



**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

HOUAPHAN PROVINCE



May 2015

FOREWORD

Community-based Agricultural Development Plans (CADPs) were conducted in the two target districts (Viengxay and Houamuang) and the four target villages (Vangxaeng, Phoukang, Naphieng, and Houaymoun) 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 Phonthong 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

[Ban Vang xaeng, Viengxay district](#)

[Ban Phoukang, Viengxay district](#)

[Ban Naphieng, Houamuang district](#)

[Ban Houaymoun, Houamuang district](#)

[Phonthong technical service center \(TSC\), Viengxay district](#)

EFICAS Project
Community-based Agricultural Development Plan (CADP) 2015
Ban Vang xaeng, Viengxay district, Houaphan Province

Content

1. Village main characteristics
2. Landscape units / Landscape use
3. CADP 2015
4. Tentative Budget 2015

1. VILLAGE MAIN CHARACTERISTICS

- GPS coordinates: 20°29'38.65"N - 104°20'55.42"E (Fig. 1)
- Location: along the road, 555 m asl.
- Accessibility: good, road under renovation, 35 km far from Samneua capital, 25 km from Sobbao; proximity with Vietnam border (Sobbao)
- Size (2014): 38 households, 223 inhabitants, 1000 ha
- Ethnic Group: Tay deng (Laoloum)
- External supports: past support from PRF for infrastructure improvement (primary school, meeting room, water supply), from ADB livestock (until 2012) on credit for livestock; from NUDP on coffee seedlings; PLUP implemented in 2012 with the support from NUDP-GiZ; contract with private sector for maize and bamboo (may khouan) production
- Others
 - Electricity since 1998 (1998- 2012 electricity grid from Vietnam; from Lao national grid since 2012); internet and telephone networks are however limited
 - Several off-farm income opportunities with a dam under construction beside village on Hao river (construction started in 2013 and should be completed in 2019) and the renovation of the road (paid labor opportunity for young men); the women of the village are also contracted by a Company from Samneua for weaving (Xin production)
 - Dynamic village with many collective (e.g. rules defined related to land use management) and individual (e.g. cardamom domestication, SRI, watermelon dry season production, stick lack production experimentation, porcupine raising...)

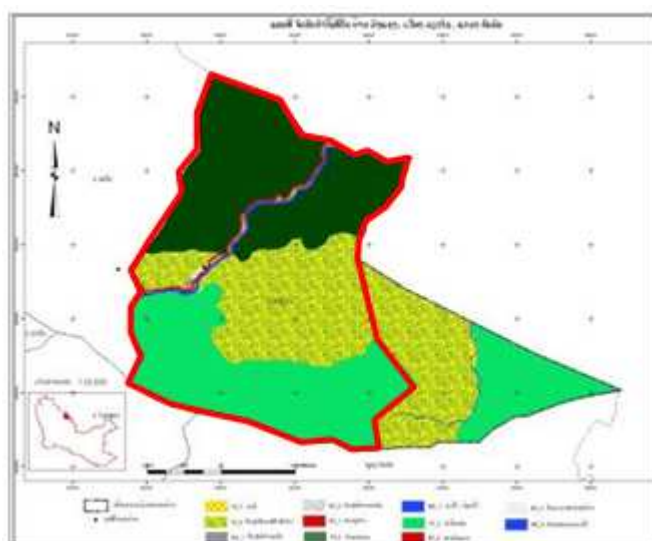


Fig. 1 Village boundaries from PLUP 2012 vs. boundaries as discussed with farmers (in red)

2. LANDSCAPE UNITS / LANDSCAPE USE

6 main landscape units were identified (Fig. 2):

1. Paddy fields. All private. 7 HH, 3.2 ha.
2. Shifting cultivation area. Upland rice (~25 ha, 25 HH) and maize (~ 10 ha, 20 HH).
3. Permanent agricultural area (since 2013):
 - Coffee (22 HH, 14 000 seedlings, about 4-5 ha).
 - Orange tree(3 HH, 400 plants, about 1 ha).
 - Pigeon pea (8 HH, about 3-4 ha).
 - Makkao area.
 - Fish ponds.
4. Livestock area. Created in 2013 (in relation with the establishment of the permanent agricultural area)
5. Bamboo forest area.
6. Conservation forest.

The Hao river is another important element of the village landscape with an on-going dam project beside the village and river fish as an important source of protein.

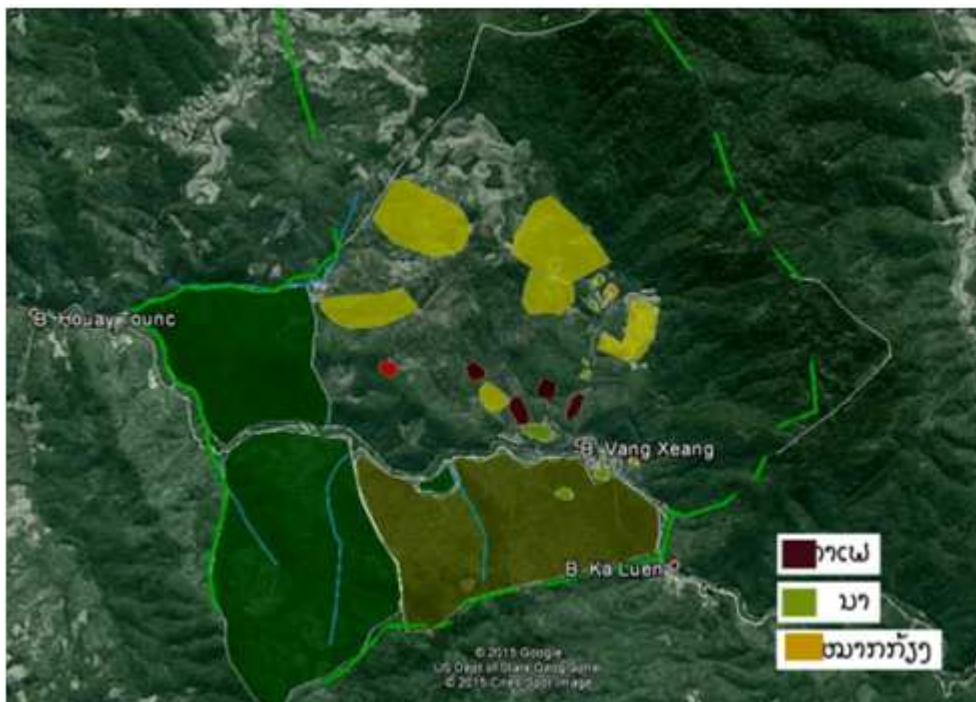


Fig. 2 Vang xeang village landscape units

3. ACTIVITY PLANNING 2015

Activities planned for 2015 are related to 4 topics: agricultural land management (crop-livestock areas), livestock system improvement, agriculture diversification, and agricultural equipment.

1. Agricultural land management

Rules related to agricultural land zoning and animal roaming (i.e. creation of a livestock area, permanent fencing of permanent crop area, rules related to opening and closure of entrance doors) were established in 2013 but are still poorly respected with conflicts related to animal roaming and damages on perennial crops (coffee).

Law reinforcement related to animal roaming is essential for sustainable intensification of both cropping and livestock systems.

Villagers agreed to modify entrance doors (system with trench and bamboo bridge above trench) to avoid animal entrance when doors are kept open.

No support requested from project for this.

Possible support from project to improve permanent fence (e.g. living fence)

Monitoring of:

- Farmers involvement on this topic (e.g. nb of HH that participate to entrance door modification)
- Impact on agricultural land management (e.g. number of conflicts related to animal roaming)

2. Livestock system improvement

Training on animal health management and vaccination

Financial support for vaccination equipment (e.g. fridge), and revolving fund for vaccines/animal drugs purchase that would be managed by a village veterinary team (3 pers. Identified) .

Monitoring of the number of animals yearly vaccinated and of vaccination impact on animal mortality.

3. Agricultural diversification

3.1. Improved fallow with pigeon pea / stick lack production

According to village head, the easiest activity to implement /start with since:

- There is a demand for stick lack (Vietnamese traders asking every year; minimum purchase price of 20,000 LAK/kg)
- 8 HH have sown pigeon pea 3 years ago (about 3-4 ha of already well-established pigeon pea plot; seeds coming from Vietnam; traders came to provide seeds but not the inoculant)
- High interest from farmers
- Inoculant and knowledge available in the district (e.g. in B. Phonxay: inoculant sold at 45,000 LAK/kg; possible inoculation of 20 trees/ kg of inoculant; possible)

Support from project related to inoculant and technical support (either from Phonxay village or Houayvangkao village, in Pakseng district)

Monitoring of technical (e.g. labor requirement, productivity, inoculant management and survival), economical (selling price, demand, profitability), and environmental (impact of pigeon pea on soil fertility) parameters.

3.2 Composting

Referring to:

- Coffee plant mortality, coffee plant limited growth, and farmers investment on coffee crop (nursery, planting, weeding)
- The importance of pig production and the limited valorization of pig manure

- The relative proximity and accessibility between pig and coffee production areas
It is proposed:

- Training on fruit and coffee management

- Training and testing of composting and compost use on coffee plants

Support from project on training organization (18 HH declared being interested)

Monitoring of compost impact on coffee growth (plant height)

3.3 SRI

Already experimented by 1 farmer in 2014 with positive results.

All paddy field owners (7 HH) want to experiment in 2015.

Support from project: bring additional expertise from other villages where farmers have been experimenting SRI from longer time; training and material for weed control.

Monitoring: agro-economic data (labor, productivity, profitability)

3.4 Cardamom

On-going experiment from 1 farmer trying to grow wild cardamom.

17 HH interested to try both Quangtum/ Paksong cultivars (about 5-10 plants/HH)

Support from Project: Cardamom seedlings and training on cropping itinerary

Monitoring: Cardamom seedling growth and productivity (T+3y)

4. Agricultural equipment

Test and evaluation of hand jab seeder for rice and maize sowing

4. TENTATIVE BUDGET

Project support of about 23 millions LAK (2,800 USD) for 2015, not including training support (details below).

Activity	Support (LAK)	Description
1. Animal roaming control Gates opening/closing system	pm	
2. Livestock system improvement Fridge for animal drugs and vaccines Revolving fund for animal drugs	1 000 000 1 800 000	
3. Agricultural diversification 3.1. Improved fallow with pigeon pea / stick lack production Training on inoculation Inoculant purchase	pm 16 000 000	320 kg of inoculant
3.2 Composting Training on fruit and coffee management Training and support on composting	pm 500 000	100 kg Lime
3.3 SRI Training on SRI technic Equipment for weed control SRI	pm 1 000 000	
3.4 Cardamom Cardamom seedlings	600 000	
4. Agricultural equipment Hand jab seeders	1 800 000	9 hand jab seeders
TOTAL	22 700 000	

EFICAS Project
Community-based Agricultural Development Plan (CADP)
Ban Phoukang, Viengxay district, Huaphan Province

Content

1. Village main characteristics
2. Landscape units / Land use
3. CADP 2015
4. Tentative budget for 2015

1. VILLAGE MAIN CHARACTERISTICS

- GPS coordinates: 20°19'204''N – 104°30'812''E
- Location: along the road from Viengxay to Nameo, 17km from the Vietnam border, in Namxang kumban, 486 m asl.
- Accessibility: not easily accessible, 15 km far from the main road.
- Size (2014): 36 households, 210 inhabitants, 864 ha - PAFO 2012, 1145 ha - GRET 2013
- External supports: past supports from GoL projects (LUFSIP, PRF, ADB Livestock) and NGO GRET for support to bamboo production and value chain. PLUP done in 2012 by DAFO and later on by DONRE (with different village boundaries, Fig. 1). In 2013, the Bamboo project applied the combined method to bamboo areas.



Fig. 1 Village boundaries (DAFO 2012 and PLUP 2013)

2. LANDSCAPE UNITS / LAND USE

Natural and managed (bamboo) forests

The whole southern part of the village landscape is dedicated to bamboo production (Fig. 2). Livestock do not have access to this area which is very remote (> 4km). The limestone relief is very steep in some places that are not suitable for cultivation. As a consequence areas have been delineated as protection and conservation forests in the southern part of the village, north of the bamboo forest and in the north-west of the village.

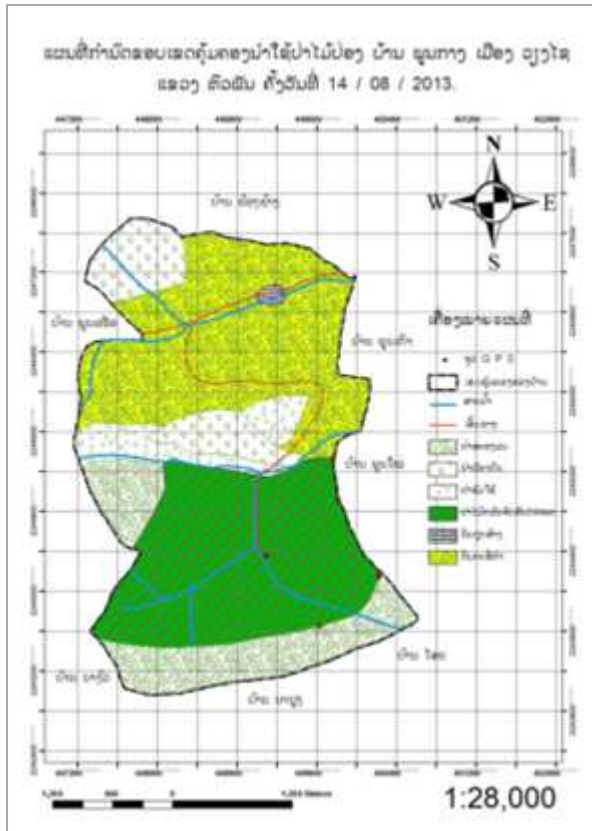


Fig. 2 Village land use (PLUP 2013)



Fig. 3 Livestock area (Plan)

The whole remaining area can be divided as paddy areas located along the road and river and rotational crop on the slopes with upland rice and maize grown in a 3 to 4 years rotation with livestock roaming in the young fallows and the paddy areas during the dry season.

4 main agricultural landscape units identified.

1. Lowland paddy rice area

Collective paddy area estimated at 7,5 ha, 36 HH.

Practice SRI since 2 years with the support of a government project. Adopted only part of the package: 1 plant of 30 days. Reduce work as compared with before and increased the yield. Single variety: Khao kai noi. No herbicide, no fertilizer, no manure used in the paddy fields.

2. Rotational agricultural land

Upland rice: In 2012, the DAFO got support from a governmental project to register 1 fallow plot per household through issuing a temporary land use certificate. 36 plots were registered.

Maize: grown since 2006. 4 years rotation (3 years fallow). Return to old plot the 4th year.

3. Makkao area

Planted the first year with rice. Makkao is now 2 years old.

4. Livestock Area (Plan, Fig. 3)

3. ACTIVITY PLANNING 2015

Activities planned for 2015 are related to 6 topics: livestock area settlement and management, new paddy land area soil fertility improvement, crop diversification in the lowland, introduction of legumes in upland cropping systems, market analysis, and Makkao-based agroforestry systems.

1. Livestock area

Develop a new livestock area that did not exist in the previous land use plans. This activity is in line with the district policy to promote livestock development through setting-up livestock areas. Besides, it will allow intensifying cropping systems in the lowland and uplands.

According to the HH survey, 3 families raise buffaloes only, 5 families raise both buffaloes and cattle, 12 families raise only cattle. Total 28 buffaloes + 68 cattle = 96 heads. Improved pasture of 15 ha minimum is required for sustainable management of about 100 heads.

When presenting this data to villagers, they mentioned that they believe there is more livestock in the village than recorded in the HH survey. More realistic value would be about 150 heads (added 1/3 to the survey figure).

1. *3 blocks for maize area*, each one managed by one unit will be opened by all HH in 2015. Even villagers who do not have livestock will be involved in the development of the livestock area as they may want to invest in livestock in the future and would request access to the communal livestock area.
2. A *living fence* will be planted around each plot and along the eastern border with neighboring village.
3. Different *grass species* (elephant grass, guinea grass, bracharia sp., stylosanthes, etc.) will be planted in each block about 2 months after maize sowing, according to the design proposed in the powerpoint.
4. *Shelters for the animals* will be constructed in a flat area at the bottom of the livestock area, close to a stream.
5. The stream area will be arranged with *reservoirs* so that livestock can easily get access to clean water.
6. *A visit will be organized in July to model villages* that have developed similar livestock areas in Nonghet district (Xieng Khouang) or elsewhere.

Possibility to generate additional benefit from selling grass seeds. About 300 kg/ha can be harvested and sold about 45.000 kip/ha.

2. Soil improvement in newly opened paddy fields

Many paddy fields have been terraced in 2014 as part of a policy to reduce the village area under shifting cultivation and to seize the opportunity provided by an entrepreneur from Viengxay who own two excavators. This person came to the village in 2014 and offered to open new paddy field (Nati), providing credit opportunity with no interest rate for one year.

1. *Measurement of individual paddy fields and issuance of temporary land use certificates*
DAFO staff will use GPS units to measure the paddy area: former collective area individually distributed and newly opened nati.

2. *Experiments on soil improvement of newly opened nati*

During the first years the yield can be very low before fertility can be regenerated after terracing. Soil improvement techniques will combine (i) the cutting of *chromolena odorata*

plants from neighboring fields that will be incorporated into the soil and (ii) sowing of stylosanthes or Toua sano or crotalaria inside rice at the end of the season to produce green manure to be incorporated into the soil.

3 to 5 households will be selected and improved technique will be compared with traditional technique with 3 repetitions in each paddy area. A monitoring system will be setup.

3. Spring and winter crops in paddy land

Very little spring and winter crops at the moment in the village partly because of the roaming animals that feed on paddy residues.

One large area will be fenced (possibly close to the road, behind the newly constructed market place) and all HH cropping this area will engage in spring maize cultivation, then rice during the rainy season and winter vegetable (cabbage, etc.): from 1 to 3 crops per year on the same piece of land.

4. Introduction of legume crops in swidden fields (maize/rice)

Rotational system of upland crops based on 3 years rotation with some fields planted two successive years. Leads to decreasing yields in the absence of fallow.

Combination of maize and pigeon pea or vigna radiata (red bean) into a rotational system without fallow. Requires a living fence.

Project will test use of *hand jab seeder*. Two sets (rice + maize) will be provided to each unit (total 6 tools).

5. Market analysis for different products

Market opportunities will be assessed and a market information system will be setup by Possible opportunity related to a Japanese company supporting a village in Viengxay to grow cabbage.

6. Agroforestry system in Makkao plantations

Introduction of tea trees and fruit trees (plum, peach) in makkao plantations

4. TENTATIVE BUDGET 2015

Project support of about 21 millions LAK (2,600 USD) for 2015, not including training support (details next page).

Activity	Project support (LAK)	Description
1. Livestock area		
1.1 Forage grass seeds	6 500 000	5 ha of improved forage grass
1.2 Fence		
Barber wire	2 200 000	20 rolls
Living fence	800 000	1500m of living fence
1.3 Cattle pen	1 000 000	roof
1.4 Study tour	pm	
2. Soil improvement in newly opened paddy fields		
2.1 Field surface measurement	pm	
2.2 Temporary land use certificates issuance	3 600 000	Admin cost for 36 HH
2.3 Soil fertility improvement	1 000 000	Seeds of stylo, crotalaria, sesbania for 1 ha
3. Spring and winter crops in paddy land		
Fence	1 100 000	10 rolls
Winter crop seeds	400 000	
4. Introduction of legume crops in swidden fields (maize/rice)		
4.1 Legume seeds	1 000 000	2 ha of maize intercropped with pigeon pea or rice bean
4.2 Agricultural equipment	1 800 000	9 hand-jab seeders
5. Market analysis for different products	pm	Vegetable
6. Agroforestry system in Makkao plantations		
Tea and fruit trees seedlings	1 800 000	0.2 ha intercropped with Makkao
TOTAL	21 200 000	

EFICAS Project
Community-based Agricultural Development Plan (CADP) 2015
Ban Naphieng, Houamuang district, Houaphan Province

Content

1. Village main characteristics
2. Landscape units / Landscape use
3. Activity plan for 2015
4. Tentative Budget 2015

1. VILLAGE MAIN CHARACTERISTICS

- GPS coordinates: 20°03'52.51"N, 103°30'11.91"E (Fig. 1 and Fig. 2)
- Accessibility: good (asphalt road), 40 km far from Nam Nern (Soplao village), 25 km from Hiem district capital
- Location: along the road, 1300 m asl.
- Size (2014): 57 households, 388 inhabitants (all belonging to Khmu ethnic group), about 5,000 ha (2 PLUPs implemented in 2003 and 2012 but village boundaries are not similar and seem incorrect in both case; Fig. 3 and Fig. 4)
- External supports: past support from PRF on infrastructure improvement (primary school, meeting room, water supply, road to livestock area), Concern (village sanitation); current support from Proceed (environmental sensitization); PLUP implemented in 2012 with the support from NUDP-GiZ; contract with private sector for hybrid maize and tea (forest tea)



Fig. 1 Naphieng location in Houamuang district



Fig. 2 Naphieng village boundaries (PLUP, 2012)



Fig. 3 Naphieng 3D model map (PLUP, 2012)



Fig. 4 Naphieng 2D map (PLUP, 2003)

2. LANDSCAPE UNITS / LANDSCAPE USE

6 main landscape units were identified (Fig. 5):

1. Paddy field area (Fig. 5, in yellow). Located along the Nam pai river. All fields are private, 44 HH, 22,7 ha.

2. Maize (and rice) production area (Fig. 5, in orange). Upland rice and maize produced under a rotational basis of 5-7 years (2-3 years production, 3-5 years fallow); Maize roads (i.e. roads built to facilitate maize production transport back to the main road) are the main drivers of past recent changes in village landscape units management and agricultural production area choices; first maize road was open in 2011, two then in 2013, with 2 more roads built in January 2015 to bring back 2014 maize production; upland agricultural area in the village depends on road construction/ extension possibility (distance to village, slope).



Fig. 5 Naphieng main landscape units

3. Non-used agricultural production area; all the southern part of the village (below Nam Siep river, including Houay Tcheu and Houay Tou2 watersheds) is declared as agricultural land (PLUP 2012) but is no longer cultivated due to distance (far) to the village and slopes (steep)

4. (Big) livestock area (Fig. 5, in dark green); where all cattle and buffaloes are maintained during the raining/ cropping season. Road to livestock area built by PRF in 2013. About 1 km barber wire fence on the way to lowland paddy area to prevent animal roaming.

5. Xanaam area (Fig. 5, in light green). About 6-7 private/small groups xanaam where pigs, goats and poultry are raised; no fence but apparently no problem of crop damages related to animal roaming due to natural barriers (steep slopes; animal not going beyond mountains)

6. Conservation forest (Fig 3, in dotted green).

3. ACTIVITY PLANNING 2015

Activities planned for 2015 are related to 5 topics: lowland paddy rice, maize, livestock, crop diversification, and small agricultural equipments

1. Lowland paddy rice

a) Paddy surface measurement and temporary land titling

Plan at provincial level related to agricultural land titling and notably lowland paddy fields titling (plan but timeframe for implementation not yet defined). DALaM can emit temporary land titling that will allow to speed up the process once the land titling policy will be officially approved.

b) IPM methods to decrease paddy rice insect pressure (e.g. To phia, duang co)

IPM center in Vientiane will be contacted to get additional information related to the specific threat and known methods to decrease insect pressure.

Monitoring will be established to assess the impact of alternative systems (1c, 1d, 1e) on insect pressure.

c) Rice variety diversification

The main variety sown is the Cai noi, white color variety that appears to be highly sensitive to pests.

Other sticky rice varieties (e.g. cai noi, yellow variety) will be tested and evaluated (productivity, profitability, impact on pest pressure)

d) SRI

SRI technics will be tested and evaluated (labor requirement, productivity, impact on pest pressure)

e) Dry season production

To be confirmed according to farmers capacity to fence part of paddy field area to protect from livestock roaming.

Test and evaluation of garlic, vegetable (e.g. cabbage, salads), forage (oat), and cover crop (e.g. buckwheat).

Agronomic (production, productivity), economic (labor, profitability), and environmental (impact on pest pressure on following rice) assessments.

2. Maize production system improvement

Referring to:

- maize as main past recent driver of livelihood improvement in the village
- the important investments made for maize production over the past 5 years (i.e. maize roads),

a) Improved fallow with pigeon pea

Primarily objective of reducing fallow period (2 years instead of current 3 to 5 years)

Secondary objective of diversifying income through stick lak production

b) Association with black bean (common bean)

Test and evaluation (labor requirement, productivity, competition with main crop, impact on rat pressure) of intercropping system based on association between maize and black bean.

c) Mice control

Training (using GiZ past training support) and financial support (purchase of additional traditional mouse trap + introduction of (multiple catch) metal mouse trap).

Monitoring of rat pressure (number of animals caught) and impact (% losses on maize production).

3. Livestock system improvement

a) Animal health improvement

Training on animal health management and vaccination

Financial support for vaccination equipment (e.g. fridge), and revolving fund for vaccines/animal drugs purchase.

Monitoring of impact on animal mortality.

b) Improved forage technology for short term fattening

Objective of short-term animal fattening (2-3 weeks) before animal sale.

Cost-benefit analysis

4. Crop diversification

a) Improved variety of plum, peach and lemon trees

b) Cardamom

Test and evaluation of Quangtum and Paksong varieties

5. Small agricultural equipment

Test and evaluation of hand jab seeder for rice and maize sowing

4. TENTATIVE BUDGET 2015

Project support of about 22 millions LAK (2,700 USD) for 2015, not including training support (details next page).

Activity	Project support (LAK)	Description
1. Lowland paddy rice		
1.1 Field surface measurement	pm	
1.2 Temporary land use certificates issuance	4 400 000	Admin cost for 44 HH
1.3 Paddy field pest monitoring	pm	
1.4 Lowland rice variety collection	500 000	
1.5 Training SRI	pm	
Equipment for weed control SRI	1 000 000	
1.6 Dry season production		
Fence	1 100 000	10 rolls
Winter crop seeds	200 000	
2. Maize production system improvement		
a) Improved fallow with pigeon pea	3 400 000	Seeds and inoculant
b) Association with black bean (common bean)	500 000	legume seeds
c) Mice control	3 000 000	560 mice traps + 56 metal mouse trap
3. Livestock system improvement		
a) Animal health improvement		
Fridge for animal drugs and vaccins	1 000 000	
Revolving fund for animal drugs	500 000	
b) Improved forage technology for short term fattening		
Forage seeds	1 200 000	1 ha of improved forage plot
4. Crop diversification		
a) Improved variety of plum, peach and lemon trees	2 000 000	100 tree seedlings
b) Cardamom	500 000	
5. Small agricultural equipment	2 400 000	12 hand-jab seeders
TOTAL	21 700 000	

EFICAS Project
Community-based Agricultural Development Plan (CADP) 2015
Ban Houaymoun, Houamuang district, Houaphan Province

Content

1. Village main characteristics
2. Landscape units / Land use
3. Activity plan for 2015
4. Tentative budget 2015

1. VILLAGE MAIN CHARACTERISTICS

- GPS coordinates: 20°06'45.24"N – 103°46'11.42"E (Fig. 1 and Fig. 2)
- Location: along the road from Namnarn to Samneua, 1045 m asl.
- Accessibility: easily accessible, along the main road.
- Size: 73 HH, 84 families in 2014 (2429 ha), 54 HH and 335 inhab in 2001 during the PLUP done by Anghong project (2007 ha); 71 HH and 424 inhab in 2015 (2467 ha).
- Anghong Project worked on livestock, trees around the village for reforestation and infrastructures. Worked as groups to protect forest around the village. Anghong did land allocation after land use planning in 2002.
- The CLIPAD project did PLUP in 2014 then provided support to raise small livestock through a village development fund (20 million kips). Villagers can buy chicken and goats. 9 villagers borrowed 900.000 kip but paid goats at a very expensive price (50.000 kip/kg).

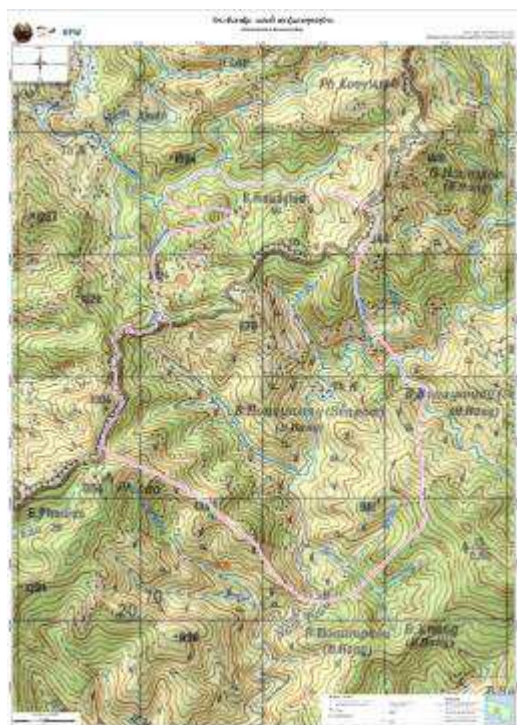


Fig. 1 Houaymoun location in Houamuang district **Fig. 2** Houaymoun village boundaries (PLUP, 2014)

2. LANDSCAPE UNITS / LAND USE

Current land use map and land use plan have been produced in 2014 with the support of the CLIPAD (Fig. 3 and Fig. 4)

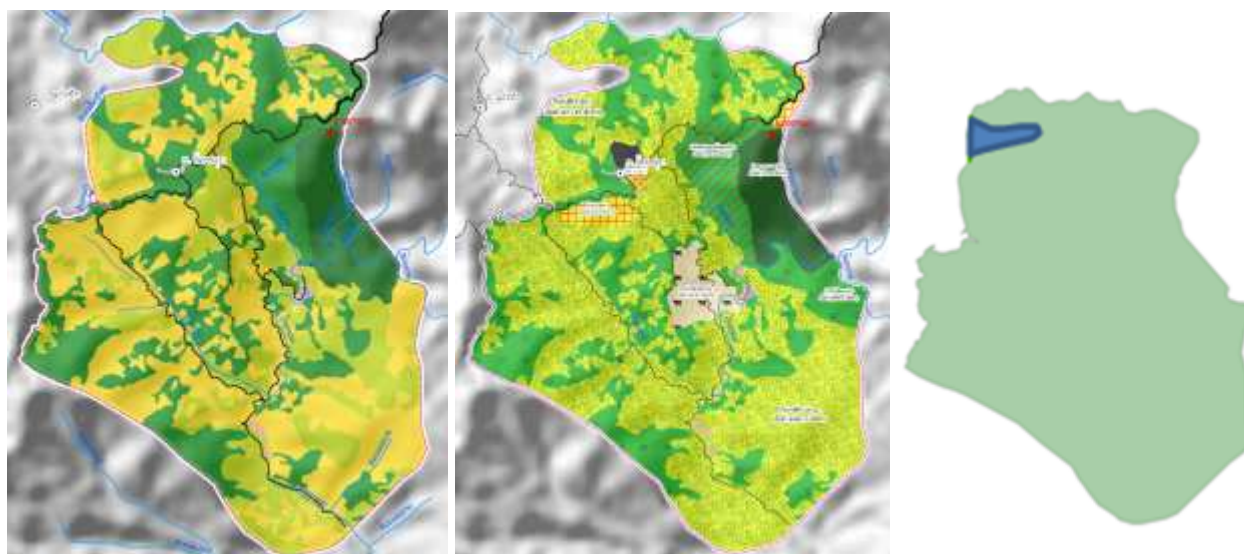


Fig. 3 Current Land use **Fig. 4** Land use Plan (CLIPAD, 2014) **Fig. 5** Boundaries modified (2015)

The village boundary map was revised during the CADP process as villagers mentioned that there was a problem in the north-western part of the village. The village boundary follows the Houay Huang stream which gives a different, compact shape to the village map (Fig. 5) and bring the total village area to 2467 ha.

Village land use types include:

Land Use Type	Area (ha)	Area (%)
Agriculture Land	1492	61,4
Rainfed Paddy Area	8	0,3
Upland Agriculture Land	1378	56,7
Natural Grassland - Livestock Area	64	2,7
Land Reserve	42	1,7
Fruit Tree Orchard	1	0,0
Building Land	3	0,1
Reserve Building Land	0	0,0
Buildings In Settlement Areas	3	0,1
School	0	0,0
Cultural land	21	0,9
Sacred Forest	21	0,9
Forest Land	902	37,1
Managed Use Forest	665	27,4
Village Biodiversity Conservation Forest	121	5,0
Village Watershed Protection Forest	115	4,8
Roads	10	0,4
Paved Road	4	0,2
Unpaved Road	6	0,2
Total	2429	100

3. ACTIVITY PLANNING 2015

Activities planned for 2015 are related to 4 topics: lowland paddy rice, livestock, and upland cropping systems improvements, and demonstration for students at school

1. Paddy rice

- Systematic plot measurements with GPS of all terraced paddy fields, both old and new. Yield assessment in 2014 (Nb of bags per field) as done in the table here above for a few fields. Assessment of irrigation water availability for each field to assess impact of water availability on rice yields. Assess the number of HH that would benefit from improvement of the irrigation system and the impact on lowering upland rice areas. Issuance of temporary land use certificates for paddy fields by DAFO using the same approach as already done in the past for upland fields in Phoukang village.
- Follow-up survey on feasibility of an improved irrigation system and how the costs could be shared among multiple partners.
- Agricultural intensification and diversification in the paddy terraces through introduction of winter crops (vegetable) and use of manure and compost (training on composting)

2. Improved livestock management

- Set up permanent fences (combination of barbed wire and tree seedlings) in maize fields cropped this year in the livestock area.
- Sow bracharia and stylo seeds in the fenced maize fields at the time of the second weeding (about 60 days after sowing). Support villagers in building animal pens and water reservoirs.
- Grow cassava in association with stylo in permanently fenced fields to feed pigs and fishes.

3. Sustainable cropping systems in the uplands

- Improved fallow management with pigeon pea for upland rice (with sticklack production) and maize.
- Introduction of hand jab planters
- Improved management of riparian forests through introduction of cardamom

4. Training and demonstration

- School activities: fruit tree planting combined with arachis pintoï for soil protection.
- Training by Houayvat villagers about sticklack production and maintenance of the inoculum
- Field visits to other villages and TSC

4. TENTATIVE BUDGET 2015

Project support of about 23 millions LAK (2,800 USD) for 2015, not including training support (details next page).

Activity	Project support (LAK)	Description
1. Lowland paddy rice		
1.1 Field surface measurement	pm	
1.2 Follow-up feasibility study for improved irrigation system	pm	Admin cost for 44 HH
1.3 Dry season production		
Training on composting	500 000	100 kg Lime for compost
Winter crop seeds	300 000	
2. 3. Sustainable cropping systems in the uplands		
Improved fallow with pigeon pea	5 000 000	Seeds and inoculant
3. Livestock area		
Barber wire	3 300 000	30 rolls
Living fence	500 000	support sowing and maintenance 1500m of living fence
Animal pen and water reservoir	2 000 000	
Forage seeds	4 800 000	4 ha of improved forage plot
Fridge for animal drugs and vaccins	1 000 000	
Revolving fund for animal drugs	1 500 000	
4. Crop diversification		
a) Improved variety of plum, peach and lemon trees	1 700 000	50 fruit tree + arachis pintoï at school
b) Cardamom	500 000	
5. Small agricultural equipment	2 000 000	10 hand-jab seeders (2 per unit group)
TOTAL	23 100 000	

EFICAS Project
Activity plan 2015
Phonthong technical service center (TSC), Viengxay district, Houaphan Province

Content

1. TSC main characteristics
2. TSC main current activities
3. (EFICAS-related) activity plan 2015
4. Tentative Budget 2015

1. PHONTHONG TSC MAIN CHARACTERISTICS

- GPS coordinates: 20°28'34"N – 104°17'26"E (Fig. 1)
- Location: 620 m asl, in Phonthong village
- Accessibility: moderately easy by car (bridge, dirt road), ~ 4 km from main road
- Size (2014): 4 ha
- Creation date: 2014
- Status: district TSC (Viengxay, KB Phonthong)
- Nb of staff: 1 (gov. + support from head of KB; plan for 4 staffs in 2015)
- TSC partners: NUDP
- Source of finance: GoL, NUDP



Fig. 1 Phonthong TSC and KB Phonthong location in Viengxay district



Fig. 2 Tree nursery activity

2. TSC MAIN CURRENT ACTIVITIES

Tree nursery: orange and coffee seedlings (Fig. 2)

Livestock activities in neighboring villages because no facility available at the TSC yet.

3. ACTIVITY PLAN 2015

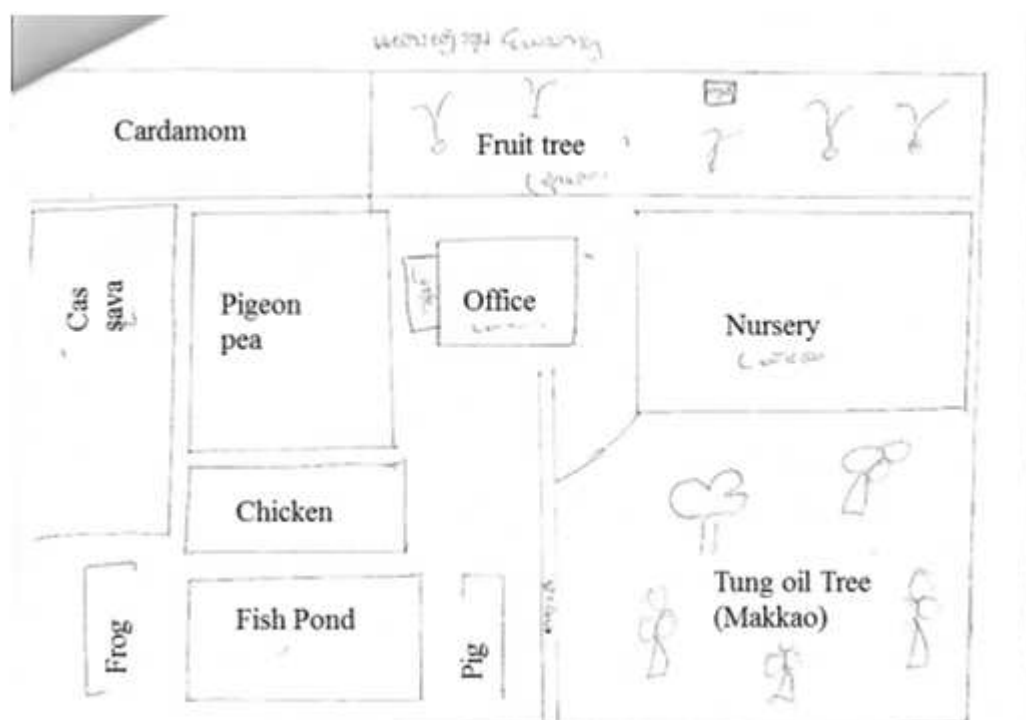


Fig. 3 TSC activities 2015 location map

4. TENTATIVE BUDGET 2015

Project support of about 11,5 millions LAK (1,400 USD) for 2015 (details below).

Activity	Support (LAK)	Description
1. Perennial crops		
Fruit tree seedlings	1,500,000	0,1 ha of improved fruit tree variety
Labour + dropping	500,000	
Nursury maintenance / small equipments	1,000,000	
Labour + dropping	500,000	
2. Plant material collection		
Cassava seedlings	500,000	0.1 ha
Pigeon pea seeds	200,000	0.2 ha
Cardamom seedlings	200,000	Paksong variety
Labour for Soil preparation	1,500,000	
3. Stick lack / inoculant maintenance		
Pigeon pea low density + inoculant	600,000	0.1 ha
4. 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	