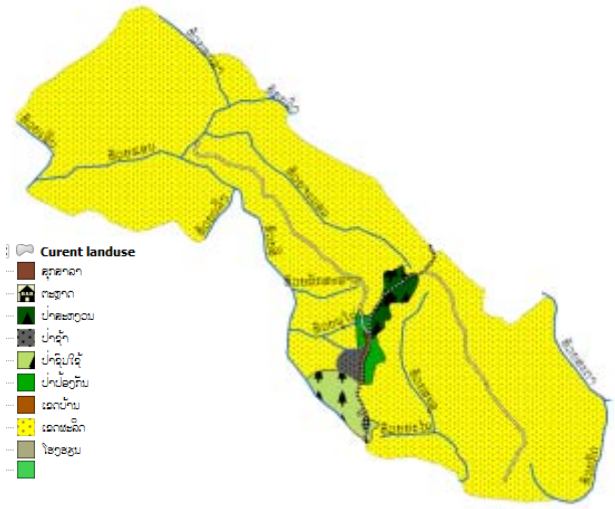
2. LANDSCAPE UNITS / LANDSCAPE USE

Classification of land use systems
The main land use types in the village are:

Current land use (Fig. 3):

Land use planning (Fig. 4):

- Conservation forest
- Protection forest
- Production forest
- Sacred forest
- Agricultural areas (shifting cultivation)
- Livestock areas for small (goat, pig) and big livestock (cattle, buffalo)
- Home gardening



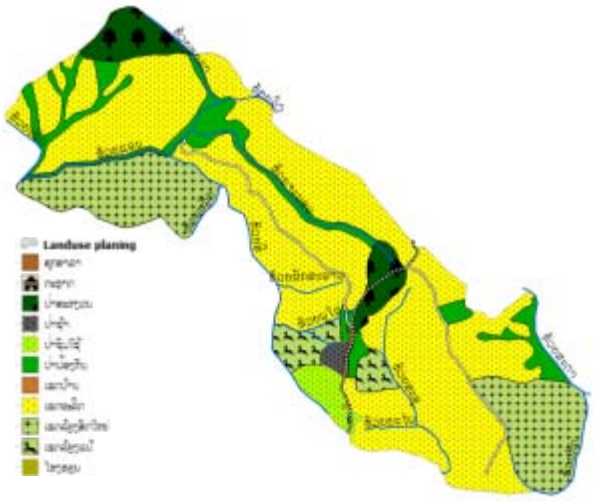


Fig 3. Current land use

Fig 4. Land use planning

3. ACTIVITY PLANNING 2015

Activities planned for 2015 are related to livestock (cattle and goats), maize-based systems improvement, and crop diversification.

Note that all proposed innovations require control of roaming animals through collective management and permanent fences.
The first activity will thus consist in issuing livestock management regulations and gradually replacing the temporary fences built every year around the fields by permanent living fences with barbed wire and tree seedlings.

1. Improvement of livestock management

- Improved pasture: mixed *stylosanthes guianensis* and *brachiaria ruziziensis* e.g. broadcast 4kg/ha stylo right after last weeding preferably after 60das
- Animal welfare: trained village veterinarian and pharmacy
- Water harvest for animal use along the streams located close to the pasture areas

2. Sustainable maize production through association and rotation with legume crops

- Improved fallow system with vigna or pigeon pea (+ sticklack)
  Maize + Rice bean sown 1-1.5 month before harvesting the maize, preferably 1 month before the rain stop
  Maize + Pigeon pea sown after 1st weeding 15-20das with density 35,000-40,000 plant/ha
  Maize + Stylo: use sticky flour like cassava flour to well mix stylo seed and maize, so planting at the same ease the manual weeding
- Crop association with vigna and pigeon pea
- Use of hand jab seeder to lower labor requirement

3. Crop diversification

- Introduction of legume crops such as soybean, peanut, stylosanthes in crop rotations/association including with cassava
- Cardamom planted along streams to prevent degradation of riparian forests only if pigs are not left roaming anymore.
- Improve vegetable production techniques, first home gardening then exploring vegetables market for possible expansion of production areas

4. TENTATIVE BUDGET

Project support of about 27 millions LAK (3,400 USD) for 2015, not including training support (details below).

Activity	Project support (LAK)	Description
1.Improve production Area		
1.1 Pigon pea mixe upland rice		
Support seed pigon pea	1,200,000	4kg/ha* 15ha, 1kg=20000
Stick lack	2,500,000	50kg*50000
Training on improve fallow	pm	
1.2.Hand-jab seeders	2,400,000	12 hand jab seeders from Saya
2. Improved Livestock systems		
Training on forage management and vaccination	pm	
2.1. Big livestock		
Forage seeds cattle	4,200,000	3.5 ha
Support for fencing	900,000	living fence for 3.5 ha /300kip/seed
Support for fencing	1,800,000	15 rolls barber wire
Making tank	2,300,000	5*1*0.7m
2.2.Goat area		
Forage seeds goat	3,900,000	2.6 ha
Plastic net for fence in goat raising area	2,400,000	1kg=30m
Living fence	800,000	1 tree =300 kip
2.3. support equipment vaccination	4,800,000	2 sets
TOTAL (LAK)	**27,200,000**	

EFICAS Project
Community-based Agricultural Development Plan (CADP) 2015
Ban Samsoum, Viengkham district, Louang prabang Province

Content

1. VILLAGE MAIN CHARACTERISTICS

- GPS coordinates: 20°21'26.08"N, 102°56'24.17"E (Fig. 1 and 2)
- Location: 1035 m asl, along the main road
- Accessibility: good, at a cross road, 3h from Luang Prabang
- Size (2014): 25 households (32 in 2011), 190 inhabitants, 1700 ha
- Ethnic group: Hmong
- External supports:
  - Past supports from Nayobai (credit), and ADB livestock (credit, livestock)
  - PLUP implemented in 2011 with the support of NUDP
  - Past farming contract on tea (Cie not registered, was asked to leave the district)
- Others:
  - Accessibility is quite good but the market place is very basic,
  - Electricity does not reach the village because of a conflict between two electricity providing companies
  - Water system is very poor causing recurring lack of water during the dry season
  - Important relations with Luang Namtha (relatives there) with technology transfer (rubber, pesticides, tea sales).

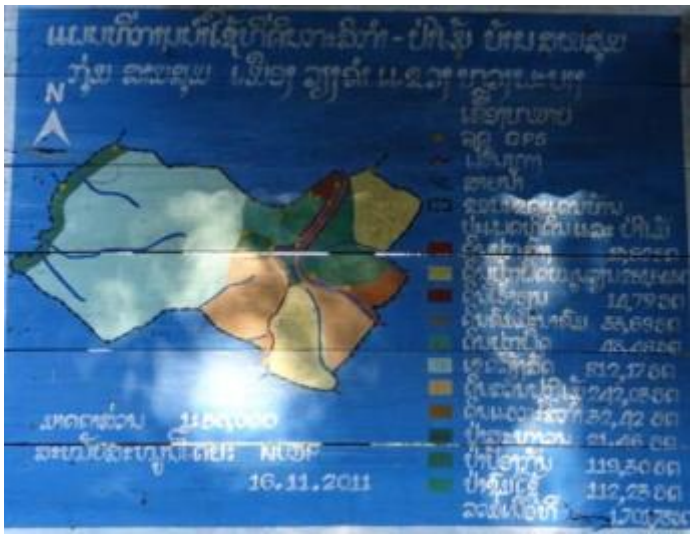


Fig 1. Fig 2.

2. LANDSCAPE UNITS / LANDSCAPE USE

The livestock area that appears on the PLUP 2011 was decided at the time of the previous village head who has now left the village. The main negotiator of the 2011 PLUP was a villager from Phadeng who moved to Samsoom in 1999. The current village head did not agree to turn this area into a livestock area as it was a good area for shifting cultivation. But they had to comply with the decisions of the former village head, who has now left the village. As a consequence, the land use plan was basically not followed.

In 2014, a 2 km road was built to reach the production areas for a total amount of 32 million kips (see red dashed line in the map below). The village head collected money from all households for this investment. An individual person who owns an excavator was hired to dig the road. Such investment reveals the intention of villagers to intensify agriculture in the area reached by the road.

The current rotational system is based on large blocks where all villagers crop a given year about 30 to 40 ha. The first year of the rotation villagers crop rice and traditional maize for pigs at the bottom of the plot. A new fence is built every year to protect the swidden against damages from livestock. The second year some villagers grow job's tear in the same block, then the large livestock are left roaming in the 1 or 2 years fallow land. The livestock management is closely linked to the 7 years rotational swidden system. Villagers agreed to build permanent fences and to adapt their fire management practices. By cleaning the area close to the fence they avoid the fence to get burnt. Using permanent fences, livestock systems can be improved within the rotational system by growing forage grass in the fields and fodder trees in the fences and the fallow system can also be improved by adding fast growing legume trees.

3. ACTIVITY PLANNING 2015

The overall e idea is to gradually create fenced blocks where improved pastures and fallow management practices can be developed over the years. After about 7 years, a combination of rotational crop-livestock system is anticipated in the western part of the landscape and a more intensive, individually managed, improved pasture system will be set up in the southeastern part of the village in the Hoauy Ma area.

Activities are presented by decreasing importance according village development committee

1. Permanent fencing of agricultural land area

Referring to:
- Past investment (permanent fencing of external boundaries; annual maintenance + internal fences)
- Livestock importance + farmers motivation regarding livestock activities
- NUDP pilot activities (short-term fattening cut & carry systems)

General objectives:
- improve crop-livestock management (management on rotational blocs). Plan for gradual fencing with living fences of cultivation blocks about 30 to 40 ha each. Land use : first year upland rice and maize to feed pigs, second year grow job's tear and grass to feed livestock, then improved pasture with fast growing trees and pigeon pea.
- Decrease labor requirements for fencing

Specific objective for 2015 – see powerpoint presentation for more details:
Support the permanent fencing of the rotational cultivated area in 2015

Possible support from Project:
(- barber wire)
- Vegetative material for living fence

Implementation steps:
- Length of fence to be measured (technician + villagers) to assess needs
- Study of possible species suitable for upland (850 – 1100m asl) acid soils to be made (project, villagers)
Mixt of mai xaco, mai nhieu, mai hien + acacia sp. (catin nalong), Makao + legume trees e.g. Gliricidia sepium; seedlings to be prepared at TSC
- Wood fence to be settled before Pi mai (villagers)
- Additional barbewire to be purchased and brought to the village before Pimai (project)
- Holes for living fence to be made before June (villagers)
- Vegetative material for living fence to be purchased and brought to the village before June (project)

2. Village infrastructure improvement
Market place : village ideally located at the crossroad between roads going to Vietnam, Viengkham city and Pakseng district but market infrastructure still poor.
Support from project to build an improved permanent market of 60 m2 (6x10m), including levelling, concrete, roof material (xang kassi) and nails.

A detailed plan and budget has been presented during the whole village meeting but respective responsibilities and possible support from NUDP 'small infrastructure project' still to be defined.

3. Market opportunities
Links with potential buyers/collectors to be explored by the project (in partnership with NUDP lot C, Agroforex, PALaM LPG) for tea, and stick lack production.

4. Crop diversification
Introduction of collections for:
- Vegetables (e.g. salad) (in relation with Muong Muay TSC)
- Soybean collection
- Cassava collection + stylosanthes

Pigeon pea with stick lack,
Legume crops (red and black beans) associated with maize or job's tear
Intercropping of legume crops (arachis pintoi) in tea plantations
Introduction of new fruit tree varieties (prunus, peach, lychee, etc.)

5. Small equipment for sowing operations
Hand jab seeders to be introduced from Saya to reduce labour requirements for rice, maize and job's tear production
Two sets given to the two units in the village ; villagers have to define use regulation before receiving them.

6. Bamboo forest management
Referring to Mai Hok resource decrease in the village. Current proposal from villagers and district is to harvest one year and stop harvesting 2 years.
Plan for resource management (rotational protection area) to be settle (in partnership with GRET-SNV bamboo project in Houaphan)

7. Kids sensitization to eco-friendly agriculture
Big primary and secondary school in Samsoum village (707 students from 35 surrounding villages, 3 ethnic minorities)

Good opportunity to sensitize kids to eco-friendly alternatives:
- organic vegetable production
- compost production
- Tree nursery (notably for living fence)
- visit of technical service centre and training activities

According possibility/ partnerships:
- nutrition (LAN program)
- bioinsecticide (for vegetable)?
- GAP?
- natural resources management (e.g. bamboo)?
- climate change?

4. TENTATIVE BUDGET

Project support of about 27 millions LAK (3,400 USD) for 2015, not including training support (details below).

Activity	Project support (LAK)	Description
1.Improve production Area		
1.1 Pigon pea mixe upland rice		
Support seed pigeon pea	960 000	4kg/ha* 12ha, 1kg=20000
Stick lack	500 000	10kg*50000
1.2. Living fence	2 100 000	1 tree =300 kip ; 3500m
Training on improved fallow	pm	
1.3.Hand-jab seeders	1 600 000	8 hand jab seeders from Saya
2. mprove Livestock system		
Training on forage management and vaccination	pm	
2.1. Big livestock		
Forage seeds cattle	900 000	1 ha
2.3. support equiment Vaccination	5 000 000	2 sets
3. Crop diversification		
3.1. Vegetable	500 000	
3.2.job's tear + rice bean	1 000 000	rice bean
3.3. Soybean	1 000 000	
3.4. Fruit seed	2 250 000	
4. Activity in school		
4.1. Sugar cane	500 000	1=5000kip,100
4.2. Vegetable production	1 200 000	
4.3. Fruit tree	2 600 000	
5. Market	7 000 000	6m*8m, concrete
TOTAL (LAK)	**27 110 000**	

EFICAS Project
Activity plan 2015
Muang Mouay technical service center (TSC), Viengkham district, Luang Prabang Province

Content

1. TSC MAIN CHARACTERISTICS

- GPS coordinates: 20°16'34''N – 103°02'56''E
- Location: 480 m asl, in Muang Mouay village
- Accessibility: easy
- Size (2014): 3.6 ha
- Creation date: 2009
- Status: district TSC (Viengkham, 2KB: Muang Mouay and Sopheuang, total 15 villages)
- Nb of staff: 2 (2 GoL + 4 civil servants)
- TSC partners (2015): AgriSud, NUDP, EFICAS
- Source of finance: ADB (livestock), Worldvision, AgriSud, NUDP

Fig 1. Muang Mouay TSC location in KB Muang Mouay and Sopheuang, Viengkham district (village boundaries MoNRE, 2011)

2. TSC MAIN FACILITIES AND ACTIVITIES

- Facilities
  - Office (dormitory) supported by ADB livestock
  - Water reservoir and water adduction (NUDP and Agrisud)
  - Livestock raising facilities (pigsty, frog pen, maize mill for feed)
  - Storage room (NUDP)
- Main activities
  - Veterinary pharmacy: the main source of income generated by the TSC activities; initially supported by World Vision; Provide vaccination service + medicine sale;
  - Vegetable production
  - Chicken raising
  - Livestock forage production
  - Fruit trees
  - Training activities (vegetable, small livestock raising, compost production)
  - Paddy extension service (SRI) outside of the TSC in Muangmouay, Naven and Houaykon

3. ACTIVITY PLANNING 2015

Activities 2015 have been discussed with TSC staffs and TSC current partners (Agrisud, NUDP, and EFICAS), and supports (financial and technical) were shared as follow (activity location see Fig. 2):

Activity	Area (m2)
supported by EFICAS in 2015	
Seed/plant production	
Arachis pintoi	300
Guinea grass	500
Nepia	500
Stylo	500
Bracharia ruzi	670
Paspalum	500
Cropping systems	
Maize + pigeon pea high density (improved fallow)	400
Upland rice + pigeon pea low density (sticklack)	400
Cassava + stylo	1200
Crotalaria for soil improvement in vegetable plot	4000
Cardamom (Quangtoum + Paksong)	600
Tree seedling production in nursery (acacia for living fences x 2000)	
supported by Agrisud in 2015	
Maize + vigna	1200
Vegetable - rainy season	500
Vegetable - dry season	4000
supported by NUDP in 2015	
Village farmer need assessment	
Villager training on specific topics	
Goat raising (4 head + ?? Additional upcoming)	
Pig raising demonstration with MM villagers' pigs	
Frogs	
Vigna + fruit trees	3000

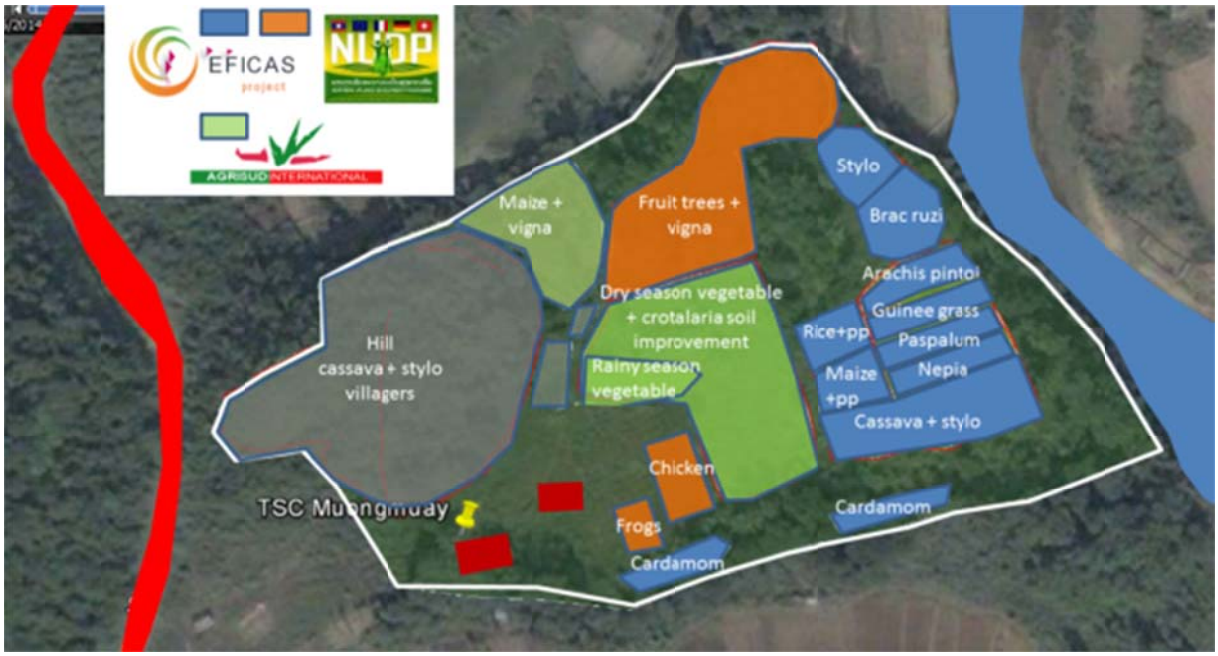


Fig 2. Activities and support sharing for 2015

4. TENTATIVE BUDGET

EFICAS financial contribution in 2015: about 12 millions LAK for 2015.

Activity	**Project support (LAK)**	**Description**
1. Perennial crops		
Nursery building	700 000	Net, wood, wire
Small equipments	800 000	Plastic bag, seeds
2. Plant material collection		
Forage plot	500 000	0.3 ha
Crotalaria	300 000	0.4 ha
Cardamom seedlings	500 000	Paksong and Quangtum variety
3. Cropping systems		
Maize/rice + pigeon pea	400 000	0.1 ha
Cassava + stylo	400 000	0.15 ha
Brush cutter + gasoline	2 500 000	
4. Stick lack / inoculant maintenance		
Stick lak inoculant	400 000	
5. Support to activity implementation and monitoring in intervention village		
Perdiem technician	4 000 000	Basis 5 days/month
Gazoline	1 000 000	
TOTAL (LAK)	**11 500 000**	