Vietnam Ministry of Agriculture and Rural Development (MARD) Department of Agriculture and Rural Development (DARD) of Dien Bien Province Dien Bien Provincial People's Committee

## Project for Sustainable Forest Management in the Northwest Watershed Area

# Livelihoods Development Component SUSFORM-NOW (LDC)

# Vietnam

# **Project Completion Report**

March 2013

## JAPAN INTERNATIONAL COOPERATION AGENCY

OPMAC Corporation KRI International Corporation Global Link Management

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### Preface

This project completion report covers the activities of the Livelihoods Development Component (LDC) conducted during the period from October 12, 2011 to March 15, 2013 under the Project for Sustainable Forest Management in the Northwest Watershed Area (SUSFORM-NOW). During this implementation period, JICA Project Team-Livelihood Development Component (JPT-LDC) undertook various activities to introduce and assist implementation of livelihood development pilot activities, which could become models for future livelihood development activities under SUSFORM-NOW. Capacity development of the counterparts (C/P) and other relevant personnel engaging in the pilot activities was undertaken to achieve conditions where participatory forest management and livelihoods development are mutually sustainable in the pilot sites.

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English abbreviations	English	Vietnamese	Vietnamese abbreviations
5MHRP	Five Million Hectare Reforestation Programme	Chương trình trồng mới năm triệu héc-ta rừng	CTTM5THR
AI	Artificial insemination	Thụ tinh nhân tạo	
АРО	Annual Plan of Operation	Kế hoạch hoạt động hàng Năm	KHHÐHN
C/B	Cost-benefit	Chi phí - lợi ích	
C/DPMU	City/District Project Management Unit(s)	Ban Quản lý Dự án cấp thành phố/huyện	BQLDACT/H
C/P	Counterpart	Đối tác	ÐT
CPC	Commune People's Committee	Ủy ban Nhân dân xã	UBNDX
DARD	Department of Agriculture and Rural Development	Sở Nông nghiệp và Phát triển Nông thôn	SNN&PTNT
DPC	District- level People's Committee	Ủy ban Nhân dân cấp huyện	UBNDCH
FIRI	Food Industries Reseach Institute	Viện nghiên cứu công nghiệp thực phẩm	VCNTP
FMLDG	Forest Management and Livelihoods Development Group	Nhóm Quản lý Rừng và phát triển sinh kế	NQLRVPTSK
FMP	Forest Management Plan	Kế hoạch Quản lý Rừng	KHQLR
GRET	Groupe de Recherche et d'Echanges Technologiques	Tổ chức nghiên cứu và chuyển giao công nghệ	GRET
IG	Interest Group	Nhóm sở thích	NST
IP	Implementation Plan	Kế hoạch thực hiện	IP
IR	Internal Regulation	Quy chế nội bộ	
JCC	Joint Coordinating Committee	Ban Điều phối chung	BĐPC
JFY	Japanese Fiscal Year	Năm tài chính của Nhật bản	NTCCNB
ЛСА	Japan International Cooperation Agency	Cơ quan Hợp tác Quốc tế Nhật Bản	CQHTQTNB
JPT-LDC	JICA Project Team-Livelihood Development Component	Nhóm Dự án JICA-Hợp phần phát triển sinh kế	NDAJICA-HPPTSK
LDC	Livelihood Development Component	Họp phần phát triển sinh kế	HPPTSK
LDP	Livelihood Development Plan	Kế hoạch Phát triển Sinh kế	KHPTSK
MARD	Ministry of Agriculture and Rural Development	Bộ Nông nghiệp và Phát triển Nông thôn	BNN&PTNT
M&E	Monitoring and evaluation	Giám sát và đánh giá	GS&ÐG
MIA	Most Immediate Activities	Họat động tối cần thiết	HÐCT
MT	Monitoring Team	Ban giám sát	BGS
MV	Monitoring Volunteer	Tình nguyện viên giám sát	TNVGS
NFDS	National Forest Development Strategy (2006-2020)	Chiến lược Phát triển Lâm nghiệp (2006-2020)	CLPTLN
NGO	Non-Governmental Organization	Tổ chức Phi chính phủ	ТСРСР
NTFP	Non-Timber Forest Product	Sản phẩm Lâm nghiệp ngoài gỗ	SPNNNG
OJT	On-the-Job Training	Đào tạo Tại chức	ÐTTC
O&M	Operation and Management	Vận hành và Quản lý	
PDM	Project Design Matrix	Ma trận thiết kế dự án	MTTKDA
PE	Polyethylene	Nhựa dẻo	PE
PFES	Payment for Forest Environmental Services (PFES)	Chi trả dịch vụ môi trường của rừn	
PPC	Provincial People's Committee	Ủy ban Nhân dân tỉnh	UBNDT

English abbreviations	English	Vietnamese	Vietnamese abbreviations
PPMU	Provincial Project Management Unit	Ban quản lý Dự án cấp tỉnh	BQLDACT
R/D	Record of Discussions	Biên bản Thảo luận	BBTL
REDD+	Reducing Emissions from Deforestation and forest Degradation and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries	Giảm phát thải do mất rừng và suy thoái rừng và vai trò của bảo tồn, quản lý bền vững rừng và tăng cường hấp thụ các-bon của rừng ở các nước đang phát triển	REDD+
Sub-DoF	Sub Department of Forestry	Chi cục Lâm nghiệp.	CCLN
SUSFORM-NOW	Project for Sustainable Forest Management in the Northwest Watershed Area	Quản Lý Rừng Bền Vững ở vùng Đầu Nguồn Tây Bắc	QLRBVVÐNTBVN
TNA	Training Needs Assessment	Khảo sát nhu cầu tập huấn	KSNCTH
TOR	Terms of Reference	Điều khoản tham chiếu	ÐKTC
ТоТ	Training of Trainers	Tập huấn giáo viên tập huấn.	THGVTH
TSS	Three stone stove	Bếp ba đầu	BBD
VBSP	Vietnam Bank for Social Policies	Ngân hàng chính sách xã hội Việt Nam	KHPTNT
VDP	Village Development Plan	Kế hoạch Phát triển thôn bản	KHPTNT
VFDS	Vietnam Forestry Development Strategy (2001-2010)	Chiến lược Phát triển Lâm nghiệp Việt Nam (2001-2010)	CLPTLNVN
VND	Vietnamese Dong	Đồng Việt Nam	ÐVN

## Foreign exchange rate

US\$	USD 1= JPY 91.84
Vietnam Dong	VND 1= JPY 0.0044

Source: Exchange rate applied at JICA (March 2013)

## 1 Summary of the Project

#### 1.1 Background of the Project

The Government of Socialist Republic of Vietnam (the Government) has initiated efforts to increase forest coverage and to improve living conditions of local people by taking various policy measures such as development of the Five Million Hectare Reforestation Programme (5MHRP, implemented by Decision 611 (Decision No. 661/QD – TTg, dated July 29, 1998) in 1998, formulation of the Vietnam Forestry Development Strategy for 2001-2010 (VFDS) in 2001 and then, a more comprehensive and advanced version of it (i.e., the National Forest Development Strategy 2006-2020 (NFDS)) in 2007, and amendment of Decision 661 in 2007. As a result of various policy initiatives, including those afore-mentioned, the country's forest coverage, which had fallen to a low of 28% in 1998, recovered to 39.1% in 2009. However, the targets of 47% forest coverage, the share of the forest industry as two to three percent of GDP and creation of new employment opportunities by two (2) million, set for 2020, have not been achieved yet.

According to the forest plan (2009-2020) in Dien Bien province, protection forests accounts for about 55.7 % of the total forest lands (a sum of forested lands and un-forested lands) while production forests show about 31.8%, implying that a balance between protection and utilization has been achieved. However, in reality, boundaries between production forests, protection forests and special-use forests and delineations between forest lands and agricultural lands are not so clear. In addition, nearly half of the forest land remains degraded.

Based on the above background, Vietnam's Ministry of Agriculture and Rural Development (MARD) has requested the Government of Japan to provide technical cooperation, aiming to promote sustainable forest conservation in the Northwest Region. Based on the request and the Record of Discussion (R/D) concluded in May 2010, the "project for sustainable forest management in the Northwest watershed area (SUSFORM-NOW)" was started on August 15, 2010 over a planned cooperation period of five years.

SUSFORM-NOW has been implemented with an aim to achieve conditions where participatory forest management and livelihood development are mutually sustainable in the pilot sites. In January 2013, two and half year after the commencement of the Project, a mid-term review of the Project was conducted and it was decided to integrate outputs of the technical cooperation project "Dien Bien REDD+ Pilot Project", which had been implemented since April 2012, into the Project. Accordingly, the project objective was revised as "Participatory forest management and livelihood development are promoted (in the project pilot sites) through the implementation of the PRAP<sup>1</sup>." As of March 2013, pilot activities relating to the forest management and livelihood development are being launched at seven sites under the Project.

#### 1.2 The objective of the livelihood development component

"The Livelihood Development Component (LDC)" aims to undertake activities mainly relating to the livelihood development in the Activities corresponding to Output 1 and Output 2 of SUSFORM-NOW, thereby contributing to achievement of the project objective.

The figure below shows the original Project Design Matrix (PDM) of SUSFORM-NOW and the work expected under the JPT-LDC. The activities performed under the JPT-LDC correspond to the Activities 1-3 to 1-7 and 2-1 to 2-4, which are highlighted in red.

<sup>&</sup>lt;sup>1</sup> PRAP stands for REDD+ Action Plan.

The implementation period of the JPT-LDC activities was about one and one-half years from October 2011 to March 2013, which falls within the project cooperation period from August 2010 to August 2015.

Pilot activities under SUSFORM-NOW were planned to be carried out in two phases: the first phase in the initial two years and the second phase in the subsequent three years. JPT-LDC plans to support implementation of pilot activities scheduled during the first phase of SUSFORM-NOW. It was tasked to continuously support implementation of pilot activities at six sites, which had been launched by the short-term expert for the livelihood development work assigned under SUSFORM-NOW; to assist in preparing and implementation of the livelihoods development plan (LDP) of the 2012 Annual Plan of Operation (APO) at seven pilot sites; and based on the activities performed so far, to assist in the preparation and implementation of the LDP of the 2013 APO; and to support the mid-term review.



Figure 1-1: Original PDM of SUSFORM-NOW and the Activities corresponding to the JPT-LDC

## 2 Description of Activities of JPT-LDC

#### 2.1 Workflow chart

In accordance with the overall workflow chart shown in Appendix 1, the activities conducted by JPT-LDC from October 12, 2011 to March 15, 2013 are described as Work Items from (1) to (13).

#### 2.2 Work Item (1): Preparation of the inception report

Prior to the work in Vietnam, an inception report was prepared. The inception report clarifies the following points such as: the objective of the JPT-LDC's activities; the position that it takes in the Project; approaches and methodologies; implementation schedule and reports to be prepared; and assignment schedule of experts. The work in Vietnam started on October 13, 2011. Comments from the C/P on t he inception report include the importance of carrying out practical livelihood development supporting activities; of developing models that are easy for farmers to understand and adopt; and the necessity of changing farmers' perspectives through the implementation of the activities.

#### 2.3 Work Item (2): Study on feasibility and effects of introducing measures into pilot activities

Based on the analysis of the results of the market survey conducted by the local consultants and the study of potential products that could be marketable, the JPT-LDC organized orientation workshops at 9 villages among the whole pilot sites, the forest management plan (FMP) and LDP of which had been prepared with the assistance of SUSFORM-NOW, in the beginning of November 2011 to confirm villagers' needs. During the workshop, a list of potential livelihood development activities directly related to forest conservation were explained as an initial example, as shown in the table below. Pigs and cows are not included on the list because these animals have been already included in the activity list under the Most Immediate Activities (MIA).

Category	Potential activities to be supported	
Plant-based	Bamboo planting, rattan planting, fruit production, mushroom production, fodder grass production	
Animal-based	Black chicken, apiculture (wild honey), lac culture, wild bird breeding, tilapia culture	
Culture-based	Weaving & cross stitch, handicrafts, rattan products	
Small scale industry & technology	Traditional soil & water conservation, improved cooking stove production, biogas installation, handmade farm processing	

Table 2-1: A list of potential livelihood development activities introduced
at the orientation workshop

Forest management and livelihood development should be carried out through villagers' proactive initiatives and actions. Therefore, villagers' needs were clarified at first. In order to study activities that matched villager's needs and to select activities for support, the following basic principles were applied: economic aspect (including profitability and marketability), sustainability aspect (forest conservation, etc.) and equity aspect (equal opportunity and proportional distribution). Based on these three principles, the following steps were shown in order to explain them in a manner that villagers find easy to understand.

- Step 1: Clarification of villagers' needs
- Step 2: Nomination of candidate livelihood development activities to be supported from a potential list (examination of activities that match villagers' needs)
- Step 3: Selection of candidate products to be produced through respective pilot activities in accordance with the following criteria:
  - Existing knowledge about products and production methods (economic aspect)
  - Existence of markets (economic aspect)
  - Availability of raw materials, equipment, and production facilities (equity aspect)
  - Confirmation of financial capacities (equity aspect)

Step 4: Ranking of proposed pilot activities

Step 5: Preparation of a draft annual implementation plan

The livelihood development activity needs were confirmed at the respective pilot sites based on the results of discussions with villagers. An annual implementation plan (IP) was prepared.

Unit: No. of pilot activity types under the respective categor														ategories					
			Pilot sites																
	Categories of pilot activities	of Dien Bien Dong Distric					rict	t Dien Bien District				Ta Lend Commune and Dien Bien Phu City					nd	<b>m</b>	
No		Na I	Phat A	Tia Ghenh C	Hu Mu	uoi 1a A	Ha Tro	ng o B	Phi Ba	eng an	S: Luc	ai ong	Na I	Nghe	Ke N	lenh	Phi Bi	eng ua	Total
		F	Μ	Total	F	Μ	F	Μ	F	Μ	F	Μ	F	Μ	F	Μ	F	Μ	
Ι	Agricultural products, fruit tree planting	0	2	1	2	3	1	2	3	3	3	1	3	4	4	7	1	1	41
Π	Animal-raising	2	2	3	2	3	5	5	2	3	2	4	3	2	4	4	3	3	52
III	Technical improvement	1	0	0	1	1	2	0	1	1	2	2	0	1	0	1	0	1	14
IV	Traditional weaving	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
Tota	1	3	4	4	5	7	8	7	7	7	7	7	6	7	8	12	4	5	108

Table 2-2: Summary of needs on pilot activities at respective pilot sites

Note: F=Female, M=Male

Through the orientation workshop, it was found that villagers were highly interested in animal-raising operations and plantings of agricultural products and fruit trees. Their primary interests were in pig- and chicken-raising practices, fish farming and planting of fruit trees. Among animal-raising operations, villagers in some villages showed their interests in cows and porcupines. However, the market potential of porcupines and the profitability of cows have been questioned. These options are considered to be inferior to other options from an economic viewpoint (marketability and profitability). Pig- and chicken-raising operations, and fish farming can be appropriate from economic as w ell as equity viewpoints; however, the sustainability aspect (contribution to sustainable forest management) of these activities is not necessarily high if these activities are considered independently (i.e., without combining other activities). In particular, the volume of firewood consumed by cooking pig feed is significant. Based on the results of these orientation workshops, a series of "village workshops" were organized at the respective pilot sites between December 2011 and January 2012.

2.4 Work Item (3): Sharing and discussions on the results among the concerned personnel of the Project and Work Item (4): Incorporation of results of the study and discussions into 2012 Annual Plan of Operations

In order to present and hold discussions with the project-related personnel at the Joint Coordinating Committee (JCC) held on December 22, 2011, potential pilot activities were reflected in Activity 1-5 of Annual Plan of Operation 2012 as study results and discussions at pilot sites. APO 2012 was approved at the JCC.

#### Potential Pilot Activities in 2012 under consideration

In addition to the activities proposed in the table below, the following were applied to all the pilot sites: fodder grass/fruit tree planting, contour line planting, organic farming with vegetable cultivation and introduction of improved cooking stoves.

Pilot Site	Potential Livelihood Development Activities						
Sai Luong	– Bamboo plantings, pig, poultry, fish farming.						
Phieng Ban	– Mushroom, pig, poultry, fish farming						
Hang Tro B	- Pig, poultry, fish farming, seed lac						
Na Phat A	– Poultry, fish farming						
Tia Ghenh C	– Pig, poultry, seed lac						
Huoi Mua A	- Bamboo plantings, poultry, fish farming, seed lac						
Ta Leng (Na Nghe, Ke Nenh, and Phieng Bua villages)	- Bamboo plantings, mushroom, pig, poultry, fish farming						

Table 2-3: Potential pilot activities proposed in 2012

#### 2.5 Work Item (5): Capacity Development of C/P

For LDC pilot activity implementation, JPT-LDC has continued its trials to select more viable pilot activities and has continued to assist their implementation in accordance with the terms of reference (TOR). JPT-LDC has continued its assistance to implement pilot activities by villagers through its guidance to the C/P, support to the C/P in guiding villagers, assistance of ward and commune people's committee (W/CPC) staff, etc. in extending technical instructions to villagers under the supervision and guidance of the C/P. If the C/P and W/CPC staff had difficulty providing technical advice to villagers, staff members and experts were mobilized in consultation with the C/P. The source of staff and experts were Government offices at province, city and district levels, suppliers, a n etwork of biogas masons, universities and research institutes.

The following section describes the guidance and support to the C/P in terms of planning, implementation of pilot activities, training courses and study tours conducted as part of the pilot activity implementation assistance.

#### 2.5.1 Assignment of C/P

The C/P originally consisted of members of the provincial project management unit (PPMU) at a provincial level and the city/district project management units (C/DPMUs) at a city and a district level who formed part of the executing agencies. The total number of the C/P was originally 22. T he importance of ward- and commune-level staff participation, and coordination at city and district levels was later highlighted as one of the outcomes of the seminar workshop on the forest management and livelihood development activities held in October 2012. As a result, the number of C/P was increased to 30 in December 2013.

Level/organization	C/P (PPC's Decision on July 8, 2011)	C/P (PPC's Decision on December 19, 2012)
Dien Bien province	8	7
Dien Bien district	5	5
Nua Ngam commune	0	1
Thanh Anh commune	0	1
Dien Bien Dong district	5	5
Keo Lom commune	0	1
Na Son commune	0	1
Pu Nhi commune	0	1
Dien Bien Phu city	4	5
Ta Leng commune	0	1
Noong Bua ward	0	1
Nam Thanh ward	0	1
Total	22	30

Table 2-4: Assignment of the C/P

- 2.5.2 Guidance and capacity development of the C/P in preparing for the annual implementation plan of the livelihood development plan
- (1) Guidance and capacity development in preparing for 2012 annual IP of livelihood development plan

Following the orientation workshop conducted at respective pilot sites in the beginning of November 2011, village workshops were organized at each of the pilot sites. At the village workshops, livelihood development activities were selected for implementation. Households that were willing to participate in the respective activities were identified, and the implementation schedule of the activities was discussed with consideration for seasonality. Based on capacity development of the C/P through OJT and training of trainers (ToT), the C/P were assigned to facilitate the workshops.



Photo 2-1: C/P that facilitate village workshops

A sample of results from the Sai Luong village workshop is shown below. In selecting activities, participants were requested to choose only one type of animal (pig, chicken or fish) from an equity viewpoint.<sup>2</sup> They were free to choose activities other than animal-raising operations.

 $<sup>^2</sup>$  In order to provide villagers with equal opportunities and to let them feel a sense of being equally treated, each household was asked to select one type of high demand animal per household.

Annual implementation plan of livelihood development plan at Sai Luong village (example)

At Sai Luong village, selection was made among 45 households that participated in the workshop. It had been planned to provide Mong Cai sows to the villagers who selected pigraising operations under "Most Immediate Activities (MIA)" in February 2012.

		No.			2012								
LDC act	tivities	of HH	1	2	3	4	5	6	7	8	9	10-12	
	Pig	15	Followi	ng implei	nentati	on plan o	f MIA						
Livestock- raising	Chicken	17			Receiv	ving	Raising	and mor	nitoring				
operations	Fish	13	Preparat ponds	tion of	Receiv finger	ving lings	Raising	Raising and monitoring					
Improved stov	cooking	45	Training worksho product	g op and ion									
Planting o gras	f fodder ss	3		Soil preparat and train worksho	ion ning op	Planting	Tending	ding and harvesting					
Planting of	fbamboo	7		Soil preparat	tion	Planting		Tending	g and mo	nitorin	g		
Planting of	fruit trees	11			Soil prepar	ation	Planting	Tending	g and mo	nitorin	g		
Organic v farm	egetable ing	12	Soil pre and plan	paration nting	Tendir enjoyi	ng and ng							
Contour line planting		45		Training soil preparat	g and	Planting	5	Tendin	g contou	r lines			
Biogas fa	acilities	12		Training construct	g and stion								
Mushr cultiva	room ation	0											

Table 2-5: Annual implementation plan in 2012

Note: Types of chicken are local and black chicken varieties while types of fish are carp, amur, mud carp, etc. Types of vegetables are cabbage and cauliflower, etc. A type of fruit is banana.

(2) Guidance and capacity development of the C/P in preparing for 2013 annual IP of livelihood development plan

During the period from June to July 2012, assistance with preparation workshops on the FMP and LDP was provided at Ta Leng site. Support from JPT-LDC formed part of the follow-up activity from the Japan study tour. Assistance with review of the 2012 annual IP and preparation of 2013 IP was provided starting in November 2012.

2.5.3 Guidance and capacity development of the C/P in conducting pilot activities

2.5.3.1 Animal raising activities (cows, pigs, chickens and fish)

JPT-LDC took over the MIA supported under the Project. Animal delivery was undertaken following the schedule below; and training courses on methods to raise animals and for construction of animal sheds, etc. were organized.

No	Pilot site	Animals	No. of animals delivered	No. of HH received	No. of animals received per HH	Delivery date
1	Huoi Mua A	Cows	6	6	1	November 30, 2011
2	Hang Tro B	Cows	6	6	1	December 1, 2011
3	Na Phat A	Cross hogs	25	5	5	December 2, 2011
4	Sai Luong	Mong Cai sows	12	12	1 Note	February 29, 2012
5	Tia Ghenh C	Mong Cai sows	12	12	1	February 20, 2012
6	Phieng Ban	Sow (F1)	10	10	1	December 7, 2011

Table 2-6: Delivery of animals under MIA

Note: At Sai Luong, villagers originally requested two sows per household. Because it was found questionable to ensure sufficient feed and space for two sows, JPT-LDC proposed to IG members that each household would be provided with one sow for the time being.

JPT-LDC assisted the C/P to guide W/CPC staff and villagers to prepare the 2012 annual implementation plan for livelihood development activities. Animals (pigs, chicks and fingerlings) were delivered to requesting interest groups (IGs) involved in preparatory discussions. The following table summarizes the results of the delivery of animals including those delivered under the MIA.

	District/city	Bien		Dien Bi	en Dong		D	ien Bien P	'hu	Total	
Commune/ward		Nua Ngam	Thanh An	Keo Lom		Na Son	Pu Nhi	Ta Leng		Noong Bua	
Village		Sai Luong	Phieng Ban	Tia Ghenh C	Huoi Mua A	Na Phat A	Hang Tro B	Na Nghe	Ke Nenh	Phieng Bua	нн
Cow		-	-	-	(6)	-	(6)	-	-	-	(12)
Pig	g-raising	(12)	(10)+5	(12)	5	(5)	3	4	4	2	(39)+23
	Farrowing sow		(10)+5							2	(10)+7
	Mong Cai sow	(12)		(12)	5	-	3	4	4	-	(24)+16
	Cross hog					(5)					(5)
Ch	nicks	17	9	9	3	5	4	4	5	4	60
Fi	ngerlings	9	3	-	3	9	6	9	1	12	52

Table 2-7: Results of delivery of animals

Note: The number in the brackets shows the number of households that received animals under the MIA. As of February 2013, out of ten (10) sows delivered under the MIA at Phieng Ban village, two (2) sows have been transferred to the second recipient group. In case of Sai Luong, two piglets have been transferred to the second generation. Likewise, four (4) cows at Huoi Mua A and two (2) cows at Hang Tro B have been transferred to the second recipient group. Pigs at five (5) households of Na Phat A have been sold and instead, four (4) cows were purchased by the IG.

As for cow and pig, the Project provided a certain amount of seed animals to the IG (i.e. In case of pig IG, the Project provided the group with the number of pigs that is about one-third (1/3) of the IG members), and requested to rotate the animals within the group. The number of chicks was decided considering the capacity of the households, varying from 30 to 50 chicks per household. About fish-raising activity, the fingerings were provided for the IG members who could fulfill the pre-conditions for starting activity. The maximum size of a pond was determined as 1000m<sup>2</sup> and 2 fingerings/m<sup>2</sup> were provided. Depending on the livestock, some feed and medicines were also provided for the starting period of the activity. The members of chicken- and fish-raising IGs were also requested to follow the basic revolving concept applied for cow- and pig-raising IG, which requires the IG members to return the certain amount of the benefits to the IG fund.

#### (1) Preparatory meeting with the IG for procurement of animals

At six (6) villages (Huoi Mua A, Hang Tro B, Phieng Ban, Na Nghe, Ke Nenh and Phieng Bua), JPT-LDC has continued to assist new or additional procurement of pigs. Because the IG members had limited understanding of the technical aspects of pig-raising and pig revolving systems, information and assistance was provide as part of the procurement support to facilitate meetings for confirmation of internal regulations (IRs). Some IGs found it difficult to procure sufficient feed and switched from the hybrid variety to Mong Cai variety while others decided to withdraw their participation in the activities after learning that they had to return the initial amount supported under the revolving system. As they deepened their understanding of animal-raising techniques and their responsibilities as IG members, changes have been observed in their requests. Based on discussions on the number of animals to be procured, IRs of the respective IGs have been revised.

In terms of assistance to chicken-raising practice, capacity assessment of IG members was conducted for those who wished to receive chicks so they themselves could choose assistance packages after assessing their own capacity to raise chickens. In conducting the assessment, explanation was once again given to them that the assistance for chicks would be provided on the premise that they would operate a revolving system. Some IG members did not accept this. Consequently, the number of households who wished to have chicks delivered has decreased in comparison to the number of beneficiary households initially expected. Later, assistance packages were designed consisting of chicks (30 chicks for package 1, 40 chicks for package 2 and 50 chicks for package 3), and corresponding amounts of concentrated feed and vaccinations, etc. After having explained these packages to farmers, the number of chicks to be raised was determined in accordance with their capacity.

#### (2) Delivery of animals

In November 2012, a total of 23 pigs were delivered: seven (7) hybrid sows, (five (5) pigs for Phieng Ban and two (2) pigs for Phieng Bua) and 16 Mong Cai sows, (five (5) pigs for Huoi Mua A, four (4) pigs for Na Nghe, four (4) pigs for Ke Nenh, and three (3) pigs for Hang Tro B). Staff members from veterinary stations at city/district offices and ward/commune offices were usually present at the time of delivery. According to the contract with the suppliers, the guarantee period for the lives of pigs was set at 30 days after the delivery and payment was supposed to be made after confirmation of pregnancy of sows.



Photo 2-2: Delivery of Mong Cai pigs in February 2012

Chicks were initially delivered to four villages in

November 2012. However, because it was later suspected that some chicks had been infected with bird flu, it was decided to destroy all the chicks delivered to the four (4) villages and to suspend delivery of the remainder after having discussed with the C/P. In the beginning of December 2012, the supplier procured one-day old chicks and raised them at their farms for about one month. They delivered one-month old chicks on January 4 to 7, 2013 to all the villages except Sai Luong, where it was suspected that the outbreak of bird flu might have taken place, and on January 22 to Sai Luong. Staff of commune-and district-level offices assisted in the delivery of chicks. The number of chicks delivered totaled 2,460 for 60 households. Because the time before and after Tet (Lunar New Year) is the coldest time of year, chicks were vaccinated for bird flu in advance and the guarantee was extended over a longer period of time (until chicks are 3 months old).

District/city	Dien	Bien		Dien Bien Dong				Dien Bien Phu			
Commune/ward	Nua Ngam	Thanh An	Keo I	Keo Lom Na Pu Son Nhi		Ta Leng		Noong Bua	Total		
Village	Sai Luong	Phieng Ban	Tia Ghenh C	Huoi Mua A	Na Phat A	Hang Tro B	Na Nghe	Na Ke P Nghe Nenh		Total	
No of households	17	9	9	3	5	4	4	5	4	60	
Quantity of chicks	510 <sup>Note</sup>	360	360	130	250	200	200	250	200	2,460	

Table 2-8: The number of HHs receiving chicks and number of chicks delivered (by village)

Note: At Sai Luong village, it was originally planned to deliver a total of 680 chicks to 17 households (40 chicks per household). Because some of the chicks being raised were crushed by accident at the supplier's farm, the number was decreased to 510 (30 chicks per household). Five households received black chickens instead of the yellow-leg chickens that had been initially intended.

As part of the assistance for fish-raising activities, fingerlings were delivered. The fingerlings were procured from a fish cooperative in Dien Bien district. In May 2012, representatives of IGs for each village had the opportunity to visit the cooperative and observe their fish-raising practice.

The delivery of fingerlings was made in the end of May 2012. Prior to the delivery of fingerlings, a JPT-LDC expert and a member of the fish cooperative confirmed the condition of the fish ponds and, based on the conditions, assisted delivery of fingerlings, fish feed and medicine.

District/city	Dien	Bien	Dien Bien Dong				Di			
Commune/ward	Nua Ngam	Thanh An	Keo I	.om	Na Son	Pu Nhi	u Ta Leng		Noong Bua	Total
Village	Sai Luong	Phieng Ban	Tia Ghenh C	Huoi Mua A	Na Phat A	Hang Tro B	Na Nghe	Ke Nenh	Phieng Bua	Totai
Total No. of HH that received fingerlings	9	3	-	3	9	6	9	1	12	52
Total Pond Area (m <sup>2</sup> )	4,300	1,900	-	1,400	5,350	2,800	9,000	1,000	5,000	30,750
Fingerling (unit)										
Grass carp	3,300	1,900	-	900	5,350	2,700	9,000	1,000	5,000	29,150
Common carp (V1 breed)	1,320	475	-	270	1,605	300	2,400	300	1,500	8,170
Major carp	0	475	-	90	535	1,200	1,050	100	500	3,950
Vietnamese silver carp	330	0	-	90	535	100	800	100	500	2,455
Taiwan genetic improved tilapia	2,250	950	-	450	2,675	1,600	4,250	500	2,500	15,175
Total	7,200	3,800	-	1,800	10,700	5,900	17,500	2,000	10,000	58,900
Mixed powder (Kg)	45	24	-	11	67	34	113	13	63	368
Fish medicine (packs)	30	12	-	9	36	18	54	6	30	195

Table 2-9: Number of HHs that received fingerlings and features of fingerlings delivered

Fish feed and medicine was offered with the aim to give farmers exposure to the appropriate type of fish feed to use and to methods to prevent diseases by mixing fish feed with medicine. In order to decrease the number of fingerlings that are likely to die due to sudden changes in their living environment, farmers were supported with fish feed sufficient for two weeks and medicine for three days. In the contract with the fish cooperative, the guarantee period was set at 21 days after the delivery in order to prepare for issues with the quality of fingerlings.

(3) Revolving system and internal regulations

Animals are delivered on the premise that those animals will be revolved among the IG members. Each IG agreed how to rotate animals in their IRs. For example, in the case of sows at Phieng Ban village, a mother pig is supposed to be transferred to the next household of the IG 40 days after the second litter.

An important example relating to changes in the IR was reported in the case of the death of a cow at Huoi Mua A. A female cow, delivered to Huoi Mua A as part of MIA, died in July 2012. The female cow had been prone to illness after giving a birth to a calf. The cow died from progression of weakness due to a d isease diagnosed as a chronic blood parasitic disease. According to the IR of the IG, farmers will not be responsible for repayment of the initial support if an animal dies due to reasons beyond their control. However, if proper care was not taken under controllable conditions, they will be liable for repayment of the amount corresponding to the initial support.

If the animals die due to reasons beyond their control, the farmers are free from debt; If any risks occur due to the reasons within their control (....), the HHs have to return the initial funding from the Project (Part of the IR of cow raising group in Huoi Mua A dated August 11, 2011).

Discussions were made between cow IG members from Huoi Mua A, the DPMU and the CPC chairman on this issue. After exchanging opinions, the IG members regarded lack of appropriate care by the farmer as problematic because the weakened mother cow would be sooner or later handed over to other members. As a result, they agreed to the following two points:

- (i) Request that the farmer return 20% of the value of the calf delivered by the cow that died (the value of the calf would be determined at the village meeting); and
- (ii) Make an effort to prevent similar cases from happening in the future.

The IG members decided to incorporate the following clause into the IR as a preventive measure in order to avoid reoccurrence of similar cases in future:

"When raising cows, the farmers are responsible for all vaccinations periodically as defined (every 6 month). In case of illness, the farmers are responsible for seeking, and for paying for, veterinary treatment. In the event the animal dies due to faults of the farmer, the farmer will return the funded amount." (Part of the IR of cow raising group in Huoi Mua A dated August 29, 2012)

#### (4) Animal raising training

Prior to delivery of animals, training courses were provided to villagers scheduled to receive animals at the respective pilot sites. The training courses were given by staff members of provincial and district offices, and by suppliers under the guidance of experts of JPT-LDC (suppliers were assigned to train on pig- and chicken-raising practices while a Center for Fishery staff member, under DARD, provided training on fish-raising practice).



#### (5) Outbreak of epidemics

Pigs delivered under MIA have died at Sai Luong and Tia Ghenh C villages since March

Photo 2-3: Training on chicken-raising

2012. Five (5) pigs in total, consisting of two (2) pigs at Sai Luong and three (3) pigs at Tia Ghenh C, have died.

After notification, a staff member in charge of the district veterinary station, the supplier and the JPT-LDC expert visited the sites and examined their conditions. Although no of ficial announcement was made, it was suspected that the cause of death could have been blue ear disease or other infectious disease. Therefore, to be on the safe side, the dead pigs were handled using appropriate methods for infectious disease.

As described earlier, on November 15, 2012, the first delivery of chicks (940 chicks in total) was made to four (4) villages. However, many chicks were confirmed dead on November 17. JPT-LDC paid an impromptu visit to the three (3) villages where deaths of chicks had been reported. Although no official announcement of a bird flu outbreak was made for communes where the pilot sites are located, JPT-LDC suspected that the chicks might have been infected with bird flu and decided to destroy chicks delivered to the four (4) villages and to suspend delivery of the remaining chicks after discussion with the C/P. The supplier bore the cost incurred to disposal of the chicks because the disposal took place during the guarantee period. After JPT-LDC had collected information from the Department of Animal Health under Dien Bien DARD and confirmed the end of the bird flu, it decided to assist procurement of new chicks immediately as part of continuous activities at villages, which were delivered in January 2013.

(6) Pig raising for meat purpose and change to cow raising (Case of Na Phat A)

At Na Phat A village, the IG raising pigs for meat changed from pigs to cows in June 2012 because of the higher cost of raising pigs. At Na Phat A, they planned to purchase a total of five (5) cows for the revolving system, but they have procured only four (4) cows so far (two (2) in August and another two (2) in September, 2012). As for the remaining cow, although one of the first recipient households sold pigs, he did not use the sales revenue from the pigs for the revolving system. Consequently, he could not purchase a new cow. In order to resolve the issue, meetings were held with the presence of the C/P from the DPMU. As a result, IG members confirmed that he would not be able to repay the amount and the CPC endorsed this confirmation.

2.5.3.2 Activities relating to agroforestry and home garden management

Results of the delivery of input relating to agroforestry and home garden management activities are shown below:

Di	District/city Dien B				Dien Bi	en Dong		D	Total		
Co	ommune/ward	Nua Ngam	Thanh An	Keo	Lom	Na Son	Pu Nhi	i Ta Leng		Noong Bua	
Village		Sai Luong	Phieng Ban	Tia Ghenh C	Huoi Mua A	Na Phat A	Hang Tro B	Na Ke Nghe Nenh		Phieng Bua	нн
Ve	egetable	53	64	28	37	24	28	51	40	46	371
	Spring-summer season	9	20	11	10	12	20	25	11	14	132
	Autumn-winter season	44	44	17	27	12	8	26	29	32	239
Fr	uit tree planting	47	39	39	33	33	26	42	52	29	340
Contour planting		1	1	-	1	-	1	-	1	-	5

Table 2-10: Results of the delivery of input relating to agroforestry activities

### (1) Home garden

The workshop on the home garden management was organized at Hang Tro B village in Dien Bien Dong District on January 11, 2012.



Experts made comments on soil quality, locational arrangements of fruit trees and vegetables, and measures to reduce soil erosion at home gardens of farmers visited

Photo 2-4: Guidance of production of compost

As many participants in home garden workshops were expected to be women, the duration of the workshop needed to be shortened to half a day. The guidance was simplified to a practical level as much as possible. Through organizing the workshop at Hang Tro B, it was learned that the majority of H'Mong female participants faced difficulty in both reading and understanding Vietnamese. Therefore, it was found necessary to provide a simplified visual guide when manuals and materials were prepared.



Following the workshop on home gardens held at Hang Tro B in January 2012, workshops

Photo 2-5: Morning glory at Phieng Bua village

were organized in February and March 2012 at other pilot sites and farmers were supported with vegetable seeds (pumpkins, okura, morning glory, etc.)

Based on the needs survey on winter vegetable seeds conducted in August 2012, types of vegetable species and the quantities to be distributed were determined and vegetable seeds were provided. Suitability for winter cultivation was examined for vegetable seeds requested by villagers. As a result, the following vegetable seeds were delivered: cabbage, kohlrabi, bean, broccoli, shallot, mustard green (five (5) types), coriander and lettuce.

(2) Fruit trees

Among fruit trees that could be cultivated at pilot sites, JPT-LDC selected 15 useful species that were likely to have market prospects. Out of the list of 15 species, interview-based surveys were conducted to clarify the possibility of procuring grafted seedlings. The quality of the seedlings was also examined. Based on the survey results, the following five (5) species were selected for introduction as recommended species at pilot sites: litchi, longan, guava, kaki and dracontomelon. In June 2012, about 3,500 seedlings arrived at sites, as originally planned, and nearly all the households who had wished to implement this activity completed seedling planting. Macadamia nuts were recommended by the PMU, however the ability to procure grafted seedlings was uncertain. Once the procurement possibility was confirmed, farmers at Ke Nenh village were supported with about 50 seedlings.

(3) Contour line cultivation

Since February 2012, a series of workshops has been organized to disseminate contour line cultivation technologies such as preparation and utilization of A-frames, methods to utilize composts and green matures, and so on. However, comments from village heads and farmers at the time of the monitoring activity revealed that a number of farmers had hesitated to introduce the contour line cultivation technologies on their agricultural lands after completion of planting cassava, etc.

During the monitoring visits in August 2012, meetings were held with villagers, who showed interests in the contour line model, through village heads. In September 2012, the first model was introduced at Ke Nenh village. The contour line cultivation model at the village is characterized with plantations of sunflower (*Tithonia diversifolia*) and tephrosia along contour lines and sweet potatoes between contour lines. Species of fruit trees planted are mango, avocado, pomelo, canarium and kaki.

During the monitoring visit in November 2012, it was found that the farmer had continued developing the contour line model. Sweet potatoes harvested from the site were already utilized for pig feed and human consumption. The farmer recognized the effectiveness of the model to a certain extent. The benefits include a faster growth of plants at the site than on sloping lands with traditional practices, no soil runoff from irrigation, and prevention of dryness with green mulch.

In order to examine the possibility of disseminating the contour line cultivation model to other pilot sites, JPT-LDC chose model sites at



Photo 2-6: Contour line cultivation model at Ke Nenh village

four villages by setting selection criteria based on altitude, slope, market access and ethnicity.

In selected households in January 2012, a contour line model layout was prepared and after Tet, placement of pegs was started by villagers using A-frame. From late February 2012, cuttings were prepared. Seedlings of fruit trees and trees were planted at the beginning of March 2012. In the process of these activities, technology transfer to commune-level extensionists was conducted for development and maintenance of the model and with the aim of establishing a basis to propagate the contour line cultivation model.

At Sai Luong village, Guatemala, which was provided by a supporting agency two (2) years ago, has been growing well. Villagers make use of the grass as animal fodder. Guatemala is planted on the sloping area, particularly along roadsides, also contributing to prevention of soil erosion. Hence, it was planned to introduce it to other villages as a hedge plant for the contour line model.

2.5.3.3 Improved cooking stoves

The table below summarizes the number of Lao-type improved cooking stoves delivered.

District/city	Dien	Bien		Dien Bi	en Dong		Di	Total		
Commune/ward	Nua Ngam	Thanh An	Keo Lom		Na Son	Pu Nhi	Ta Leng		Noong Bua	
Village	Sai Luong	Phieng Ban	Tia Ghenh C	Huoi Mua A	Na Phat A	Hang Tro B	Na Nghe	Ke Nenh	Phieng Bua	HH
Improved cooking stove	26	43	14	17	13	12	18	0	24	167

Table 2-11: Number of Lao-type stoves delivered

Prior to workshops scheduled in February 2012 at respective pilot sites, Lao-type improved cooking stoves were distributed to a total of 15 households at the three pilot sites on a trial basis in order to start monitoring usage and the consumption of firewood. In December 2011, a study tour in Son La Province was organized to gain first-hand knowledge on improved cooking stoves and biogas plants. Following these activities, a workshop on the introduction of improved cooking stoves (rocket stoves) was held at Tia Ghenh C.

Although the C/P participated in the workshop, the capacity development of the C/P through

ToT and/or OJT was yet to be realized. For the C/P, it was their first time learning these concepts. Therefore, it was considered a learning phase for the C/P for how the JPT-LDC supports villagers in implementing pilot activities. On the other hand, leaders at pilot sites, including village heads, regarded workshops as "a venue to learn" and proactively participated in the workshops from a viewpoint of guiding other villagers in the future. Roles of village leaders were found to be important in generating effective models when promoting pilot activities by villagers. As for the future channels of dissemination and instruction, the technology transfer from villager to villager was considered effective as was the one from the C/P to villager. As described in the implementation process manual, this channel was presented as a model of a technology transfer scheme among farmers.



Explanation of the overall program and rocket stoves



The rocket stove was completed within 30 minutes after the work had begun. After the completion, the interior parts were burnt for about two hours and dried to condition the stove for effective use





Participants produced the upper part of the combustion chamber of the rocket stove using a thermos bottle as a pattern (Photo on the upper left). Portable rocket stove (Photo on the upper right)

Photo 2-7: Rocket stove making

The production workshop on improved cooking stoves was organized at Tia Ghenh C on January 9 and 16, 2012 and rockets stoves were introduced. However, rocket stoves did not gain popularity as initially expected. Important reasons found were the relatively high moisture content of firewood and soot on the bottom of sauce pans. These factors tend to decrease combustion efficiency. Villagers do not remove soot from sauce pans. As a result, in some cases, use of rocket stoves required a longer cooking time than expected. On the other hand, villagers expressed high demand for Lao-type stoves.



Photo 2-8: Delivery of Lao-type stoves

JPT-LDC conducted an experiment to compare the degree of combustion efficiency and heat transfer among three-stone- stoves, Lao-type stoves, and rocket stoves.

The results showed that Lao-type stoves have lower effectiveness in soot and smoke reduction, which necessitates the introduction of cooking stoves that are superior to Lao-type stoves if negative human health impact is considered. However, the stoves demonstrated relatively high combustion efficiency, contributing to reduction of cooking time to a certain extent. Therefore, based on discussions with the C/P, it was decided to distribute Lao-type cooking stoves. Upon delivery of Lao-type stoves, 40,000 VND, one-fourth of the purchasing cost (160,000 VND per unit, including transport costs) was collected from each of the households that had received stoves and then pooled in village funds at the respective villages.

As of March 15, 2013, the cumulative number of households that received Lao-type cooking stoves was 167 (out of which, 16 households had been supported before the needs survey was conducted in August 2012).

The number of households that wished to receive Lao-type stoves in nine villages of the pilot sites was 209 households as of August 2012. Therefore, the number of households that have received stoves accounts for about 70% of the households that showed an interest at that time.

#### 2.5.3.4 Assistance to install biogas plants

Based on needs expressed at village workshops on preparation of IPs for 2012, assistance was extended for installation of biogas plants. Among different types of biogas plants, JPT-LDC has selected polyethylene-type (PE-type) and brick-type biogas plants because their construction materials are easily procured and villagers can construct these plants on their own. The cost required for construction of these types of plants is also taken into account. The table below summarizes the number of biogas plants installed.

Di	strict/city	Dien	Bien		Dien Bi	en Dong		Di	Total		
Commune/ward Village		Nua Ngam	Thanh An	Keo Lom		Na Son	Pu Nhi	Ta Leng		Noong Bua	
		Sai Luong	Phieng Ban	Tia Ghenh C		Na Phat A	Hang Tro B	Na Ke Nghe Nenh		Phieng Bua	нн
Bi	ogas	17	9	13	2	13	6	1	1	7	69
	Brick type	16	7	12	2	-	5	0	0	1	43
	PE-type	1	2	1	0	13	1	1	1	6	26

Table 2-12: Number of biogas plants installed

In January 2012, a workshop on construction of the first PE-type biogas plant was organized at Sai Luong village. In February 2012, construction of brick-type biogas plants was started at Tia Ghenh C and Sai Luong villages.

#### (1) Assistance to introduce PE-type biogas plant

The workshop on the introduction of a PE-type biogas plant was held over one and one-half days at Sai Luong village in Dien Bien District on January 12 and 13, 2012.



A small hole was created for a plastic gas outlet (photo on the upper left). Installation of an inlet pipe for manures and an outlet pipe for liquefied fertilizers (photo on the upper right)





After putting air into the polyethylene tube (PE-tube), the PE-tube was transferred to a trench Placement of the PE Tube.



A gas distribution tube was connected with the gas outlet



Installation of gas stoves inside the kitchen

Photo 2-9: Production process of PE-type biogas plant

## (2) Assistance to disseminate PE-type biogas plants

A project team was invited from Can Tho University in southern Vietnam and a workshop was organized on installation of a PE-type biogas plant at Phieng Bua village of Ta Leng site in March 2012. The project team has proactively promoted PE-type biogas plants in the south. In August 2012, the project team was invited once again and workshops were held at Na Phat A village in Dien Bien Dong district and at Phieng Bua village of Ta Leng site in order to train villagers as technical personnel capable of PE-type biogas installations.



Photo 2-10: Workshop on installation of PE-type biogas plant at Na Phat A

Nine (9) participants from six villages took part in the former workshop held at Phieng Bua in March 2012, while eight (8) villagers from three (3) villages and four (4) villagers from two (2) villages participated in the latter workshop at Na Phat A and Phieng Bua villages in August 2012, respectively. In the latter workshop, certificates were handed over to villagers who had successfully completed the training.

#### (3) Assistance to introduce brick-type biogas plants

Brick-type biogas plants have been promoted nationwide under the national biogas program of MARD; however, Dien Bien province only started its participation in the project in 2011. Biogas plants are still at the initial introductory stage. Benefits from biogas plants are not widely known at the pilot sites and demand for the plants is limited. Consequently, an institution to supply biogas plants has yet to be well established. In supporting installation of brick-type biogas plants, masons, who received training under the biogas program, have been introduced from the provincial biogas office under Dien Bien DARD. A mason was invited to do construction of biogas plants. The first



Photo 2-11: Preparation for installation of brick-type biogas plant at Tia Ghenh C

household to install a biogas plant runs a restaurant at Tia Ghenh C. The restaurant was considered to have high potential to attract guests who would then transmit relevant information to others, creating a ripple effect.

Later, it was considered effective to invite a more experienced mason and ask the relatively less experienced mason from Dien Bien province to work together with him to continue construction of brick-type biogas plants. Furthermore, it was also found effective to provide villagers who wish to receive technology transfer with relevant technologies. Therefore, an experienced mason was invited from Bac Ninh province through introduction by the provincial biogas office and was contracted for one month to assist construction of six (6) brick-type biogas plants.

#### (4) Assistance to disseminate biogas plants

Meanwhile, in order for villagers to directly observe advantages and disadvantages of the two types of biogas plants with their own eyes and to judge which one to install after fully understanding the differences, study tours were organized to Sai Luong village where the two types of biogas plants were installed (July, 2012). As a result of the study tours, farmers reached a level of understanding of the effects of biogas and a number of villagers expressed their willingness to install the plants.

In assisting installation of biogas plants, JPT-LDC supported villagers with construction materials worth up to four (4) million VND per plant<sup>3</sup>, regardless of which type was installed. The construction cost for the standard PE-type with 6 m<sup>2</sup> digester capacity is 2.5 million VND while construction cost for the standard brick-type with 11m<sup>3</sup> digester capacity is 11.5 million VND. If the amount exceeds the upper limit, beneficiary households need to bear the remaining cost.

<sup>&</sup>lt;sup>3</sup> In Dien Bien province, dissemination of brick-type biogas plants was at its initial stage and benefits from the plants were not well recognized. Subsequently, demand for installation of the plants was limited. Hence, based on discussions with the C/P and the provincial biogas office, this level of assistance was set. Reduction of the level of assistance is under consideration for when the benefits of biogas plants start to be known.

In order to improve villagers' capacity to procure construction materials such as bricks and cement as well as reduce the procurement workload, JPT-LDC offered guidance on the required volume of materials such as bricks, sand, cement and gravel as well as technical requirements by biogas digester capacity. For those households that wish to install biogas plants, JPT-LDC encouraged collaboration between three (3) households to secure quality materials as well as reduce transportation costs through a joint purchase. They were requested to get price quotations on materials from at least three (3) suppliers and look at a total cost of procurement of materials by taking into account not only material costs per se but also transportation costs of materials to their village.

With a view to further dissemination of biogas plants in the future, JPT-LDC supported the establishment of a system to construct and maintain biogas plants by villagers, through development of their capacity by holding training workshops. Having received cooperation from the provincial biogas project office as well as the national biogas program office, a workshop on construction and maintenance of biogas plants was organized from December 10 to 16, 2012 with participation of eight (8) villagers from villages at the pilot sites. The follow-up workshop was held in January 2013. Those trainees were certified as village masons and the masons list was prepared for further activity.

#### (5) Operating conditions of plants

With the cooperation of a technician from the provincial biogas office, monitoring was conducted on N ovember 6 and 7, 2012 at the pilot sites in order to examine the operating conditions (conditions of biogas being generated) at 24 brick-type biogas plants, installed as of October 2012. The results are shown in the table below. Out of 24 plants being monitored, 23 plants were rated as either "good" or "average". There is one plant evaluated as "bad".

Name of village	Conditions of biogas generation <sup>*</sup> (November 6 and 7, 2012)		
	Good	Average	Bad
Sai Luong	1	6	0
Phieng Ban	1	2	0
Tia Ghenh C	0	9	1
Hang Tro B	3	0	0
Phieng Bua	1	0	0
TOTAL	6	17	1

 Table 2-13: Monitoring results of brick-type biogas plants by a technician from the provincial biogas office

Note: \*

Good: A biogas plant is full of gas and the villager uses the gas for cooking almost all day long. Average: The villager use gas for cooking but sometime they use firewood. Bad: A plant generates a small volume of gas.

Later in the month, JPT-LDC conducted its own monitoring of the plants. The monitoring results were shown below.
Nome of village	Conditions of biogas generation <sup>*</sup> (End of November, 2012)					
Ivalle of village	Good	Average	Bad			
Sai Luong	6	0	1			
Phieng Ban	1	2	0			
Tia Ghenh C	1	7	2			
Hang Tro B	3	0	0			
Phieng Bua	1	0	0			
TOTAL	12	9	3			

Table 2-14: Monitoring results of brick-type biogas plants by JPT-LDC

Note: \*

Good: A biogas plant is full of gas and the villager uses the gas for cooking almost all day long. Average: The villager use gas for cooking but sometime they use firewood. Bad: A plant generates a small volume of gas.

According to the monitoring results of JPT-LDC, the three plants were rated "bad" due to following conditions: one plant at Tia Ghenh C faced shortage of pig feces due to the death of pigs; one plant at Sai Luong is short of water; the malfunction of the remaining plant at Tia Ghenh C resulted from an insufficient amount of gas stored inside the plant due to inadequate interior work, which led to an inability to ensure air-tightness. Repair work was carried out by a mason who received training under the workshop. The amount retained during the three-year guarantee period was used to cover the repair costs.

# 2.5.3.5 Livelihood development by utilizing locally available resources: Pe Mong wine and broom-making

In order to increase the added value of locally available resources, assistance was extended to activities of small-scale product processing groups. Both Pe Mong wine production and broom-making activities have been based on the livelihood development and life improvement action plans prepared by a C PC chairman and a CPC vice chairman, respectively, who participated in the study tour in Japan.

# (1) Pe Mong wine

In February 2012, an interview was conducted with the chairman of Keo Lom CPC about local wine (Pe Mong wine) made from maize, rice (ordinary rice and sticky rice) or cassava and produced by the H'Mong ethnic group. It was pointed out that because demand for wine from outside the village had been high, they would like to sell wine that had been produced locally for home consumption. Later, the chairman participated in the study tour in Japan and he prepared an action plan on wine production as an output of the study tour. Based on the action plan, a production group of Pe Mong wine was organized.

According to the interview results from the group, the core problem is that "a stable supply of good-quality wine has not been achieved".

For quality improvement, support was received from a Vietnamese expert in the field of brewing technology from the Food Industries Research Institute (FIRI), to which JICA once extended its technical cooperation. The following terms of reference (TOR) were provided to the expert:

<TOR for FIRI expert>

- 1) To carry out the quantitative analysis of the production process of Pe Mong wine;
- 2) To provide advice on qu ality improvement of Pe Mong wine in order to meet preferences of consumers in terms of tastes and fragrances; and

3) To provide advice on safe food processing.

The FIRI expert provided the production group with guidance on quality improvement in March, August and November 2012.

Based on discussions with the production group of Pe Mong wine and the C/P, assistance was extended for procurement of equipment required for wine production, marketing (logo and bottles) and improvement of production technologies.

1) Production plan of wine by members of the production group and the equipment supported by SUSFORM-NOW

Based on the requests for assistance to equipment by the production group, JPT-LDC supported the group with the equipment. Supports of equipment to each member are shown in the table below. The equipment was put for the property of the group.

Based on the requests for equipment assistance by the production group, JPT-LDC supported the group with the equipment. Equipment provided to each member is shown in the table below. The equipment is designated as group property.

	Input volume		Equipment currently owned		Equipment supported by SUSFORM-NOW		
Production group Note 1	(maize) scheduled from November 2012 to January 2013	Volume of input (maize) at hand	Sauce- pans	Plastic buckets for fermentation of input materials	Saucepans	Plastic buckets for fermentation of input materials (120L)	Plastic containers for distilled wine
Leader	560 kg	1,300kg	1 unit (70L)	2 units (80L) + 1 unit (160L)	1 (100L)+ 1 (70L)	3	1
Member	560 kg	1,000kg	Note	Note 1 unit (100L) +1 unit (160L)		3	1
Member	560 kg	650kg	Note	3 units (220L)		2	1
Member	560 kg	400kg	Note	0	1 (100L) + 1	2	1
Member	560 kg	500kg	Note	1 unit (100L) + 1 unit (220L)	(70L)	2	1

 Table 2-15: Production plan and relevant equipment provided by SUSFORM-NOW

Note 1: The members of the production group number five (5) as of November 2012.

Note 2: In addition to the equipment above, the group was supported with a water purification device.



Photo 2-12: Saucepan provided



Photo 2-13: Plastic buckets provided

# 2) Guidance for quality improvement

Quality improvement of wine was attempted by inviting a FIRI expert.



Examining the method to cook maize





Distillation process



In addition to the maize cooking method, the training covered methods for measuring the ethanol content and disposal of the initial five percent (5%) of the wine distilled.

Photo 2-14: Quality improvement of Pe Mong wine

## 3) Assistance on the marketing aspect

As described above, assistance in identifying suitable bottles and developing label design has been provided along with assistance with equipment and quality improvement of the wine. Logo design assistance was intended both to promotion to sales and to unite the group through collaboration among the members at the beginning stage of the group activities.



Note: A logo proposed by the production group (left) and a logo developed by JPT-LDC based on the proposal from the production group and the bottle with the label (right). A supplier in Dien Bien Phu city is able to supply a minimum lot of 100 bottles (1,500 VND/bottle).



JPT-LDC had discussions with the production group about introducing co-production but found it premature. In order to sell the products in the market, the group must be registered, receive an on-site inspection on their production process from the provincial health center, construct a workshop prior to the inspection, participate in a training course on the food safety and sanitation, and receive medical check-ups for the members. JPT-LDC plans to support the group in accordance with the progress of preparation and their needs. Before receiving an on-site inspection of the production process by the provincial health center, Pe Mong wine group constructed a workshop for production of wine in December 2012. The wine produced by the IG members is stored as of March 2013 at the workshop.

## (2) Broom-making

Broom-making has been proposed and promoted by the vice chairman of Nua Ngam CPC who participated in the study tour in Japan. At Sai Luong, seven (7) villagers who showed an interest in broom-making formed a production group in May 2012 under the guidance of the vice chairman. The vice chairman was of the opinion that since the members were not clear how to carry out a broom-making business, it would be good to visit production sites of other producers. There they could exchange ideas to develop an organizational structure, production process, production volume, quality management, and sales plan, and collaborate with stakeholders. JPT-LDC received a request to support a study tour to producers in Hoa Binh, and to provide training courses on production technologies and on sales promotion. The



Photo 2-15: Construction of a workshop was started (beginning of December 2012)



Photo 2-16: Workshop on broom-making at Sai Luong village after returning from the study tour in Hoa Binh

vice chairman found it appropriate to set the target market for brooms as Dien Bien province where the demand is expected to increase.

Based on the action plan drafted by the production group over the following two months, a market survey, a study tour in Hoa Binh (November 2012) and a technical training course were organized in the period between October and November 2012. At the mid-March 2013, the group plans to construct a workshop that can also store raw materials for brooms.

#### (3) Tofu making

A study tour and workshops on t ofu-making were organized at Dien Bien Phu city, Hang Tro B and Tia Ghenh C villagers in February 2012. I n order to substitute for tofu, which had been purchased from Dien Bien Phu, the sales were targeted at the market within the villages and communes. Representatives from the five (5) villages participated in the study tour and in the workshop in Dien Bien Phu city on the first day. On the second day at Hang Tro B village, 23 personnel participated in the workshop including



Photo 2-17: Workshop on Tofu-making

villagers from Sai Luong village. On the third day at Tia Ghenh C, 12 villagers took part in the event including one from Huoi Mua A and Na Phat A villages, respectively. One of the participants showed interest in tofu production but has yet to start a business.

# 2.5.3.6 Study tour

(1) Study tour in Son La province

The study tour in Son La province was organized on December 11, 2011 to let villagers gain hands-on knowledge and exchange views on improved cooking stoves and biogas plants. Various trial models of improved cooking stoves have been introduced under the project of Tay Bac University, while biogas facilities have been promoted under the collaboration between Son La Center for Agriculture Extension and Station for Agricultural Extension in Thuan Chau District. Village leaders from the nine pilot sites in Dien Bien province participated in the tour. The study tour was followed by the workshops on the improved cooking stoves and trial installation of the biogas facilities conducted in January 2012 at the pilot sites.





Digesters with the capacity of 12m<sup>3</sup> (photo on the left) and with the capacity of 6m<sup>3</sup> (photo on the right)



Households who had adopted improved cooking stoves were visited to review the stove's performance.

Photo 2-18: Study Tour in Son Lan Province

## (2) Study tour in Kon Tum

GLMi, a NGO under Global Link Management (GLM), is one of the joint ventures forming JPT-LDC, and has supported a project called "improvement, food safety for the community in Dakrowa commune, Kon Tum city". A study tour was conducted there from March 27 to 31, 2012 to review experience with the animal revolving system, contour line cultivation practice and home garden management, The total number of participants was 22, i ncluding the C/P, villagers and JPT-LDC (6 persons from JPT-LDC). The list of participants in the tour is shown in Appendix 6-3 (2) together with the schedule. Prior to the study tour, a preparatory meeting was held to narrow-down the issues to



Photo 2-19: Contour line cultivation model in Kom Tum

study during the tour in Kon Tum province. After the study tour, discussions were held on methods to rotate animals, etc.

## (3) Study Tour in Hoa Binh

The study tour was organized for the purpose of learning the production process and quality in need in markets, visiting a broom-producing and trading company (9-11th of November, 2012). All the IG members (7), vice chairman of the Nua Ngam CPC (1), extensionist (1), and the person in charge of farmer's Union at the CPC(1) participated in the tour. The study tour was organized following the 3 step-model proposed by the JPT-LDC namely; Step 1: Preparation, Step 2: Learning and Step 3: Application and follow-up. Accordingly, technical training was organized in the village soon after coming back from the study tour to enable the members to apply what they learnt in the study tour.

## 2.5.3.7 Dien Bien festival

In order to commemorate the 20<sup>th</sup> anniversary after Dien Bien Phu was awarded city status, a trade fair (called "Dien Bien Festival") was organized by Dien Bien Phu city. Support was provided in order to participate in the event. At the preparatory meeting, villagers were informed of the objective of participation: it was intended to provide them not only with opportunities to sell products but also with a venue to explore market needs and test methods for keeping financial records and inventories by experiencing face-to-face sales to customers.

The festival was scheduled for 11 days from April 21 to May 1, 2012, of which



Photo 2-20: Setting-up of SUSFORM-NOW booth

SUSFORM-NOW opened a booth for seven (7) days from April 22 to 28. The total sales revenues from the five (5) villages that participated in the event totaled 9.2 million VND. Pe Mong wine, rice cakes from Tia Ghenh C, and scarves from Phieng Bua villages accounted the largest share of the total sales revenue.

# 2.5.3.8 Activities for public relation

In order to enhance understanding of relevant personnel at the Government offices of the province, city and district, ward/commune staff members and villagers on livelihood development activities and to encourage their proactive engagement in SUSFORM-NOW, public relations (PR) activities were conducted, targeting personnel involved in the Project. Additional information was provided to those outside the Project to increase their interest in SUSFORM-NOW. The provision of information to non-project personnel was intended to create awareness of the personnel engaging in SUSFORM-NOW. These activities form part of the capacity development of the C/P together with the livelihood development activities.

Specifically, PR activities include: preparation of leaflets; issuance of LDC news; requests for logo designs from the public; preparation of the project calendar in collaboration with the Project office; introduction of project activities through media participation in the aforementioned Dien Bien Festival; and preparation of photo panels and a slide/video show.

## 1) Preparation of leaflets

Leaflets were produced in order to explain the relationship between SUSFORM-NOW and JPT-LDC and introduce the main activities planned under the JPT-LDC. Leaflets were prepared in the three languages (Japanese, English and Vietnamese).

## 2) Issuance of LDC News

LDC News was published to describe mainly the technical aspects of the LDC activities, targeted at villagers at pilot sites and the C/P. Its aim was to clearly convey points to be considered in implementing livelihood development activities by highlighting main messages with the use of photos and headlines as much as possible.

In addition, it is intended to inform DARD management of the most-updated information on the Project activities and to provide the C/P and extension workers with incentives to support pilot activities by recording their involvement in the activities. LDC News has 31 issues with the following titles and contents:

No	Code	Issuing Date	Title	Message
1	2.1.1.1	Nov 15, 2011	Meeting farmers' needs	Matching of needs
2	2.3.3.1	Nov 19, 2011	A trial to introduce improved stoves	Use of improved cooking stoves to reduce use of firewood
3	2.1.3.1	Nov 21, 2011	Final checks before delivery	Monitoring of daily health conditions of animals
4	2.1.1.1	Nov 30, 2011	Livelihood development activity	First delivery of animals under MIA, Coordination among concerned organizations
5	2.3.2.1	Dec 12, 2011	Livelihood development activities	Study tours to Son La province. Introduction to advantages of improved cooking stoves and biogas facilities.
6	1.1.3.1	Dec 19, 2011	Village Workshop	Meeting to discuss with villagers at pilot sites about contents of forest management and livelihood development activities. The following three main points are raised for discussions: types of activities to be implemented; interest group membership; and implementation schedules

Table 2-16: Summary of LDC News issued

No	Code	Issuing Date	Title	Message	
7	2.3.2.1	Dec 20, 2011	Searching for appropriate models	Introduction of rocket stoves, characterized by high combustion efficiency (advantages and internal structure of rocket stoves)	
8	2.1	Dec 24, 2011	The efforts bear fruit	Birth of a calf by a cow delivered under the MIA and a site visit of officials from JICA Vietnam Office	
9	2.3.2.1	Jan 9, 2012	Villagers teach villagers	Workshop on improved cooking stoves. Technology transfer scheme among farmers (Rural Master-Apprenticeship Scheme)	
10	2.6.2.1	Jan 11, 2012	Home garden management	Workshop on home garden management, improvement of soil quality	
11	2.5.3	Jan 13, 2012	Trial installation of biogas facilities	Workshop on installation of biogas facilities; advantage of biogas	
12	2.1.3.1	Jan 16, 2012	How to protect animals from cold weather?	Method to take care of animals during the Tet holidays	
13	2.3.4	Feb 6, 2012	Let's clean your cooking pans to save your forests!	Advantage of clearing soot.	
14	2.4	Feb 24, 2012	Let's make simple, tasty and nutritious tofu!	Food processing (tofu-making)	
15	2.5	Feb 27, 2012	Comparison of 2 types of biogas facilities	Advantages and disadvantages of two types of biogas plants	
16	2.6.4	Mar 17, 2012	Effective sowing techniques for vegetables	Effective ways to plant vegetables	
17	2.9	Mar 31, 2012	Study Tour in Kon Tum and model development	Learning experiences from Kon Tum study tour	
18	2.2.4	Apr 17, 2012	How to make a contour line.	Method to draw contour lines	
19	2.9	Apr 27, 2012	Approaches and experiences of livelihood development and life improvement in rural Japan	Livelihood development and life improvement in rural Japan	
20	2.9	May 8, 2012	An approach to mobilize villagers and their initiatives in livelihood development and life improvement	Enhancement of initiatives of villagers	
21	2.7.2	May 9, 2012	Fish pond preparation techniques	Pond preparation	
22	2.7.3	May 10, 2012	Techniques to release and care for fish	Fish-raising	
23.1	2.2	Jun 9 <sup>th</sup> 2012	General guidelines for planting fruit trees	Fruit tree planting	
23.2	2.2.5	Jul 20 <sup>th</sup> 2012	Late season longan	Planting of longan with its features	
23.3	2.2.5	Jul 17, 2012	Seedless persimmon	Planting of persimmon with its features	
23.4	2.2.4	May 27, 2012	Litchi	Planting of litchi with its features	
23.5	2.2.5	Jul 17, 2012	Taiwanese guava	Planting of guava with its features	
23.6	2.2.5	Jul 21, 2012	Dracontomelon	Planting of dracontomelon with its features	
24	2.8	May 18, 2012	Participation in Dien Bien Phu Festival	A trade fair experience	
25	2.2.6	Jun 28, 2012	Taking care of plants after   Fruit tree planting     planting   Fruit tree planting		
26	2.5	Jul 14, 2012	Biogas and the changes in Sai Luong Village	Features and impact of biogas plants	
27	2.9	Aug 17, 2012	Creating Livelihood Development and Forest Management Plans: Application of tools learned through the study tour in Japan	Preparation of plans	

No	Code	Issuing Date	Title	Message
28	2.7.3	Sep 17, 012	Managing Fish Pond Water Quality	Fish-raising method
29.1	2.6	Oct 24,12	Technical guidelines for cultivation of mustard greens	Cultivation method for mustard greens
29.2	2.6	Oct 24,2012	Technical guidelines for cultivation of broccoli	Cultivation method for broccoli
29.3	2.6	Oct 24,12	Technical guidelines for kohlrabi cultivation	Cultivation method for kohlrabi
29.4	2.6	Oct 24,2012	Technical guidelines for cabbage cultivation	Cultivation method for cabbage
29.5	2.6	Oct 24,2012	Guidelines for shallot cultivation	Cultivation method for shallots
29.6	2.6	Oct 24,2012	Technical guidelines for planting climbing bean	Cultivation method for climbing beans
30.1	2.7.3	Oct 26,2012	Disease signs and treatment of red spot disease	Treatment of red spot disease
30.2	2.7.3	Oct 26,2012	Disease signs and treatment of fungal disease	Treatment of fungal disease
30.3	2.7.3	Oct 26,2012	Disease signs and treatment of disease caused by anchor worm	Treatment of disease caused by anchor worm
30.4	2.7.3	Oct 26,2012	Disease signs and treatment of disease caused by Trichodina	Treatment of disease casued by Trichodina
30.5	2.7.3	Oct 26,2012	Disease signs and treatment of disease caused by Ichthyophthirius multifiliis	Treatment of disease caused by Ichthyophthirius multifiliis
30.6	2.7.3	Oct 26,2012	Disease signs and treatment of disease caused by reovius	Treatment of d isease caused by reovius
31	3.1	Nov 29,2012	Contour plowing	Contourline cultivation

Since LDC News deals particularly with technical issues, the news was aimed to form core contents of the technical manual that was scheduled to be prepared later.

# 3) Preparation of Logo

In order to enhance understanding of the Project and disseminate information on the Project, candidate designs for a project logo were solicited by e-mail. The following logo was selected and made public at the occasion of the JCC held on December 22, 2011.



# 4) Preparation of the project calendar

In collaboration with the project-related personnel, a calendar was produced as part of the public relations for the Project. The calendar shows various activities undertaken under the Project. It was distributed mainly to villagers at the pilot sites.

# 5) Introduction of Project activities through media

JPT-LDC carried over support of MIA, which had been launched under SUSFORM-NOW. At the end of November 2011, delivery of animals was started. On November 30, 2011, the first delivery date, a hand-over ceremony was organized at Huoi Moa A village, Keo Lom Commune, Dien Bien Dong District. Present at the ceremony were the Project Manager of the PPMU, the DPMU of Dien Bien Dong DPMU, the vice chairman of Keo Lom CPC and villagers. During the participants' speeches, the importance of inter-organizational coordination was stressed. The ceremony was covered by a number of media including a radio station (Voice of Vietnam), newspaper companies (Agriculture and rural newspaper, Tien Phong newspaper, etc.), and television stations (Channel 5, etc.). The ceremony was recorded by video as part of preparation for the technical manual and DVD to be attached to the manual.



A villager and the village head being interviewed (photos on the upper left and center, respectively), video shooting for the media coverage of delivery of cows (photo on the upper right)

Photo 2-21: Media shooting

# 6) Preparation of slide/video

A compact disk (CD) that contains the slides/video was prepared. The slides/video include 10 pilot activities: construction of biogas plants (brick-type and PE-type); distribution of fruit tree seedlings and vegetable seeds; quality improvement of Pe Mong wine; delivery of fingerings and fish raising; delivery of pigs and pig raising; delivery of cows; afforestation activities; and study tours.

# 2.6 Work item (6): Progress monitoring of livelihood development activities

# 1) Implementation of monitoring and feedback

Under the coordination of the Project, regular monthly meetings were organized between the C/P and experts to report results of the activities in the past month and discuss activities planned for the following month. In addition, Monitoring Volunteers (MVs) were mobilized at respective pilot sites through February 2013. Formation of a monitoring team (MT) was proposed at each pilot site, consisting of members of the PPMU and the C/DPMU, staff of the CPC, village heads, and representatives of villagers. However, during the first half of the JPT-LDC's activity, the MT did not function well. The reasons could be analyzed that; the numbers of PPMU and C/DPMU were limited considering the stretch of the pilot area; the available PMUs have concurrent works in their offices; the officers of the ward/communes, which are the closest administrative organization to the villages were less involved in the Project; allowance was not being paid to village heads for their monitoring works; and MVs were technically less capable of monitoring qualitative changes.

2) Revision of the monitoring method and use of the Government extension system

Because MTs at the respective pilot sites did not work as well as expected, arrangements were made, under the guidance of SUSFORM-NOW, for village heads to monitor and coordinate

implementation of pilot activities and submit monthly monitoring reports. In addition, based on the proposal of JPT-LDC, the role of assistant-to-village-head was added to the terms of reference for monitoring volunteers (MV). Furthermore, using the existing Government extension system, commune-level extensionists (animal-raising and non-animal farming) were requested to prepare extension reports on a regular basis. Since monitoring reports prepared by village heads vary in content and quality depending on village head, guidance has been provided to village heads in collaboration with experts of SUSFORM-NOW.

Villagers were also requested to monitor the conditions of animal-raising practices and the consumption volume of firewood before and after use of improved cooking stoves and biogas.

Figures below compare the monitoring system established prior to the commencement of JPT-LDC's activities and the current monitoring system (monitoring and reporting by village heads and extension services and reporting by extensionists). Under the current system, extensionists at city/district offices or ward/commune PC were requested to pay a regular visit to the pilot sites. Extension services of the extensionists and roles of monitoring by village heads are clearly defined with requirements of periodic reports.



Source: "Report & Proposal for the 2nd JCC, Dec, 2011" by SUSFORM-NOW

Figure 2-3: Monitoring system established before starting of JPT-LDC



Figure 2-4: Monitoring system by village heads at present



Figure 2-5: Extension & reporting system by extensionists at present

# 2.7 Work item (7): Preparation of progress reports

The first progress report was prepared and submitted to JICA on February 29, 2012 and the second one on December 31, 2012.

# 2.8 Work item (8): Study tour in Japan

The study tour in Japan was implemented based on a three-step study tour model (step 1 for preparation, step 2 for core training and step 3 for application).

1) Preparation of the study tour in Japan

As part of preparing for the study tour in Japan, discussions were started with the PPMU and C/D PMU on the study program and selection of candidates from the middle of November 2012. Being CPC staff or extensionists at city/district offices was added as one of the selection criteria for the candidates. As a result, one (1) staff member from Dien Bien Dong extension station and four (4) chairmen or vice chairmen of CPCs were selected as participants in the tour.

Before leaving for Japan, surveys such as a baseline survey were conducted by the candidates in order to grasp the existing conditions at the pilot sites.

2) Core training of the study tour in Japan

Although their arrival was delayed by one day due to severe storms, the study tour was carried out from afternoon on April 5 to 26, 2012 in approximate accordance with the original plan. The training was organized by J PT-LDC experts, with cooperation from the Rural Women. Empowerment and Life Improvement Association (WELI). The program and the list of participants are in Appendix 3.

The study tour focused on the life improvement approach that has been implemented in the development process of rural mountainous areas in Japan and also covered livelihood development and environmental conservation. The life improvement approach integrates hard (physical) and soft aspects to improve lives gradually by making use of readily-available and nearby resources and assist in sustainable development. In the context of SUSFORM-NOW, this is interpreted as follows: unless capacities and self-reliance of villagers, who are main actors for forest management and livelihood development activities, are enhanced, it will be difficult for them to achieve better lives. If only hard aspects have been improved but soft aspects such as capacity, ways of thinking and behavioral patterns of villagers, who are actively engaged in operation and maintenance, have not been changed and if their sense of self-reliance has not been enhanced, will be difficult for them to achieve better lives for them to achieve better lives and sustainable development of

local areas. In order to improve capacities and self-reliance of villagers, the training placed special importance on democratic group management and nurture of group leaders in the life improvement approach.

During the on-site visits, the focus was on: roles of Government offices in a recycle project of garbage at Ogawa town in Saitama prefecture; roles of Government offices in environmental conservation and rural development; and on group activities of the local people in the rural development at Nishikata town in Tochigi prefecture. These on-site visits provided



Photo 2-22: Visit to an agricultural product processing factory in Tochigi prefecture

participants with an opportunity to think of the importance of local initiative by people in rural development and the role of Government offices in supporting their activities. At Nakakasuo of Kanuma city, participants viewed a case where the local people reviewed local resources with survey mapping and situation analysis and implemented environmental conservation and development of local areas. Based on this case, they exercised preparation of a vision for better rural development by local people and preparation of an action plan for improvement. Through these practical exercises, they were able to experience the preparation and implementation of a plan to make effective use of local resources and enhance initiatives of the local people.

When preparing a livelihood development and life improvement action plan conducted in the last week of the study tour, participants were divided into the four groups to prepare action plans at the four villages in the four communes of pilot sites. The following table shows the themes of the draft action plans prepared during the study tour in Japan.

No.	Name of Village	Theme of action plan (draft)
1	Na Nghe (Ta Leng Commune)	Plan to strengthen cooperation for improvement of lives and development of production
2	Sai Luong (Nua Ngam Commune)	Plan to utilize Chit grasses for life improvement (broom-making)
3	Tia Ghenh C (Keo Lom Commune)	Plan to organize production cooperative to produce Pe Mong wine
4	Na Phat A (Na Son Commune)	Plan to develop production and improve lives through strengthening solidarities and cooperation

Table 2-17: Themes of the action plans (draft) prepared during the study tour in Japan

# 3) Experience-sharing of the results of the study tour in Japan

After returning to the country, participants held an explanatory meeting at villages. In the case of Pe Mong wine and broom-making, they assisted in the formation of production groups and conducted follow-up activities.

At the presentation to the PMUs on June 30, 2012, each group outlined their draft action plan and reported progress of their implementation. Based on the comments from participants, they revised their action plan and proceeded to implement it.

- 2.9 Work item (9): Preparation and revision of a technical manual to disseminate mutually-sustainable approaches, which will balance participatory forest management and livelihood development of villagers
- (1) Preparation of a technical manual

In order to disseminate mutually-sustainable approaches, which will balance participatory forest management and livelihood development of the villagers, during the 2<sup>nd</sup> phase of SUSFORM-NOW, at echnical manual has been prepared by setting commune-level staff members as its target users based on the experiences and lessons learned from implementation of SUSFORM-NOW over the last two (2) years. The manual includes topics such as an implementation process of pilot activities and points to be considered.

(2) Revision of the Implementation Process Manual (technical manual)

Implementation Process Manual was made for the purpose of extending the activities in the later-half of the Project, by following the approaches applied during the JPT-LDC's activity period. The target users of the manual are ward/commune facilitators and extensionists. The procedures and major points to keep in mind in implementing further activities are explained in

the manual, with taking the lessons and experiences through the 2 years of the Project implementation. At the time of the seminar workshop on the forest management and livelihood development and meetings held before and after the seminar, a number of points were raised to improve the manual. Those points were incorporated in the manual by the end of December 2012. Appendix 6-6(2) shows the points that were raised at the meeting with PMUs after the seminar workshop. Further revision of the manual was continued up to the beginning of March 2013.

Implementation Process Manual consists of the following Volume 1 and Volume 2.

Volume 1: Planning and facilitation Annex 1: Planning Concept and Facilitation Skills Annex 2: Plan Formulation Volume 2: Implementing process of selected pilot activities

Volume 1 mainly describes the preparation for planning, planning procedures and facilitation skills, together with the monitoring procedures, and the details of FMP and LDP planning procedures are explained in the annex 1 and 2<sup>4</sup>. Volume 2 introduces the implementation procedures categorizing the activities into 5 steps. The below figure shows the composition of the manuals and the timing of its use, with referring to the activity stages.

<sup>&</sup>lt;sup>4</sup> Those annexes were made by the C/P with the support of SUSFORM-NOW, and are called "FMP & LDP Formulation manual". It was decided that those manuals are attached to the Volume 1 of the implementation process manual.



Figure 2-6: Composition of the manuals & the timing of its use, referring to the activity stages

# (3) Training workshop on utilization of the technical manual

Through implementation assistance of pilot activities, JPT-LDC has come to realize that it is important to promote good coordination with commune-level PCs (including both commune and wards), which are administrative bodies located closest to villages, and smooth coordination and proactive behavior of village leaders in front of other villagers in order to support implementation.

For the purpose of developing the capacity of commune-level PC staff, a training workshop was organized for two (2) days in November 2012 using the technical manual. The training workshop covered a variety of topics which should be addressed prior to implementation of pilot activities including: development of interest groups at pilot sites; assistance in organizational development tailored to their development status; introduction of an animal revolving system; internal regulations that have been practiced at the pilot sites, cost-benefit analysis through preparation of a simple income statement. The participants generally gave good ratings to the training workshop in terms of matching the contents with their needs. However, they pointed out, as areas to improve, that the training period was too short to cover the content (they proposed a three (3)- to four (4)-day workshop instead of a two (2)-day workshop). Based on discussions with the C/P, a follow-up training workshop was held in January 2013.

2.10 Work item (10): Assistance of policy and institutional aspects in order to expand pilot sites and realize sustainable development of the activities

Knowledge, lessons and issues learned through implementation of the activities under JPT-LDC activities have been described in Chapter 4 of this report. Recommendations were made at the seminar workshop held on October 4 and 5, 2012 for expansion of pilot sites and sustainable development of pilot activities, together with experts of SUSFORM-NOW. The recommendations were discussed at the seminar workshop. Appendix 6-6(2) shows recommendations (final draft) and discussions on institutional and policy aspects of the recommendations.

- 2.11 Work item (11): Seminar workshop on results of the forest management and livelihood development activities
- (1) Organization of a seminar workshop

The outline of the seminar workshop on forest management and livelihood development is shown below.

Date	October 4th and 5th, 2012				
Venue	Muong Thanh hotel in Dien Bien Phu city				
Participants	61 attendees on October 4 and 51 attendees on October 5, 2012 (JCC members, PPMU, C/D PMU, representatives of communes, village heads, heads of IGs (in some cases village heads assume the position of heads of IGs)), experts				
Workshop objective	The workshop aimed to examine approaches and preliminary results of forest management and livelihood development activities during the 1st phase of the Project in order to draw lessons for the 2nd phase. In the process, a draft FMP• LDP Formulation manual and a draft Implementation Process Manual, prepared by referring to the activities during the 1st phase, will be presented for comments and suggestions before finalization, with a view to utilizing them during and after the 2 <sup>nd</sup> phase.				
Program	<ul> <li>Review of pilot activity implementation results and lessons learned</li> <li>Introduction and review of draft Implementation Process Manual, discussion of comments and suggestions for improvement</li> <li>Visit to a pilot site</li> <li>Discussions on institutional and political recommendations based on the results of the pilot activities</li> </ul>				
Handouts	Workshop objective, villagers' presentation of pilot activity implementation results and lessons learned, draft FMP & LDP Formulation Manual, draft Implementation Process Manual, draft institutional and policy recommendations				
Materials displayed	Photo panels featuring pilot activities, contour line cultivation model, leaflets of SUSFORM-NOW including LDC leaflets, LDC News				

Table 2-18: Outline of the seminar workshop

Date	AM/ PM	Time	Content		
Day 1		7:30-8:00	Registration		
	8:00-8:10		Opening speech Introduction of the workshop and participants,		
8:1 AM		8:10-8:20	Introduction on workshop objectives, outline of the workshop program including the presentation outline of pilot sites by villagers, expected outputs from the workshop		
		8:30-10:20	Presentation of results of activities at pilot sites, questions & answers		
		10:20-10-50	Coffee break		
	10:50-11:30 Presentation of results of activities at pilot sites questions & answers Summary of lessons learned and discussions				
	13:45-14:30 Introduction of		Introduction of draft Implementing Process Manual		
PM 14:30-15:30 Group discussions: Group 1: Planning and pre Group 2: Facilitation of ca Group 3: Pilot activities (L Group 4: Pilot activities (L Group 5: Pilot activities (L		14:30-15:30	Group discussions: Group 1: Planning and preparation Group 2: Facilitation of capacity development of villagers and M & E Group 3: Pilot activities (FMP) Group 4: Pilot activities (LDP 1) Group5: Pilot activities (LDP 2)		
		15:30-15:45	Coffee break		
		15:45-17:00	Preparation for the presentation of discussion results on the manual Video/slide show of pilot activities		
	AM	7:30-11:00	Visit to Phieng Ban Biogas (brick and PE-types)/pig raising/fish raising/fruit seedlings/home garden/chicken shed/afforestation		
Day 2		13:45-15:00	Presentation of discussion results on the manual		
	PM	15:00-15:30	Coffee break		
		15:30-17:00	Discussions on political and institutional issues		

 Table 2-19: Seminar workshop program on forest management & livelihoods development (actual)

# (2) Follow-up activities of the seminar workshop

As part of follow-up activities of the seminar workshop, the technical manual was revised and in-class as well as on-the-job training was organized for commune-level PC staff in order to promote use of the manual.



Site visit to observe planting and other pilot activities in Phieng Ban village during the seminar workshop

Photo 2-23: Site visit of pilot activities

# 3 Achievement of activities supported by JPT-LDC

3.1 Capacity development of C/P and Village Heads through assistance to implement pilot activities

For the purpose of examining the extent of achievements of the activities carried out by JPT-LDC, the questionnaire-based interview survey was conducted on the capacity development of the C/P and village heads: 22 pe rsons in total. The questionnaire has been prepared separately for: (i) C/P at provincial and city/district levels and (ii) C/P at ward/commune people's committees and village heads). Among the C/P (4 persons) at provincial and city/district levels, questions were raised to receive responses from a viewpoint of the PMUs while the C/P at ward/commune levels and village heads (a total of 18 persons) were requested to respond to the questions in their individual capacities. The table below shows the interview target.

Organizations/village	Interviewees (persons)
PPMU	1
C/D PMU	3
Ward/commune	8
Village heads	10
Total	22

Table 3-1: C/P and village heads (planned and actual)

The survey was to confirm their involvement in LDC activities and roles in the activities (Question 1) and then to ask interviewees to list up useful trainings in which they participated, with the reasons for their choices (Question 2). Based on these questions, interviewees were requested to compare skill levels at the starting time of JPT-LDC's activities (October 2011) and at the time when the JPT-LDC was about to complete its activities (January 2013) (Question 3). Furthermore, they were asked to describe how they have disseminated skills and knowledge they had acquired (Question 4) and to answer their needs for further capacity development (Question 5). Summary outline and the distributed questionnaires are as attached (Appendix 6-7).

## **Question 1**: Participation in pilot activities and roles

In the questionnaire to the C/P and village heads, types of pilot activities (12 types) that JPT-LDC supported have been listed up. Then interviewees were asked to confirm types of activities in which the PMU they belongs or interviewees themselves were involved, and their major roles in such activities. The following table summarizes the responses from the interviewees.

In terms of the pilot activities, the general tendency tells that interviewees were involved more frequently in training and monitoring ("1.Training" and "5. Monitoring" in the table below) and participation of PMU and village heads were higher. In terms of their roles, they more often played roles of "facilitation", "organizer", and "technical advisor".

		PMU	W/CPC	Village heads	Total
	1.Training	7.8	5.8	6.8	6.6
vities	2.IG formation and development	6.5	4.1	3.5	4.3
acti <sup>r</sup> Ived	3.Study tour	6.3	2.9	5.7	4.8
of	4.Delivery	6.5	2.8	6.5	5.1
'pes ii	5.Monitoring	7.3	4.3	6.6	5.9
Ty	6.PR	6.3	3.0	6.6	5.2
	7.Others	0.0	0.3	0.8	0.5
и	a. Facilitator	11.8	8.5	8.8	9.2
bee	b. Trainee	0.8	2.8	5.0	3.4
ave	c. Organizer	7.3	4.5	8.0	6.6
s that ha playe	d. Lecturer	0.0	2.1	0.3	0.9
	e. Chair	1.5	3.3	6.2	4.3
cole	f. Technical Advisor	7.0	4.8	6.6	6.0
В	g. Others	1.0	1.3	7.8	4.2

 Table 3-2: Involvement of activities that JPT-LDC supported and their roles in the activities that they participated in

Note: If PMU or an interviewee is involved in an activity, one point is given but if not, no point is added. If their roles are pointed out, one point is given but if not, no point is added. In the table above, average points were calculated for C/P of PMUs, C/P of W/CPC, village heads and the total, respectively.

## Question 2: Useful training courses

Among the LDC-related training courses participated, interviewees were requested to list up 5 useful training courses as shown in the table below, together with reasons for their selection.

Type of Training		PMU	Ward/ Commune	Village heads		Total
Animal-raising	Pig	0	0	6	6	
	Cow	0	0	2	2	16
	Chicken	0	0	5	5	10
	Fish	0	0	3	3	
Agro-forestry	Fruit	0	0	2	2	
	Vegetable	0	1	6	7	10
	Contour	0	0	1	1	
Bio-gas	Biogas	0	0	3	3	5
	PE	0	0	2	2	5
Stove	Stove	0	0	4	4	4
Planning/	Facilitation	1	11 <sup>Note</sup>	0	12	
facilitation	IP	0	4	1	5	22
	Plan	1	0	0	1	25
	Manual	0	2	3	5	
Study tour	Japan	4	1	0	5	
-	KT	3	0	1	4	15
	SL	0	3	0	3	1.5
	HB	2	1	0	3	
Т	otal	11	23	39	73	73

Table 3-3: "Useful training courses" by category of interviewees

Note: There is an interviewee who listed up "facilitation training" four times, including the follow-up facilitation training. Some interviewees did not limit their answers to JPT-LDC-related activities, but also referred to the training courses undertaken under the Project as a whole.

C/P at ward and commune PCs and PMUs tend to appreciate training courses that will help them communicate and coordinate with villagers for implementation of pilot activities, such as trainings on facilitation skills, communication skills and preparation of plans. On the other hand, village heads tend to highly appreciate training courses, which are directly related to implementation of the pilot activities. Among them, their evaluation on pig and chicken raisings, vegetable cultivation and biogas training courses is high.

It is noted that the usage of 'training' and 'workshop' are often mixed in Vietnamese context, which gives an implication that participants might not regard training as training. Participants learned facilitation skill in certain technical training courses such as home garden, in which case they might not recognize they learned facilitation skill or vice versa. Their answers therefore depend on their own ideas on the usefulness of what they learned, which would not be based on the trainings course they actually participated in.

The interviewees raised reasons why they felt particular training course were useful. Simple and easy-to-understand trainings with immediate benefits are appreciated. In addition, their expectation is high on the activities that are likely to promptly generate benefits. It is considered that those activities that meet their expectations will serve as an important driving force to encourage their proactive participation in the Project. Cow, chicken and pig raising, and growing vegetables have been done in all pilot sites even before the Project started. However, by being introduced appropriate knowledge and technology through the Project activities, villagers started to learn how to improve hygienic condition, prevent animal diseases, improve health condition of animals, improve productivity of vegetable. They mention that other agencies in the past used to extend one-time supports by granting goods. Comparing with such cases, they appreciate a combination of technical and physical assistance provided under the Project, together with the follow-up activities through monitoring.

As expressed in the comments on the training course of improved cooking stoves, village heads tend to appreciate training courses that make it possible to visualize early benefits. In addition, it is considered that improved cooking stoves and training courses on contour line cultivation, respectively, have positive effects on promotion of forest conservation through monitoring of firewood consumption and prevention of soil erosion. The following shows the some of the responses from the interviewees.

	Useful training course	Reasons
1	Training course on how to prepare plan of livelihood development and forest management of a village	They gained new ways of thinking and knowledge on preparation of plans.
2	Facilitation skill	They have gained knowledge on communication skills.
3	Training course on: Livelihood Development and Life Improvement in Rural Area of Japan	They have gained knowledge on building livelihood development plans.
4	Study tour in Kon Tum	They have learned contour line cultivation and the animal revolving system.
5	Study tour in Hoa Binh	They were able to observe results of the Project supported by Japan (cow-raising, tree planting and agroforestry, etc.)

## PMU member A

#### Ward/commune PC staffer B

	Useful training course	Reasons
1	A study tour of forest protection in Son La	He learned about successful model.
2	Training course on facilitation skills	He gained knowledge on how to facilitate meetings.
3	Study tour of chit broom-making in Hoa	He learned techniques to make different kinds of chit brooms.
	Binh	

	Useful training course	Reasons
4	Training course on implementation process	He gained knowledge on procedures to implement pilot
	manual	activities.
5	Preparation of facilitation plan for	He gained knowledge on making a plan to facilitate pilot
	implementation of pilot activities	activities of villagers.

# Ward/commune PC staffer C

	Useful training course	Reasons
1	Training course on facilitation skills	He gained knowledge on how to facilitate discussions among villagers.
2	A study tour of forest protection in Son La	He learned successful practices of forest protection.
3	Training course on preparation of facilitation plan	He gained knowledge on procedures to implement pilot activities.
4	Training course on preparation of implementation plan	He gained knowledge on how to make plans for facilitating pilot activities among villagers.

# Village head D

	Useful training course	Reasons
1	Study tour for biogas utilization at Sai Luong	Simple and easy to understand the contents. After the study tour, benefits have been realized quickly.
2	Training course on wine-making process	It helped improve wine quality quickly after the training course It helps increase income by making use of local resources.
3	Training course and trial practice of Lao-type improved cooking stoves	Villagers understand and practice to reduce firewood consumption. It reduces cooking time as it helps boil water quickly.
4	Training course on vegetable cultivation techniques	Villagers earned cultivation techniques of different vegetable species. In the past, they used to cultivate only one or two species of vegetables. This knowledge has been applied, contributing to life improvement.

Note: He commented on pig raising training courses that it would be a heavy burden to deal with pig diseases. In terms of the workshop on manual utilization, it was too difficult for him to comprehend the contents.

## Village head E

	Useful training course	Reasons
1	Training course on techniques for cow-raising	<ul> <li>Gained more knowledge on construction of cow sheds (in the past, they used to simply put poles, etc.)</li> <li>Gained more knowledge on how to take care of cows (in the past, they used to graze cows in the forest. They have learned to cultivate pasture grasses and feed cows with them)</li> <li>Gained knowledge on identification of disease signs.</li> </ul>
2	Study tour on biogas utilization	<ul> <li>Have learned benefits from biogas plants and transferred the knowledge and experiences to others.</li> <li>Reduced time of collecting firewood and cooking meals.</li> <li>Reduced needs to cut trees in the forests for firewood</li> <li>Contributed to improvement of hygiene and environmental protection</li> </ul>
3	Training course on techniques for chicken-raising	<ul> <li>Chickens can be sold at high prices, but they can easily get diseases.</li> <li>It is a good way to build chicken houses and raise chicken in the houses because it is easy to take care of chickens and to prevent diseases and provide vaccinations.</li> </ul>
4	Training course on vegetable cultivation	- In the past, they did not make beds for the cultivation and apply good techniques. After the training course, they planted vegetables in line, started applying weeding and watering techniques, providing fertilizers, leading to productivity increase.
5	Training course on pig raising	- Built pig sheds and covered around the sheds with canvas for cold weather conditions. These practices have led to good raising conditions where pigs grow faster in good health.

## Village head F

	Useful training course	Reasons
1	Training course on sow-raising	<ul> <li>Acquired knowledge and applied it to practices with good effects.</li> <li>For example, he learned differences of feeds during the pregnancy period, after delivery and weaning periods.</li> <li>He learned about types of vaccinations.</li> <li>He did not know he should not feed sows with residues generated in the wine-making process during the pregnancy period.</li> </ul>
2	Training course on fish-raising; preventing fish diseases and providing treatment for fish	- He used to raise only one type of species in a big pond, but learned it would be better to raise a number of species at the same time; he also learned that that it would not be good to raise many fingerlings in a fish pond; that it would be good to apply lime in order to manage quality of water. He has obtained new knowledge on signs of fish diseases and measures to treat diseases. For example, fish will appear at water surface when the water has poor oxygen.
3	Training course on vegetable cultivation	<ul> <li>In the part, villagers cultivated vegetables in the raining season only. Now, they can cultivate vegetables in the winter time; and they can obtain enough vegetable for their daily consumption with two or three beds</li> <li>In the past, they did not make beds for vegetable cultivation.</li> </ul>
4	Training course on fruit tree plantation	- Pruning activities can help trees grow better and produce more fruits. They also contribute to collection of firewood for households.
5	Training course on improved cooking stove utilization	- Bring some good benefits to villagers, such as reduction of firewood consumption (reduction by 50%) and reduction of cooking time and time used for collecting firewood.

## Village head G

They had chances to attend training courses on animal-raising, water rice cultivation, fruit tree cultivation and forest protection other than those supported by the Project. However, other agencies did not specify the selection criteria of trainees so that he had to select villagers who had showed interests in the training courses. In addition, monitoring was not conducted after the training.

# Village head H

	Useful training course	Reasons
1	Training course on technique for cow-raising	<ul> <li>In the past, he used to let cows graze in the forest, but after participating in the training courses, he started feeding cows with trunks of bananas, rice bran, maize powder, etc.</li> <li>He learned the way to take care of cows by gaining knowledge on signs of diseases and health conditions. He has realized importance of providing treatment to sick cows. He also asks an animal health worker to come to see his cows.</li> </ul>
2	Study tour in Kon Tum	<ul> <li>He has gained knowledge on effects of constructing contour line in order to prevent soil erosion. Although he sometimes found it difficult, he recommended implementation of contour line cultivation to villagers. He also explains importance of forest conservation to villagers. If they can establish a good contour line cultivation model and demonstrate how they can maintain productivity, he thinks that villagers will be able to adopt it.</li> <li>He learned about the animal revolving system</li> </ul>
3	Training course and trial practice of Lao-type improved stove	<ul> <li>Villagers have realized reduction of firewood to one-third of what they used to use and also reduction of cooking time.</li> <li>Lao-type stove provided by the Project is also suitable with Thai's traditional way of making meals (such as sticky rice and barbecues)</li> </ul>
4	Training course on technique of chicken raising	- In the past, he did not know about how to raise chickens. They used to let chickens free range. He also understood about importance of providing vaccination and the way to prepare chicken feeds and prevent diseases for chicks.
5	Training course on preventing fish diseases and providing treatment for fish	- He learned more about water quality management and fish diseases through interaction with villagers at other village.

# Question 3: Effects of training: progress of capacity development

Interviewees were requested to compare the level of their capacities before JPT-LDC started its activities (October 2011) with that in January 2013. The following table describes the average rate of change in interviewees in a one and one-half year period of time. The group of interviewees that has achieved the highest positive changes is village heads. The rate of change of their capacity is high especially in terms of planning, monitoring and implementation skills.

No	Skills	PMU	W/CPC	Village heads	Average of total
1	<b>Facilitation skill</b> for planning and implementation of pilot activities to be carried out by villagers	1.6	2.1	2.2	2.0
2	<b>Coordination skill</b> among different organizations for assisting implementation of pilot activities	0.8	1.9	2.0	1.7
3	Management skill to manage implementation of SUSFORM-NOW	1.0	2.0	2.1	1.9
4	<b>Technical skill</b> to provide villagers with technical advices	0.5	2.5	2.3	2.0
5	<b>Planning skill</b> to prepare implementation plan of SUSFORM-NOW	1.3	2.6	2.7	2.4
6	<b>Implementation skill</b> to provide villagers with advice on implementation of pilot activities	0.6	2.2	2.5	2.0
7	<b>Monitoring skill</b> to monitor the implementation of pilot activities and SUSFORM-NOW and make necessary adjustments in the plans	0.8	1.9	2.7	2.0
8	<b>Communication skill</b> to listen and explain to villagers and other relevant personnel for planning and implementation of pilot activities	1.2	1.4	2.3	1.8
Ave	rage	1.0	2.1	2.3	2.0

Table 3-4: Progress of capacity development (average rate of changes in their capacity levels in October 2011 over that in January 2013)

Note: With regard to the skill level in October 2011 (a) and the level in January 2013 (b) in the respective fields, interviewees were asked to evaluate them on a five-point scale. Then average growth rates between these two periods (average [(b)/(a)-1]) were calculated.

Village heads have seen highest rate of changes in positive way, they particularly have developed planning, implementation and monitoring skills.

The reasons behind the capacity development include almost all the choices pre-listed in the questionnaire such as "objective of LDC trainings have met my needs" and "contents of LDC trainings have been useful". They seemed to appreciate that this support was extended to them. Village heads regard technical and practical trainings as useful, and their planning, implementation and facilitations skills have been improved through their promoting activities at village level. Moreover, goods were not simply provided to villagers. Instead, support with goods was well-integrated with training courses and continuous follow-up activities such as regular monitoring activities after provision of goods.

On the other hand, C/Ps of ward/commune level have experienced improvements in their technical skill and planning skill. They are the immediate personnel to lead and guide villagers in training courses and day-to-day activities, which has provided them opportunities to improve their skills by practice. JPT-LDC analyzes that the village head plays significant role in transferring information and technology, and ensuring the sustainability of the activities, as seen from the examples of construction of 70 bi ogas plants in less than 1 y ear, enhancement of animal-raising skills, and so forth.

## **Question 4**: Dissemination of skills and knowledge

Interviewees were asked to confirm contents of skills and knowledge that they had acquired and disseminated. Then further questions were posed in terms of how and to whom they had disseminated such skills and knowledge.

	DMU	W/CDC	Villaga Haada	Unit. No. 01	responses
	PMU	W/CPC	village Heads	Total	1
Animal (pig, chicken, etc.)	0	1	4	5	
Vegetable cultivation	0	0	1	1	
Contour line cultivation	0	0	1	1	12
Biogas utilization	0	0	3	3	15
Stove utilization	0	0	2	2	
Wine-making	0	0	1	1	
Facilitation skills	2	1	0	3	
Coordination skills	0	0	1	1	5
Dissemination of IG	0	0	1	1	
Plan	1	4	2	7	0
Analysis	0	2	0	2	9
Implementation	1	0	0	1	
Instruction	0	0	1	1	7
Technical	3	1	0	4	/
Training	0	1	0	1	
Monitoring	1	0	1	2	
Management/monitoring	0	1	0	1	5
Monitoring/extension	0	1	0	1	5
Listening/explaining	0	0	1	1	
PR	1	0	0	1	1
Total	9	12	19	40	40

Table 3-5: Contents of skills and knowledge disseminated

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Table 3-6: Parties to	whom skills an	a knowledge tha	at had been acc	juired were of	disseminated

	Your colleagues	Your boss	Your staff	Lower level gov. unit	Villagers	Others
PMU	10	0	3	1	8	2
W/CPC	5	3	7	3	13	0
Village heads	0	1	0	0	19	0
Total	15	4	10	4	40	2

With regard to dissemination of skills and knowledge, village heads pointed out pilot activities such as animal-raising and biogas training courses. Skills and knowledge required for implementation of the activities are often disseminated to villagers within the same village by way of village meetings and so on. Villager-to-villager learning is considered to be one of the key elements that contribute to the promotion of activities. On the other hand, staff of PMU and ward/commune PC tend to transfer skills and knowledge of planning and analysis, technical instruction, monitoring and so on to villagers, their colleagues and staff. That implies that they appreciate LDC activities and their effectiveness are disseminated and spread.

# **Question 5**: Further needs for capacity development

In terms of further needs for capacity development, interviewees listed various needs such as management of groups like IG, communication skills and management of funds like IG funds.

	PMU	СРС	Village heads	Tota	al	
Animal	0	1	2	3		
Forest planting/contour line	0	1	0	1	7	
Implementation	2	1	0	3		
Management	1	0	0	1		
Management of activities	0	0	2	2	1	
Group management	0	0	4	4	1.4	
Facilitation	0	2	0	2	14	
Coordination	1	0	0	1		
Communication	0	3	1	4		
Finance/fund management	0	0	4	4		
Plan	2	1	1	4	10	
Analysis	0	1	0	1	10	
Information collection	0	1	0	1		
Training	0	1	0	1		
Technical	1	0	0	1	7	
Monitoring	2	0	1	3	/	
PR	0	0	2	2		
Total	9	12	17	38	38	

Table 3-7: Further needs for capacity development

# 3.2 Household cash income and expenditure, and life improvement of villagers

In parallel with the interview survey with C/P and village heads, another questionnaire-based interview survey was conducted targeting villagers to identify the degree of contribution by the Project activities to household income and life improvement<sup>5</sup>.

# 3.2.1 Profiles of interviewees for the survey

It was planned to interview 50 households (28 households for beneficiaries and 22 households for non-beneficiaries). The actual number of respondents was 48 households (27 households for beneficiaries and 21 households for non-beneficiaries). Examination of the survey results reveals that 21 non -beneficiary households can be classified into 2 g roups: one group of households (a total of 12 households) that did not participate in any of the pilot activities and another group of households (9 households) that carried out activities other than the activity JPT-LDC pre-selected. For example, in the latter case, a household that does not participate in

<sup>&</sup>lt;sup>5</sup> A baseline survey was conducted in February 2012 targeting villagers at pilot sites. The impact survey should have been carried out in comparison with the baseline survey results in order to see the transition of household livelihoods, behavior changes of villagers, and the degree of achievement in pilot activities. However, the baseline survey intended to describe the ground situation at each site, and its questionnaire did not contain all the specific questions related to activities of JPT-LDC. Therefore it is considered insufficient to compare with the impact survey results. In the impact survey, interviewees were asked to examine if they had observed any significant increase or decrease in comparison with the income in the previous year (2011). For some livelihood development activities, it is still too early to verify positive impacts on increase in cash income. Activities such as cow-, fish- and chicken-raising, fruit tree planting and broom-makings were recently introduced so that it is expected to take a longer time for these activities to contribute to increased cash income. Therefore, it has been decided to examine qualitative responses from interviewees such as the C/P and village heads.

the pig-raising activity, which JPT-LDC is interested in following, but other activities like improved cooking stoves. Therefore, in the following analysis, comparison is made between 12 non-beneficiary households and 36 b eneficiary households (sum of 27 hous eholds plus 9 households). Selection of interviewees was conducted by a non-random sampling method.

		Number of interviewees						
Pilot activities	Village	Р	lan	Actual				
Thot activities	vinage	Beneficiary HH	Non-beneficiary HH	Beneficiary HH	Non-beneficiary HH			
Pig IG	Phieng Ban	3	2	3	2			
Cow IG	Huoi Mua A	3	2	3	2			
Chicken IG	Hang Tro B/Na Nghe	4	4	4	4			
Fish IG	Huoi Mua A	3	2	2	2			
Vegetable	Phieng Bua	2	2	2	2			
Fruit trees	Ke Nenh	2	2	2	2			
Contour line cultivation	Ke Nenh	1	2	1	2			
Improved cooking stoves	Phieng Bua	2	2	2	2			
Biogas (PE)	Na Phat A	2	1	2	1			
Biogas (Brick)	Sai Luong	2	1	2	1			
Wine	Tia Ghenh C	2	1	2	1			
Broom	Sai Luong	2	1	2	0			
Total		28	22	27	21			

Table 3-8: Planned and actual numbers of interviewees

## 3.2.1.1 Household members

The total number of household members of 48 households was 223, of which males were 105 and females were 118. An average number of household members was 4.7 persons per household (median: 5.0 persons, standard deviation: 1.4 persons, maximum: 9 persons, and minimum: 2 persons)<sup>6</sup>. The average age of household members was 26.6 years old (the number of household members for which the ages were identified is 221, the median age is 24 years old, the oldest person is 110 years old<sup>7</sup>).

Classification of household heads and total household members by ethnic group is shown below. Thai ethnic group accounts for about 60% of the responding households while H'Mong accounts for about 30%.

<sup>&</sup>lt;sup>6</sup> In the survey, household members are defined as members who share meals together in the last 6 months (or living together under one roof). Hence, household members who live away from the pilot sites for a long time because of, for example, their work or study in urban towns are excluded from the survey.

<sup>&</sup>lt;sup>7</sup> Assuming from the age of her child, it is considered that this response may be wrong

					Unit: Persons
Ethnic group	Thai	H'Mong	Kho Mu	Kinh	Total
Household heads <sup>8</sup>	30	14	4	0	48
Ratio	62.5%	29.2%	8.3%	0.0%	100.0%
Total household members	126	71	23	3	223
Ratio	56.5%	31.8%	10.3%	1.3%	100.0%

Table 3-9: Classification of household heads and total household members by ethnic group

# 3.2.1.2 Population Structure

In terms of the population structure, those who are 50 years old or less account for 88.2% as shown in the cumulative line graph below. Their longevity is very short if compared with the life expectancy at birth in Vietnam<sup>9</sup>.



Figure 3-1: Cumulative line graph for ages of household members

The table below compares the male and female population aged 50 years old or less by age bracket. The ratio of male population with the age of 20 or less is less if compared with that of female population. It is assumed that some males in these age brackets stay out of the pilot sites due to their studies<sup>10</sup>.

<sup>&</sup>lt;sup>8</sup> Ethnicity of household head and that of household members are not always connected with each other (in some cases people adopt children from other ethnic groups).

<sup>&</sup>lt;sup>9</sup> The life expectancy at birth in Vietnam was 73 years old for male and 77 years old for female in 2010 (The World Bank, World Development Indicators 2012).

<sup>&</sup>lt;sup>10</sup> Children at pilot sites often stay at dormitories while schooling period because their home are located far away from their schools.

						Unit: Persons
Age bracket	10 or below	11-20	21-30	31-40	41-50	Total
Male	20	19	27	14	12	92
Female	27	26	25	12	13	103
Total	47	45	52	26	25	195
Male/Total x 100 (%)	42.6%	42.2%	51.9%	53.8%	48.0%	47.2%

Table 3-10: Household members (50 years old or less) by age bracket and sex

The following table shows the number of household members by ethnic group, whose ages are 50 or less. Depending on the ethnic group, it is found that the ratio is quite different. In particular, H'Mong ethnic group shows a shorter life-span<sup>11</sup>.

Table 3-11: Share of household members by ethnic group, whose ages are 50 or less

					Unit: Persons
Ethnic group	Thai	H'Mong	Kho Mu	Kinh	Total
Household members	103	68	21	3	195
Ratio	81.7%	98.6%	91.3%	100.0%	88.2%

# 3.2.1.3 Education Level

The following table compares the level of education (6 years old or above) by ethnicity and sex. Since sampling was not conducted by a random sampling method and the sample is not large, it is not possible to generalize the trend with these data. However, it can be pointed out that the ratio of female household members who did not go to school is high and the level of their education is low.

								Unit: Persons
Male	1	2	3	4	5	6	7	Total
Thai	0	3	1	9	22	17	6	58
H'Mong	0	1	0	7	6	8	4	26
Kho Mu	0	0	0	0	1	6	2	9
Kinh	0	0	0	0	1	0	0	1
Total	0	4	1	16	30	31	12	94
Female	1	2	3	4	5	6	7	Total
Thai	0	6	1	4	9	17	18	55
H'Mong	0	0	1	2	8	17	7	35
Kho Mu	0	0	0	0	1	5	6	12
Kinh	0	0	0	0	1	0	0	1
Total	0	6	2	6	19	39	31	103

Table 3-12: level of education	(6	years old or above)	b	y ethnicity	and sex
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<sup>&</sup>lt;sup>11</sup> H'Mong people often live in the mountainous area where altitudes are higher. Temperature drops sharply during night time and winter time, which creates harsh weather for human beings to survive. Their hygiene, health and nutrition are poor. These have been observed qualitatively, but there is no quantitative analysis in this interview survey due to the small sample.

Male	1	2	3	4	5	6	7	Total
Thai	0.0%	5.2%	1.7%	15.5%	37.9%	29.3%	10.3%	100.0%
H'Mong	0.0%	3.8%	0.0%	26.9%	23.1%	30.8%	15.4%	100.0%
Kho Mu	0.0%	0.0%	0.0%	0.0%	11.1%	66.7%	22.2%	100.0%
Kinh	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	100.0%
Total	0.0%	4.3%	1.1%	17.0%	31.9%	33.0%	12.8%	100.0%
Female	1	2	3	4	5	6	7	Total
Thai	0.0%	10.9%	1.8%	7.3%	16.4%	30.9%	32.7%	100.0%
H'Mong	0.0%	0.0%	2.9%	5.7%	22.9%	48.6%	20.0%	100.0%
Kho Mu	0.0%	0.0%	0.0%	0.0%	8.3%	41.7%	50.0%	100.0%
Kinh	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	100.0%
Total	0.0%	5.8%	1.9%	5.8%	18.4%	37.9%	30.1%	100.0%

Percentage against the total in the table above

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Note: 1=University, 2=College, 3=Vocational school, 4=High school, 5=Secondary school, 6=Primary school, 7=No school

# 3.2.2 Participation in pilot activities

The conditions of participation in the pilot activities by households interviewed are shown in the table below. The number of households that did not participate in the pilot activities is 12 while households that have participated in any of the pilot activities numbers 36. Out of 36 households, 32 household have received fruit trees, 28 households have received vegetable seeds, and 14 households have received Lao-type improved cooking stoves. A total of 29 households (80% of the total households that have participated in pilot activities) has participated in two to four pilot activities. A number of combinations of activities have been observed for those that have participated in three pilot activities. One example is animal-raising, vegetable cultivation and fruit tree planting. Another example is fish-raising, biogas operation and vegetable cultivation. A combination of particular activities with immediate effect within a y ear or so (such as vegetable cultivation and Lao-type improved cooking stove) and other activities that require mid-term and longer-term perspective for getting benefit from (cow-raising and fruit tree cultivation fruit trees), is also observed.

Number of pilot activities participated	No. of HH
0	12
1	3
2	6
3	14
4	9
5	3
6	1
Total	48

Table 3-13: Conditions of participation in pilot activities

Table 3-14 below compares the conditions of participation (comparison between beneficiary households and non-beneficiary households) in pilot activities by ethnic group of household heads. It is not possible to make a comparison with Kho Mu as the sample size is too small. There are no s ignificant differences observed between Thai and H'Mong in terms of the participation.

	Tł	nai	H'N	Iong	Kho	Mu	То	tal
Beneficiary household	23	76.7%	11	78.6%	2	50.0%	36	75.0%
Non-beneficiary household	7	23.3%	3	21.4%	2	50.0%	12	25.0%
Total	30	100.0%	14	100.0%	4	100.0%	48	100.0%

Table 3-14: Conditions of participation in pilot activities by ethnic group of household heads

Note: Thai people comprise the majority of the village population in Huoi Mua A, Na Phat A, Sai Luong, Phieng Ban, and Phieng Bua. Tia Ghenh C, Ke Nenh and Hang Tro B have H'Mong as their majority.

Examining the data by the altitudes of where the respondents live shows that villagers living as high as 1,000m above sea level participate in Project activities more than those living at 500m.

	_	_	_	-		Unit: HH
	around 1	,000m asl	Around	500m asl	To	tal
Beneficiary household	13	81.3%	23	71.9%	36	75.0%
Non-beneficiary household	3	18.8%	9	28.1%	12	25.0%
Total	16	100.0%	32	100.0%	48	100.0%

Table 3-15: Participation in pilot activities by village altitude

Note: Tia Ghenh C, Huoi Mua A, Hang Tro B are located around 1,000m above sea level.

3.2.3 Household annual gross cash income and expenditure, and life improvement

3.2.3.1 Annual gross cash income (or annual gross cash receipts)

The following graph describes a frequency distribution graph of average annual gross income of a household by income source. The median of 48 households is 28.9 million VND, the average is 30.7 million VND, the standard deviation is 24.2 million VND, the maximum is 130.7 million VND and the minimum is 1.2 million VND. Households whose gross cash income is 10 million VND or below account for more than 23% while households with gross cash income of 20 million VND or below account for about 42%.



Figure 3-2: Frequency distribution graph of average annual gross cash income of a household by income source

The following table shows the average annual gross cash income of 48 households, 36 beneficiary households and 12 non-beneficiary households by income source.

					t	Jnit: VND
Source of income	Average of 48 HH	Ratio	Average of 36 beneficiary HH	Ratio	Average of 12 non-beneficiary HH	Ratio
Water rice (winter-spring)	2,016,917	6.6%	2,528,111	7.2%	483,333	2.7%
Water rice (summer-autumn)	1,393,229	4.5%	1,696,528	4.9%	483,333	2.7%
Upland rice	339,167	1.1%	264,722	0.8%	562,500	3.1%
Cassava	2,431,333	7.9%	2,555,667	7.3%	2,058,333	11.4%
Maize	2,521,979	8.2%	3,215,278	9.2%	442,083	2.5%
Home garden	893,750	2.9%	1,176,389	3.4%	45,833	0.3%
Buffalo	3,250,000	10.6%	3,972,222	11.4%	1,083,333	6.0%
Cow	1,604,167	5.2%	2,138,889	6.1%	0	0.0%
Pig	5,610,208	18.3%	7,208,056	20.6%	816,667	4.5%
Chicken	462,708	1.5%	572,500	1.6%	133,333	0.7%
Duck	99,167	0.3%	129,444	0.4%	8,333	0.0%
Fish	708,333	2.3%	944,444	2.7%	0	0.0%
Wine	197,917	0.6%	263,889	0.8%	0	0.0%
Broom	0	0.0%	0	0.0%	0	0.0%
Sum of incomes from agriculture and processed products (1)	21,528,875	70.1%	26,666,139	76.3%	6,117,083	34.0%
Wage from hired work	4,888,250	15.9%	2,784,333	8.0%	11,200,000	62.3%
Receipt from services	237,750	0.8%	250,333	0.7%	200,000	1.1%
Salary from Government	2,017,750	6.6%	2,690,333	7.7%	0	0.0%
Salary from Business	1,000,000	3.3%	1,300,000	3.7%	100,000	0.6%
Remittance from Children/Relatives	629,250	2.0%	839,000	2.4%	0	0.0%
Regular income from selling other products	239,750	0.8%	197,333	0.6%	367,000	2.0%
Others	175,000	0.6%	233,333	0.7%	0	0.0%
Income other than above (1) = (2)	9,187,750	29.9%	8,294,667	23.7%	11,867,000	66.0%
Total (1)+(2)	30,716,625	100.0%	34,960,806	100.0%	17,984,083	100.0%

Table 3-16: Average annual gross cash income of households by income source (2012)

The structure of gross cash income is quite different between beneficiary and non-beneficiary households. The share of income from agriculture is large for beneficiary households. On the other hand, the share of wage income from hired works and others is high for non-beneficiary households.

The following table shows the average annual gross cash income by ethnic group. A comparison between Thai and H'Mong was possible as they had a sufficient samples (n=44). Thai and H'Mong are similar in total income from agriculture sources and products. H'Mong however, have more income from water rice (winter-spring), cassava, maize, home garden, cow-raising and wine-making than Thai. Thai have three-fold the income from non-agriculture sources, among which wage from hired work is the greatest source.

			ι	Jnit: VND
Source of income	Average of Thai (30 HH)	Ratio	Average of H'mong (14 HH	Ratio
Water rice (winter-spring)	1,827,500	5.5%	2,731,214	10.9%
Water rice (summer-autumn)	1,665,000	5.0%	1,037,500	4.1%
Upland rice	121,667	0.4%	176,786	0.7%
Cassava	1,575,133	4.7%	3,650,000	14.6%
Maize	1,836,167	5.5%	3,878,571	15.5%
Home garden	648,333	1.9%	1,635,714	6.5%
Buffalo	4,633,333	13.9%	0	0.0%
Cow	766,667	2.3%	2,714,286	10.8%
Pig	6,439,667	19.3%	4,592,857	18.3%
Chicken	670,333	2.0%	71,429	0.3%
Duck	158,667	0.5%	0	0.0%
Fish	1,133,333	3.4%	0	0.0%
Wine	16,667	0.0%	642,857	2.6%
Broom	0	0.0%	0	0.0%
Sum of incomes from agriculture and processed products (1)	21,492,467	64.4%	21,131,214	84.3%
Wage from hired work	7,421,200	22.2%	0	0.0%
Receipt from services	300,400	0.9%	0	0.0%
Salary from Government	1,287,200	3.9%	3,619,714	14.4%
Salary from Business	1,480,000	4.4%	257,143	1.0%
Remittance from Children/Relatives	1,006,800	3.0%	0	0.0%
Regular income from selling other products	120,000	0.4%	36,000	0.1%
Others	268,000	0.8%	25,714	0.1%
Income other than above $(1) = (2)$	11,883,600	35.6%	3,938,571	15.7%
Total (1)+(2)	33,376,067	100.0%	25,069,786	100.0%

Table 3-17: Average annual gross cash income of households by ethnic group (2012)

Note: Thai people comprise the majority of the village population in Huoi Mua A, Na Phat A, Sai Luong, Phieng Ban and Phieng Bua. Tia Ghenh C, Ke Nenh and Hang Tro B have H'Mong as their majority.

The following table gives another look at the average annual gross cash income: by village altitude. Villagers living around 500m above sea level have twice the income from both agriculture and non-agriculture products than those living around 1,000m. They grow water rice, especially winter-spring crop, maize and buffalo. Their largest income contribution comes from pig-raising. They earn money from hired work as they have better geographical access to job opportunities.

Villagers living around 1,000m asl rarely had income from water rice production, but did grow cassava and raise buffalo. There are a few households who run retail shops and conduct trading (categorized as salary from business).

Unit:						
Source of income	Around 1000 m asl (16HH)	Ratio	Around 500 m asl (32HH)	Ratio		
Water rice (winter-spring)	0	0.0%	2,484,258	7.2%		
Water rice (summer-autumn)	75,000	0.4%	1,605,645	4.6%		
Upland rice	154,688	0.8%	391,129	1.1%		
Cassava	3,647,125	19.0%	1,464,645	4.2%		
Maize	1,887,500	9.8%	2,868,871	8.3%		
Home garden	1,125,000	5.9%	1,267,742	3.7%		
Buffalo	3,562,500	18.6%	3,258,065	9.4%		
Cow	1,625,000	8.5%	1,129,032	3.3%		
Pig	500,000	2.6%	7,435,161	21.5%		
Chicken	187,500	1.0%	672,581	1.9%		
Duck	0	0.0%	122,581	0.4%		
Fish	375,000	2.0%	709,677	2.1%		
Wine	593,750	3.1%	290,323	0.8%		
Broom	0	0.0%	0	0.0%		
Sum of incomes from agriculture and processed products (1)	13,733,063	71.6%	23,699,710	68.5%		
Wage from hired work	562,500	2.9%	6,001,161	17.4%		
Receipt from services	63,000	0.3%	335,613	1.0%		
Salary from Government	1,305,750	6.8%	2,859,871	8.3%		
Salary from Business	2,100,000	11.0%	1,045,161	3.0%		
Remittance from Children/Relatives	1,350,000	7.0%	277,548	0.8%		
Regular income from selling other products	31,500	0.2%	354,968	1.0%		
Others	22,500	0.1%	0	0.0%		
Income other than above (1) = (2)	5,435,250	28.4%	10,874,323	31.5%		
Total cash income(1)+(2)	19,168,313	100.0%	34,574,032	100.0%		

Table 3-18: Average annual gross cash income of households by village altitude (2012)

Note: Tia Ghenh C, Huoi Mua A, Hang Tro B are located around 1,000m above sea level.

(1) Gross cash income from sales of domestic animals

A close look at the structure of the average annual gross cash income of 48 households reveals that sales income from pigs (20 out of 48 households sold pigs, out of which 18 are beneficiary households and 2 are non-beneficiary households) and buffalos (8 households sold buffalos, out of which 7 are beneficiary households and one is non-beneficiary household) accounts for a significant share of the total annual gross cash income. There are large differences observed in income from domestic animals between beneficiary and non-beneficiary households. As shown in the table below, even though there was no big gap between beneficiary and non-beneficiary households in terms of chicken-raising, comparison of the number of other domestic animals owned by households shows that a larger number of beneficiary households tend to raise buffalos, cows and pigs, which require a relatively larger space to raise and also need land for growing animal feeds.

Items	Buffalo	Cow	Pig	Chicken	Duck		
Number of households that own domestic animals							
Beneficiary households	23	10	24	32	8		
(Ratio against 36 beneficiary households)	64%	28%	67%	89%	22%		
Non-beneficiary household	3	1	4	10	4		
(Ratio against 12 non-beneficiary households)	25%	8%	33%	83%	33%		
Average number of animals owned per household (Total number of animals owned/number of beneficiary or non-beneficiary households)							
Beneficiary households	1.7	0.7	4.0	24.8	3.6		
Non-beneficiary households	0.9	0.1	1.3	12.3	2.2		

Table 3-19: Conditions of ownership of domestic animals (comparison between beneficiary and non-beneficiary households)

Households that responded with sales income from pigs are not necessarily those that had received income from pigs supported by the Project. It is also difficult at this stage to verify the extent to which participation in training courses that were carried out in parallel with support with pigs has contributed to an increase in income. However, as will be described later, it was reported that at Phieng Ban village, IG members sold 81 piglets out of piglets delivered by 10 sows (10 IG member households) supported by the Project as of the end of February 2013. They recorded a total income of 65.5 million VND from sale of the piglets. As described earlier, the village head pointed out usefulness of training courses on pig-raising, which dealt with selection of types of feed in accordance with the progress of the pregnancy status of sows, and types of vaccinations. As a result of these training courses, there is the possibility of greater increase to income in future.

It has also been observed that the number of households that sold buffalos and cows were few, but they tended to sell these large-sized domestic animals for specific expenditure purposes because they were able to fetch a relatively large amount of income at once from the sale of one animal. For example, a household at one of the pilot sites sold 2 buffalos for 29 million VND in 2012 and in the same year bought a scooter at a cost of 43 million VND. The similar practice was heard at another pilot site. It is understood that large-sized domestic animals like cows and buffalos were utilized as a saving instrument.

On the other hand, pigs are prolific animals and their gestation period is shorter. These features will lead to an efficient rotation pattern. In addition, it is costly to feed pigs for a longer period of time. Therefore, households tend to sell pigs in a short rotation with a high frequency, making use of pigs as a means to secure regular cash income.

It is also pointed out that the number and types of domestic animals, which non-beneficiary households raise, are limited. Interviews with those households identified several reasons why they had been passive in participation in the pilot activities. For example, one reason is that they are afraid of the risk of letting animals die due to insufficient feed. They are also too busy to attend village meetings and collect information because they have to go to the forest to collect firewood, etc. Among poor households, some of them have been observing how other participating households performed under the Project. When asked about their future intention to participate in the Project, they responded that they had been thinking of participation in chicken-raising activities, which would require a relatively small amount of investment and bring about quicker returns of benefits. Thus, ripple effects are expected in the non-beneficiary households from now on.

## (2) Gross cash income from agricultural products

With regard to average annual gross cash income from agricultural products, water rice (48 households, out of which 19 households are winter-spring season farmers and 16 households are summer –autumn season farmers), maize (23 households) and cassava (17 households) account for high proportions although assistance has not been extended to activities relating to these products from the Project. Some households pointed out decreases in soil fertility and land productivity. If those households are able to foresee practical benefits from contour line plantations, they are expected to adopt the practice, possibly contributing to increase in income. As seen in Table 3-16 above, the average annual gross cash income from agricultural products is quite different between beneficiary and non-beneficiary households of the Project. As for beneficiary households (36 households), shares in annual gross cash income from water rice (15 households) and cassava (14 households) are high. On the other hand, in the case of non-beneficiary households (12 households), income from water rice and maize is low but the share of cash income from cassava (3 households) is high.

The table below summarizes cultivation areas. The average area of non-beneficiary households (1.2 ha) is less than half of the average area of beneficiary households (2.6 ha). The number of non-beneficiary households that own fallow lands is 3, far different from that of beneficiary households (23 households).

	Unit	Water rice (Winter- Spring)	Water Rice (Summer- Autumn)	Upland rice	Cassava	Maize	Home garden	Fallow lands	Forest	Total
No. of beneficiary households responded	НН	22	33	18	18	28	34	23	17	-
No. of non-beneficiary households responded	HH	7	9	6	5	6	7	3	3	-
Average area of beneficiary household (average of 36 HH)	M2	1,386	2,389	3,056	2,472	3,839	1,022	5,603	6,475	26,242
Average area of non-beneficiary household (average of 12 HH)	M2	475	908	4,667	1,783	1,458	351	2,500	583	12,726

Table 3-20: Area possible for cultivation

Generally speaking, households that practice shifting cultivations adopts a 3 to 5 year-cycle of alternating cultivation and fallow periods. For example, household A at a pilot site cultivates cassava (0.5 ha) and maize (0.1 ha) with fallow lands of 2.0 h a. The household continued cultivation of maize over the last 2 years. After the harvesting in the  $3^{rd}$  year, they plan to put that land under fallow. In the case of cassava, they plan to leave the land after 4 to 5 years of cultivation. Some villagers do not own lands to be put under the fallow period so that they continue cultivation at the same place every year. At another pilot site, household B cultivates
upland rice (1.5 ha), cassava (0.04 ha) and maize (0.2 ha) with a rotation of lands (2.5 ha) that have been put under the fallow period. Out of 1.5 ha for upland rice cultivation, they cultivate 1 ha of land over the past 4 years and plan to grow cassava next year. In the remaining 0.5 ha, they harvested upland rice in the past 2 y ears, they are expected to continue upland rice cultivation.

Vegetable cultivation is an activity that more rapidly produces results if compared with other activities. An average annual gross sales income of 48 households from this activity is 0.9 million VND (3% of the total cash income) as shown in Table 3-16 above. The number of households that generated cash income from sales of vegetables is 15 out of 48 households. If the average is taken for these 15 households, the average annual gross sales income for beneficiary households (12 households) is 3.5 m illion VND while that for non-beneficiary households (3 households) is 0.4 m illion VND. The sales income is quite different between these two groups.

### 3.2.3.2 Annual cash expenditure

The following shows a frequency distribution graph in terms of the amount of average annual household cash expenditures. The median value of 48 households is 34.2 million VND, the average is 39.9 million VND, the standard deviation is 25.6 million VND, the maximum is 116.7 million VND and the minimum is 3.7 million VND. Households with cash expenditure of 20 million VND, or below, account for a little less than 20% of households. Households with cash expenditure of 50 million VND, or below, account for 75% of 48 households.



Figure 3-3: Distribution graph of average annual cash expenditure of a household (2012)

The following table shows the annual average amount of cash expenditures by 48 households by expenditure item, and the averages of beneficiary and non-beneficiary households.

Expenditure items	Average of 48 HH	Ratio	Average of 36 beneficiary HH Ra		Average of 12 non-beneficiary HH	Ratio
Water rice						
(Winter-Spring)	1,653,525	4.1%	2,028,111	4.4%	529,767	2.3%
Water rice (Summer-Autumn)	1,940,816	4.9%	2,382,143	5.2%	616,833	2.7%
Upland rice	172,708	0.4%	158,889	0.3%	214,167	0.9%
Cassava	55,625	0.1%	74,167	0.2%	0	0.0%
Maize	870,938	2.2%	1,079,750	2.4%	244,500	1.1%
Home garden	139,792	0.4%	186,389	0.4%	0	0.0%
Buffalo	222,188	0.6%	287,917	0.6%	25,000	0.1%
Cow	8,271	0.0%	8,667	0.0%	7,083	0.0%
Pig	2,095,521	5.2%	2,783,889	6.1%	30,417	0.1%
Chicken	29,792	0.1%	39,722	0.1%	0	0.0%
Duck	10,000	0.0%	5,000	0.0%	25,000	0.1%
Fish	229,167	0.6%	250,000	0.5%	166,667	0.7%
Other animals	6,250	0.0%	8,333	0.0%	0	0.0%
Wine	93,750	0.2%	125,000	0.3%	0	0.0%
Broom	216,667	0.5%	288,889	0.6%	0	0.0%
Agriculture and processing (1)	7,745,008	19.4%	9,706,866	21.3%	1,859,433	8.1%
Food	13,387,000	33.5%	14,785,000	32.4%	9,193,000	40.3%
Health	1,052,750	2.6%	532,333	1.2%	2,614,000	11.5%
Education	2,055,500	5.1%	2,591,000	5.7%	449,000	2.0%
Wed/Funeral	1,216,750	3.0%	1,251,000	2.7%	1,114,000	4.9%
Housing	2,141,833	5.4%	2,768,111	6.1%	263,000	1.2%
Communication	1,237,525	3.1%	1,426,700	3.1%	670,000	2.9%
Transportation	7,343,833	18.4%	8,491,778	18.6%	3,900,000	17.1%
Loan repayment	1,383,625	3.5%	1,565,833	3.4%	837,000	3.7%
Clothes	1,869,500	4.7%	2,021,667	4.4%	1,413,000	6.2%
HH appliances	325,042	0.8%	290,333	0.6%	429,167	1.9%
Others	167,750	0.4%	196,333	0.4%	82,000	0.4%
Other than (1)=(2)	32,181,108	80.6%	35,920,089	78.7%	20,964,167	91.9%
Total (1) + (2)	39,926,116	100.0%	45,626,955	100.0%	22,823,600	100.0%

 Table 3-21: Average annual cash expenditure of beneficiary and non-beneficiary households by expenditure item

Among cash expenditures required for production of agricultural products and domestic animals, expenditures for water rice and pig-raising are relatively high. In terms of the water rice cultivation, each household shows different expenditure patterns, but on average, the sales amount of paddies covers more or less the amount of cash expenditures required. In other words, paddies are sold to cover the amount of cash expenditures required. A close look at the structure of the expenditures by beneficiary and non-beneficiary households reveals that cash expenditures required for pig-raising were a large contribution to expenditures by beneficiary households. Moreover, beneficiary households invested in maize, but investments in maize by non-beneficiary household were small. In general, a limited amount of investment is applied by non-beneficiary households. Food contributed most to the non-agriculture expenditure items, no matter whether households were beneficiary or not, followed by expenditure for transportation.

Other major expenditure items were health, education, funeral, housing, communication and cloths, among which non-beneficiary households spend more for health than beneficiary households: five fold more absolute expenditure accounting for ten times the share of expenditure.

The table below compares the average annual household cash expenditure between Thai and H'Mong. They spent similar amounts for agriculture expenditure in total, although H'Mong spent more on fertilizers and pesticides and Thai spent more on pig-raising. Thai people also spent more for health, education and transportation, whereas H'Mong spent more for clothes and communication to keep in touch with those who migrate for job opportunities.

	Unit: VND			
Expenditure items	Average of Thai (30 HH)	Ratio	Average of H'mong (14 HH)	Ratio
Water rice				
(Winter-Spring)	1,243,700	2.8%	2,292,443	7.5%
Water rice	1 717 ((7	2.00/	2 242 726	7.70/
(Summer-Autumn)	1,/1/,66/	3.8%	2,343,/26	/./%
Upland rice	116,833	0.3%	180,357	0.6%
Cassava	89,000	0.2%	0	0.0%
Maize	716,200	1.6%	1,339,214	4.4%
Home garden	27,000	0.1%	421,429	1.4%
Buffalo	24,000	0.1%	708,929	2.3%
Cow	10,400	0.0%	0	0.0%
Pig	2,858,167	6.4%	324,286	1.1%
Chicken	32,667	0.1%	32,143	0.1%
Duck	16,000	0.0%	0	0.0%
Fish	300,000	0.7%	0	0.0%
Other animals	10,000	0.0%	0	0.0%
Wine	0	0.0%	321,429	1.1%
Broom	346,667	0.8%	0	0.0%
Agriculture and processing (1)	7,508,300	16.7%	7,963,954	26.1%
Food	14,476,000	32.3%	10,371,429	33.9%
Health	1,625,600	3.6%	126,000	0.4%
Education	2,566,400	5.7%	1,186,286	3.9%
Wed/Funeral	1,312,000	2.9%	831,429	2.7%
Housing	3,321,733	7.4%	0	0.0%
Communication	1,096,040	2.4%	1,740,000	5.7%
Transportation	9,477,467	21.1%	4,055,714	13.3%
Loan repayment	1,497,000	3.3%	1,370,571	4.5%
Clothes	1,629,200	3.6%	2,390,571	7.8%
HH appliances	176,400	0.4%	368,571	1.2%
Others	178,400	0.4%	146,571	0.5%
Other than (1)=(2)	37,356,240	83.3%	22,587,143	73.9%
Total (1) + (2)	44,864,540	100.0%	30,551,097	100.0%

Table 3-22: Average annual household cash expenditure by ethnic group	in 2012
(Thai and H'Mong)	

The following table further compares the average annual household cash expenditure between different groups: those living around 500m above sea level and those around 1,000m. People

living around 500m spend for water rice, maize and pig raising, and their expenditure for agriculture reached three times that of those at 1,000m. Villagers around 1,000m on the other hand spend more for health, education, communication, transportation, loan repayment and clothes than those of 500m. Their access to those services is limited as they live in remote areas, which means that they have no choice but to spend more money than people living at lower altitude do. Those living around 1,000m may have to rely on the loan packages offered by the Vietnam Bank for Social Policies (VBSP)<sup>12</sup> as other financial services are not available (All the 16 households located around 1000m asl have loans with the VBSP).

Table 3-23: Average annual household cash expenditure of all interviewed households in 2	012
(by village altitude)	

	Unit: VND			
Expenditure items	Around 1000 m asl (16HH)	Ratio	Around 500 m asl (32HH)	Ratio
Water rice				
(Winter-Spring)	0	0.0%	2,480,288	6.3%
Water rice	054.5(2	2 40/	2 422 0 42	( 10/
(Summer-Autumn)	954,563	2.4%	2,433,943	6.1%
Upland rice	316,875	0.8%	100,625	0.3%
Cassava	101,250	0.2%	32,813	0.1%
Maize	456,875	1.1%	1,077,969	2.7%
Home garden	368,125	0.9%	25,625	0.1%
Buffalo	93,750	0.2%	286,406	0.7%
Cow	18,750	0.0%	3,031	0.0%
Pig	218,750	0.5%	3,033,906	7.7%
Chicken	46,875	0.1%	21,250	0.1%
Duck	11,250	0.0%	9,375	0.0%
Fish	0	0.0%	343,750	0.9%
Other animals	18,750	0.0%	0	0.0%
Wine	281,250	0.7%	0	0.0%
Broom	0	0.0%	325,000	0.8%
Agriculture and				
processing (1)	2,887,063	7.1%	10,173,980	25.7%
Food	12,116,250	29.9%	14,022,375	35.4%
Health	2,791,500	6.9%	183,375	0.5%
Education	3,008,250	7.4%	1,579,125	4.0%
Wed/Funeral	1,076,250	2.7%	1,287,000	3.2%
Housing	3,247,500	8.0%	1,589,000	4.0%
Communication	1,665,000	4.1%	1,023,788	2.6%
Transportation	8,700,250	21.4%	6,665,625	16.8%
Loan repayment	2,720,250	6.7%	715,313	1.8%
Clothes	2,131,500	5.3%	1,738,500	4.4%
HH appliances	141,000	0.3%	417,063	1.1%
Others	86,250	0.2%	208,500	0.5%
Other than (1)=(2)	37,684,000	92.9%	29,429,663	74.3%
Total (1) + (2)	40,571,063	100.0%	39,603,643	100.0%

<sup>&</sup>lt;sup>12</sup> Among the government banks, it was the Vietnam Bank for Agriculture and Rural Development (VBARD) which used to deal with commercial banking and policy banking until 2002. Vietnam Bank for the Poor (VBP) was newly established exclusively for the policy banking. VBP was then replaced by the VBSP in 2003. The Japan Finance Corporation (JFC) extended its technical cooperation to VBSP in SME sector from 2003 to 2008.

### 3.2.3.3 Net cash income

The following graph shows the frequency distribution graph of average annual household net cash income. As their answers are limited to the amount in 2012, 21 out of 48 households recorded negative net cash income. Some households spent a large amount of cash in the year for purchase of motor cycles, construction/renovation of houses, etc.



Figure 3-4: Frequency distribution graph of average annual household net cash income

The table below shows the breakdown of the annual average net cash income from agriculture. An average of 48 HH shows that pigs and buffalo are the two large contributing factors to net income, followed by cassava and maize. The breakdown of beneficiary and non-beneficiary groups tells that the share of cassava is rather big in the net agriculture income for the non-beneficiary group although the number of households engaged in the cassava cultivation is small (3 households) in the non-beneficiary group. While the amount of net cash income from cassava is almost same level as that of the non-beneficiary group, the beneficiary group has various income sources that generated higher levels of net income such as pigs, buffalo and maize.

Source of income	Average of 48 HH	Ratio	Average of beneficiary 36 HH	Ratio	Average of non-beneficiary 12 HH	Ratio
Water rice (winter-spring)	363,392	2.6%	500,000	2.9%	-46,433	-1.1%
Water rice (summer-autumn)	-547,587	-4.0%	-685,616	-4.0%	-133,500	-3.1%
Upland rice	166,458	1.2%	105,833	0.6%	348,333	8.2%
Cassava	2,375,708	17.2%	2,481,500	14.6%	2,058,333	48.3%
Maize	1,651,042	12.0%	2,135,528	12.6%	197,583	4.6%
Home garden	753,958	5.5%	990,000	5.8%	45,833	1.1%

Table 3-24: Annual average net cash income from agriculture per household

Source of income	Average of 48 HH	Ratio	Average of beneficiary 36 HH	Ratio	Average of non-beneficiary 12 HH	Ratio
Buffalo	3,027,813	22.0%	3,684,306	21.7%	1,058,333	24.9%
Cow	1,595,896	11.6%	2,130,222	12.6%	-7,083	-0.2%
Pig	3,514,688	25.5%	4,424,167	26.1%	786,250	18.5%
Chicken	432,917	3.1%	532,778	3.1%	133,333	3.1%
Duck	89,167	0.6%	124,444	0.7%	-16,667	-0.4%
Fish	479,167	3.5%	694,444	4.1%	-166,667	-3.9%
Other animals	-6,250	0.0%	-8,333	0.0%	0	0.0%
Wine	104,167	0.8%	138,889	0.8%	0	0.0%
Broom	-216,667	-1.6%	-288,889	-1.7%	0	0.0%
Sum of net incomes from agriculture and processed products (1)	13,783,867	100.0%	16,959,273	100.0%	4,257,650	100.0%

### 3.2.4 Others

### 3.2.4.1 Borrowings

Many households (37 HH out of 48 HH) that responded borrow from the VBSP. The median loan amount is 15 million VND, the average 17.5 million VND, the maximum 55 million VND and the minimum 2 million VND with the average repayment period of 5 years. The main purpose for borrowing is animal-raising (44 HH). Other purposes include construction of houses and education. Although households do n ot necessarily utilize loans in accordance with the original loan purposes, this indicates that many households have strive to be engaged in animal-raising activities to some extent. Therefore, households are expected to continuously make use of what they learned during training courses in the pilot activities. VBSP establishes outlets at commune level, with which they extend banking services to the people in remote areas and the poor people. People at the pilot sites have access to the services offered by the VBSP. They also can make use of such banking services for purchasing and growing animals as they learned in the training courses and through LDC activities.

Other parties from whom households borrow include friends and relatives (3 HH with an average amount of 2.3 million VND).

#### 3.2.4.2 Food variety

Respondents were asked whether they had more varieties of foods compared with conditions one year ago. This was a qualitative question, but identified that beneficiary households felt they had more varieties of foods than the conditions a year before.

	Beneficiary HH	Ratio	Non-beneficiary HH	Ratio
More variety	19	52.8%	2	16.7%
No change	16	44.4%	10	83.3%
Less variety	1	2.8%	0	0.0%
Total	36	52.8%	12	16.7%

Table 3-25: Responses to the question about varieties of foods (classified into beneficiary and non-beneficiary households)

As described earlier, many households have home gardens and participated in vegetable cultivation activities (28 HH out of 48 HH). As shown in the table below, since many households that have been engaged in home garden activities tend to point out that they had more varieties of food, it is assumed that their responses could be based on increased availability of wider varieties of vegetable species supported by the Project.

	Vegetable cultivation Beneficiary HH	Vegetable cultivation Beneficiary HH Ratio		Ratio	
More variety	18	64.3%	3	15.0%	
No change	9	32.1%	17	85.0%	
Less variety	1	3.6%	0	0.0%	
Total	28	100.0%	20	100.0%	

 Table 3-26: Responses to the question about varieties of foods

 (comparison of vegetable cultivation beneficiary HH with non-beneficiary HH)

3.3 Effects of reduction of firewood consumption and collection time

3.3.1 Effects by improved cooking stoves

The comparative study was conducted for two types of cooking stoves: three-stone stove (TSS) and Lao-type stove.



Photo 3-1: Three-stone stove (TSS)



Photo 3-2: Lao-type stove

Moisuture content of firewood was high and estimated to be 35% and the latent heat of evaporation was considered. The following table summarizes the results of the study

	Cooking Stov	re (small size)	Stove for pig feeding (Large size)		
	TSS	Lao-Type	TSS		
Total efficiency	12%	15%	13%		
Increase in efficiency comparing to TSS	-	23%	-		
Reduction rate of cooking time comparing to TSS	-	10%	-		
Amount of smoke /soot	++++	+++	++++		

Table 3-27: Results of the comparative study of cooking stoves

This experiment reveals that:

- (i) The Lao-type stove shows relatively high efficiency. It will reduce firewood consumption by approximately 20% as compared to TSS; and
- (ii) Use of Lao-type stove does not reduce smoke or soot significantly.

The following table describes the results of the initial survey conducted before provision of Lao-type improved cooking stoves, and the monitoring survey before and after provision of the stoves in terms of the consumption volume of firewood.

According to the responses from 136 households that were expected to receive stoves, the average duration required for collection of firewood was 6.4 hours per week. Almost the same households answered that they collected an average of 143 kg of firewood per week. Firewood is used not only for the purpose of cooking meals for households but also preparing feed for domestic animals and producing wine, etc.

In terms of the volume of firewood saved, their responses (108 effective answers for the analysis) show an average volume of reduction by about 52% from 11.6 kg/day to 5.5 kg/day. The extent of reduction varies from village to village, ranging from less than 30% to 65%.

District/city	Dien	Bien		Dien B	ien Dong		Dien Bien Phu			Total
Commune/ward	Nua Ngam	Thanh An	Kee	o Lom	Na Son	Pu Nhi	Ta I	leng	Noong Bua	TITT
Village	Sai Luong	Phieng Ban	T.G. C	Huoi Mua A	Na Phat A	Hang Tro B	Na Nghe	Ke Nenh	Phieng Bua	нн
Collection of firewood	Collection of firewood before they received stoves									
No of HH respondents (HH) to questions about the time required for collection of firewood	17	41	7	11	12	11	13	-	24	136
Average no of hours required per week per HH (hours/week)	6.3	7.3	5.7	9.3	5.2	4.2	3.9	-	6.7	6.4
Average amount of firewood collected per week per HH (kg/week)	124.4	113.0	144.5	193.4	175.7	126.5	209.5	-	135.6	143.1
No. of households that	have rec	eived stov	ves and	submitte	ed monito	oring shee	ets for the	e analysis	s (HH)	
HH that have received stoves	26	43	14	17	13	12	18	-	24	167
HH that have submitted monitoring sheets, which can be effective for analysis	13	35	6	7	8	11	5	-	23	108
Average amount of fir	ewood co	nsumptio	n per I	H per d	ay for co	oking fan	nily meals	s(kg)		
Before use of stove (1)	18.7	9.1	9.8	15.2	14.3	15.5	9.0	-	8.7	11.6
After use of stove (2)	6.4	4.5	4.7	6.0	7.8	7.7	6.5	-	4.6	5.5
(1)-(2)=(3)	12.3	4.6	5.1	9.2	6.5	7.8	2.5	-	4.1	6.1
(3)/(1) x 100 (%)	65.6%	50.2%	51.7%	60.4%	45.3%	50.3%	27.8%	-	47.1%	52.4%

Table 3-28: The time for collection of firewood and reduction of consumption volume of	
firewood	

# 3.3.2 Effect by biogas plants

### (1) Reduction of firewood consumption volume

Households that wish to install biogas plants were requested to fill in the monitoring sheet of the firewood consumption one month prior to and two months after the installation of the biogas plants. However, because their monitoring records were found not so accurate, they were used only for reference. The follow-up interview survey was conducted to examine the volume of firewood consumption. The table below compares the consumption volume of the firewood before and after the installation for households that have installed biogas plants based on the interview survey. The comparison shows the general tendency of reduction in the firewood consumption for cooking family meals.

								U	nit: kg/day	
Tumo		Before			After			Difference		
туре	Meals	Pig feeds	Total	Meals	Pig feeds	Total	Meals	Pig feeds	Total	
Brick-type biogas plant										
Firewood (kg)	10.7	8.1	18.6	3.0	7.1	9.8	7.7	0.8	8.3	
No. of HH responded	41	33	41	42	42	43	41	42	43	
PE-type biogas	plant									
Firewood (kg)	7.3	5.4	12.7	2.1	5.4	7.2	5.2	0.0	5.0	
No. of HH responded	25	19	25	25	25	26	25	25	26	
Total										
Firewood (kg)	9.6	8.9	16.6	2.7	6.4	8.8	6.7	0.5	7.0	
No. of HH responded	66	52	66	67	67	69	66	67	69	

Table 3-29: Average daily volume of firewood consumption per responding household

Note: The number of households that have responded with the interview survey is different between before and after use of biogas plants. The simple average per household has been calculated for the number of responding households.

With regard to the firewood consumption for cooking family meals, the volume has substantially decreased from 10.7 kg/day/household to 3.0 kg/day/household for the brick-type biogas plants while from 7.3 kg/day/household to 2.1 kg/day/household in case of the PE-type biogas plants. It was observed that households kept using three-stone stoves and/or Lao-type cooking stoves to prepare traditional meals. Therefore, even when biogas is sufficiently available, it is reasonable to know that they continue to use firewood when cooking meals although the volume is less. On the other hand, the firewood consumption for pig feeds is not so different if comparison is made over the two periods.

### (2) Reduction of collection time

The decrease in the consumption volume of the firewood will lead to reduction of the time they spent on collection of firewood. The following table shows the extent of reduction in the time of collecting firewood based on the interview survey.

			Unit: Times/month						
Туре	Before	After	Difference						
Brick-type biogas plant									
Firewood (kg)	4.7	3.1	1.9						
No. of HH responded	38	37	33						

Table 3-30: The number of times spent on collection of firewood

Туре	Before	After	Difference						
PE-type biogas plant									
Firewood (kg)	4.1	2.5	1.5						
No. of HH responded	24	24	22						
Total	Total								
Firewood (kg)	4.5	3.0	2.0						
No. of HH responded	62	61	55						

Note: The number of households that have responded with the interview survey is different between before and after use of biogas plants. The simple average per household has been calculated for the number of responding households.

(3) Yearly reduction of firewood consumption and collecting labor time of firewood

The following data shows the annual reduction volume of firewood consumption and saving of labor days per year per household based on the daily data in the tables above.

Туре	Average dec (1	rease of firewood ( ton/household/yea	consumption r)	Average decrease of collecting firewood		
	Cooking	Pig feeds	Total	(days/household/year)		
Brick (6-14.7 m <sup>3</sup> )	2.80	0.30	3.02	11.1		
PE (3.9-6.5m <sup>3</sup> )	1.90	0.00	1.83	9.2		
Average	2.46	0.19	2.57	11.9		

 Table 3-31: Yearly reduction of consumption and collecting labor time of firewood per household

### (4) Case study in Thai villages

Two Thai villages (Sai Luong and Na Phat A) have been selected to analyze effects of reducing firewood consumption and labor work required for firewood collection. The results are shown in the table and figures below.

Households that installed brick-type biogas plants use substantially less firewood for the purpose of cooking meals. The annual total amount of firewood saved is calculated at 3.2 tons. In case of PE-type biogas plants, households have reduced firewood consumption by two-third, i.e., 2.2 tons. On the other hand, households still rely on firewood to cook pig feed. At the newly constructed large-sized plant (a capacity of 14.7m3), a burner for cooking pig feeds was installed on a trial basis. In terms of the reduction of labor time for firewood collection, collection events have been reduced by about 18.8. Since most of the households spend half a day for firewood collection each time, it is tentatively assumed that effects on reduction in labor work would be 9.4 man-days

Table 3-32: Reduction of consumption and collecting labor of firewood

Туре	Average decrease in firewood consumption (ton /year)	Average decrease of collecting firewood (days/year)
Brick-type (9-11 m <sup>3</sup> )	3.22	9.5
PE-type (6m <sup>3</sup> )	2.24	9.3
Average	2.73	9.4

The degree of correlation was confirmed by drawing two scatter diagrams. Figure 3-5 shows the correlation between the decrease of firewood consumption and gas production. Brick type and PE-type biogas plants both showed positive correlation (PE-type has stronger positive correlation). Both types of biogas plants also showed strong positive correlation between the decrease of labor for firewood collection and gas production (Figure 3-6).



Figure 3-5: Reduction of firewood consumption

Figure 3-6: Reduction of labor for firewood collection

### 3.4 Animal-revolving system, IG fund, and internal regulations

### 3.4.1 Conditions of animal-revolving system and IG fund

In addition to the questionnaire-based interview survey, monitoring was conducted to examine the conditions of animal-revolving systems and animal-raising activities. IGs for animal-raising activities have internal regulations to govern the system to rotate seed animals supported by the Project, piglets or a certain amount of money agreed in the internal regulations (IRs). By doing this, benefits of the Project are supposed to be shared among villagers. The mode of the revolving system varies depending on the IGs. For example, sows are rotated at the pig IG of Phieng Ban while piglets are returned to the revolving system at other seven villages. As of February 2013, the conditions of animal-revolving systems and animal-raising activities for pigs and cows are summarized as in the table below. It is found that pigs and cows started being gradually rotated among IG members while sales revenues from piglets have been recorded.

District/city	Dien	Bien	Die	n Bien D	ong	Dien Bien Phu		
Commune/ward	Nua Ngam	Thanh An	Keo Lom		Pu Nhi	Ta I	Ta Leng Noo Bu	
Village	Sai Luong	Phieng Ban	Tia Ghenh C	Huoi Mua A	Hang Tro B	Na Nghe	Ke Nenh	Phieng Bua
No. of sows provided	12	15	12	5	3	4	4	2
No. of sows that have died	3	1	3	0	0	0	0	0
No. of sows handed over to the second group		2						
No. of piglets handed over to the second group	2		0	0	0	0	0	0
No. of piglets born	99	170	81	0	0	0	0	0
No. of piglets killed for consumption or stolen	7	0	10	0	0	0	0	0
No. of piglets sold	5	81	5	0	0	0	0	0
Sales amount of piglets (Mil D)	7.3	65.5	3.9	0	0	0	0	0

Table 3-33: Conditions of pig rotations and pig raising activities as of February 2013

District/city		Dien Bien Dong					
Commune/ward	Keo Lom	Na Son	Pu Nhi				
Village	Huoi Mua A	Na Phat A	Hang Tro B				
No. of cows provided (or purchased)	6	4	6				
No. of cows that have died	1	0	0				
No. of cows handed over to the second group	4	0	2				
No. of calves delivered	6	0	4				

Table 3-34: Conditions of cow rotations and cow-raising activities as of February 2013

As shown in the table above, some domestic animals, which had been provided under the Project, died due to diseases. The ways in which IGs deal with such cases vary. In Phieng Ban, the IG management decided to procure new sows with the IG funds. Eight IG members who have received construction materials for pig sheds are scheduled to return the equivalent amount of money to the IG fund. The amount repaid will be utilized to purchase new sows. In order to ensure a sustainable increase in income, it is necessary to take prompt measures within IGs.

The following table shows the status of chicken-raising operations as of February 2013. Out of 2,460 chicks distributed, it was reported that 2,241 survived. The survival rate is calculated at 91%. Some died due to diseases while others were reportedly used for home consumption during the Tet holidays. The IGs has yet to start selling chicken as of the end of February 2013.

				Survival rate		
No.	Village	Input	Died from diseases	Lost from other reasons	Output	(%)
1	Na Phat A	250	3	22	225	90.0
2	Tia Ghenh C	360	11	4	345	95.8
3	Huoi Mua A	130	4	6	120	92.3
4	Phieng Ban	360	63	0	297	82.5
5	Sai Luong	510	49	0	461	90.4
6	Phieng Bua	200	22	1	177	88.5
7	Ke Nenh	250	16	0	234	93.6
8	Na Nghe	200	10	3	187	93.5
9	Hang Tro B	200	6	0	194	97.0
	Total	2,460	184	36	2,240	91.1

Table 3-35: Conditions of chicken-raising operation as of February 2013

# 3.4.2 Development of internal regulation

In each IG (livestock-, fish-raising activities), an IR is prepared in advance before starting the activities. Through preparation of IRs, IG members confirm and agree on objectives of the activities (both for livelihood development and forest management), the revolving system, and so forth. For pig IGs, IRs prepared before JPT-LDC started its activities stated that members would plan to rotate sows to the next households. However, after learning from the case study during the study tour in Kon Tum in March 2012, the members have started to realize the necessity of the cost-benefit analysis, how to keep fairness among the members and so on, and started to revise their IRs. As for the IG of additional animal- and fish-raising activities that started under the LDC activities, the delivery of seed animals/fish started after completing the discussions and the agreement of the IR, with consideration of the above points.

Although some IGs started arguments on the revolving system after receiving seed animals/ fish, all the 27 IGs have completed IRs (agreed among members and formalized at CPC) as of March 2013.

### 3.5 Village Management Board and Village Fund

During the seminar workshop on Forest Management and Livelihood Development held in October 4<sup>th</sup> and 5<sup>th</sup>, 2012, establishment of the "forest management and livelihoods development group (FMLDG)" was agreed in order to formulate forest management and livelihoods development plans of each village or the group of villages, and coordinate implementation of them by individual members and/or sub-groups. The management board of FMLDG is responsible for coordination of all the pilot activities to be carried out at the village under the Project, monitoring of the activities being carried out without forming interest groups (IGs), manage a village fund, and coordinate relationships with organizations outside the village. Accordingly, the board members were selected during the 2012 activity review<sup>13</sup> and 2013 planning workshop held from the end of November to the middle of December 2012. The management board was supposed to discuss the IR which contains the management and usage of the village fund, regular meeting schedule, and so on.

Before establishing the board and formal village fund management rules, a condition was set for those households who receive Lao-type improved cooking stoves to contribute 40,000VND/unit to the village fund. Accordingly, the money has been kept by village heads. As 40,000VND/unit is collected at the time of delivery at each village, the amount of money, which is calculated by multiplying 40,000VND/unit by the number of cooking stoves delivered, is kept in each village fund as below (as of the end of February 2013).

Village	Sai Luong	Phieng Ban	Tia Genh C	Huoi Mua A	Na Phat A	Hang Tro B	Na Nghe	Ke Nenh	Phieng Bua
No. of stove	26	43	14	17	13	12	18	0	24
Village Fund (VND)	840,000	1,680,000	360,000	480,000	520,000	480,000	720,000	-	960,000

Table 3-36: Balance of Village Fund from distribution of stoves(As of the end of February 2013)

Note: The number of Lao-type improved cooking stoves in the table above includes 16 stoves used for a trial test where no self-funding portion was collected.

So far, the fund is being in the village without use. The village management board needs to discuss and agree on appropriate usage of the fund and agree among villagers.

### 3.6 Home vegetable gardens

The following table shows the monitoring results for autumn-winter vegetables at 9 villages. Monitoring sheets were distributed to village heads from the middle of January 2013 and collected 2 weeks later at the end of the same month. Beneficiary households that have received vegetable seeds number 239<sup>14</sup> while non-beneficiary households were 157, making the total

<sup>&</sup>lt;sup>13</sup> The members were selected at the review except for Phieng Bua where the selection was completed in March 2013.

<sup>&</sup>lt;sup>14</sup> The number of households that has received vegetable seeds number 238, according to the record of JPT-LDC. Village heads might have made mistakes in filling out monitoring sheets or those that had received vegetable seeds

396. The table summarizes the conditions of cultivation at these households.

Many beneficiary households had been pro-actively engaged in vegetable cultivation before they received support from the Project. Even after the support from the Project, the number of beneficiary households that were involved in putting protection fences around vegetable gardens and making compost has increased. It is considered that villagers have many chances to exchange their technologies through daily conversations and direct observations. This practice is also assumed to be exercised from the fact that the number of non-beneficiary households, who put fences around and made compost, has increased after the support from the Project. In addition, it is noticed that the number of households that sold vegetables within their respective villages has increased from 27 (before support from the Project) to 61. The number of households under the category of "Sales in the village" includes those households that sell vegetables to middlemen. The number of households that sold vegetables in the markets is 20 at Phieng Bua. At the time of this survey, there was no change being observed for the number of households that sold vegetables in the markets before and after the support from the Project at Phieng Bua. Furthermore, at Phieng Bua village, it has been reported that out of the households that used nitrogen, 6 households started applying fertilizer from biogas plants.

Households that responded	home garden	fence	Compost	Fertilizer applied (cow dung)	Home consump tion	Sales in the village	Sales in the markets	Sales to middle- men			
Before support from the Project (number of households)											
Autumn-winter vegetable beneficiary HH	171	156	130	153	181	21	31	3			
Ratio against total 239 beneficiary HH	71.5%	65.3%	54.4%	64.0%	75.7%	8.8%	13.0%	1.3%			
Non-beneficiary HH	40	28	21	33	47	6	4	-			
Ratio against total 157 HH	25.5%	17.8%	13.4%	21.0%	29.9%	3.8%	2.5%	0.0%			
Total	211	184	151	186	228	27	35	3			
Ratio against 396 HH for the survey	53.3%	46.5%	38.1%	47.0%	57.6%	6.8%	8.8%	0.8%			
After support from t	he Project (	number o	f households	)							
Autumn-winter vegetable beneficiary HH	178	177	159	166	189	50	29	2			
Ratio against total 239 beneficiary HH	74.5%	74.1%	66.5%	69.5%	79.1%	20.9%	12.1%	0.8%			
Non-beneficiary HH	49	46	36	46	57	11	5	-			
Ratio against total 157 HH	31.2%	29.3%	22.9%	29.3%	36.3%	7.0%	3.2%	0.0%			
Total	227	223	195	212	246	61	34	2			
Ratio against 396 HH for the survey	57.3%	56.3%	49.2%	53.5%	62.1%	15.4%	8.6%	0.5%			

Table 3-37: Comparison of conditions of vegetable cultivation by beneficiary and non-beneficiary households at 9 villages before and after support from the Project

The data that can be used for comparison of sales before and after the Project are limited. As shown in the table below, there are some households at the villages that more than doubled their average sales.

might have shared a part of the seeds with a non-beneficiary household.

District/city	Dien	Bien		Dien Bien Dong				Dien Bien Phu		
Commune/ward	Nua Ngam	Thanh An	Keo Lom		Na Son	Pu Nhi	Ta Leng		Noong Bua	
Village	Sai Luong	Phieng Ban	Tia Ghenh C	Huoi Mua A	Na Phat A	Hang Tro B	Na Nghe	Ke Nenh	Phieng Bua	
No of HH that reported sales amount between 2 periods	3	-	-	20	2	-	2	5	21	
Increase in sales over	the amou	int before s	support f	rom the P	roject (If i	t is the sar	ne, the nu	mber will	be 1.0)	
Beneficiary HH	1.4	-	-	1.9	2.2	-	2.5	1.0	1.1	
Non-beneficiary HH	1.5	-	-	2.4	-	-	1.4	1.0	-	
Average	1.4	-	-	2.0	-	-	2.0	1.0	1.1	

Table 3-38: Increase rate in sales over the amount before support from the Project

For example, the case at Phieng Ban village will be described below. At the village, spring-summer vegetable seeds were provided to 20 households while autumn-winter vegetable seeds were distributed to 44 hous eholds. Cultivation and sales conditions of autumn-winter vegetables were reported from Phieng Ban village as in the table below.

Households that responded	Home vegeta- ble garden	Fence	Production of compost	Fertilizer applied (cow dung)	Home consump- tion	Sales in the village	Sales in the markets	Sales to middlemen	Total sales (Mil. VND)		
Before support from the Project (number of households)											
Autumn-winter vegetable beneficiary HH	25	15	6	16	25	3	2	3	N/A		
Non-beneficiary HH	8	2	1	4	6	1	0	0	N/A		
Total	33	17	7	20	31	4	2	3	N/A		
After support fro	om the P	roject (1	number of ho	useholds)							
Autumn-winter vegetable beneficiary HH	29	29	28	27	29	15	4	2	6.5		
Non-beneficiary HH	6	6	6	6	6	3	2	0	1.2		
Total	35	35	34	33	35	18	6	2	7.7		

Table 3-39: Comparison of conditions of vegetable cultivation by beneficiary and non-beneficiary households at Phieng Ban village before and after support from the Project

Large differences have been observed before and after the support from the Project in terms of existence of fences surrounding home vegetable gardens, production of compost, and application of fertilizer and so on. In addition, the number of households that sold vegetables within the village has increased from 4 to 18. The village head, among others, pointed out that they did not used to make beds for vegetable cultivation, but started making beds after attending training courses on vegetable cultivations. When JPT-LDC visited other villagers, it also observed or heard that villagers had put fences around their gardens, produced and applied compost, and sold vegetables. The above data has supported these observations and information of JPT-LDC.

It is noteworthy that home vegetable cultivation has shown high profitability. According to the interviews, a farmer earned cumulative sales amount of 0.4 million VND from a single chayote and another gained sales of 0.6 million VND from coriander cultivated on one ridge (about 15  $m^2$ ).

In particular, villagers at pilot sites close to Dien Bien Phu city are proactive in selling vegetables. At the pilot site located close to the city, a household, who has adopted contour line cultivation practice, reported that they had sold autumn-winter vegetables from 2012 in the markets and earned a total of 3.0 million VND. A shift from self-consumption to livelihood development has started taking place earlier than expected. Households can start activities without heavy burdens as home vegetable garden does not require a big initial investment or much labor, which helps promote the activity. Since households that have gained income from sales secure seeds by themselves, they are expected to develop in a positive direction, receiving only technical assistance and monitoring from the Project from now on.

According to the result of the 2012 activity review and 2013 planning workshops held in December 2012, the villagers mentioned that they would be able to continue cultivating vegetables by themselves, purchasing necessary seeds as they learned the technique through two-seasons of experience. Hence, the activities for 2013 were mostly agreed that "the villagers continue to cultivate vegetable gardens by themselves" in most of the villages. Under the support of SUSFORM-NOW, an upper ceiling has been set for the size of the home vegetable garden in order to ensure improvement in the technology. Based on the opinion of the villagers, they expect that home vegetable garden activities may contribute to their increased livelihood by enlarging their garden/vegetable farm, which enables them to produce enough surplus to sell. In addition, farmers who made use of liquefied fertilizer from biogas plants felt its effects on increasing the harvesting volumes of vegetables. If they start applying organic resources on their agricultural land, unused so far, it will contribute to conservation of soil and sustainability. It is also expected to inhibit the forest destruction by enlarging agricultural land.

### 3.7 Fruit tree plantation

It takes three (3) to four (4) years for the fruit trees, distributed by JPT-LDC, to bear fruits. The results are yet to be seen at the end of activities of JPT-LDC. In addition to the questionnaire-based interview survey, a monitoring survey was conducted on the pruning practices introduced by JPT-LDC in order to evaluate future income prospects.

After the training workshop on fruit trees pruning, JPT-LDC examined how pruning had been carried out. Then, JPT-LDC experts again advised and instructed the households they visited. The monitoring sheets concerning the pruning practice were distributed to the village heads in the beginning of December 2012 and collected at the end of January 2013. R ecords in the monitoring sheets have been confirmed and collected so far from 6 villages as shown in the table below. Pruning scissors were provided to village heads for use by villagers. Depending on the village heads' attitude toward pilot activities and also their administrative capacities, details of the monitoring sheets vary. The monitoring sheet shows the frequency with which pruning scissors were used together with the names of tree species. There are more villagers that used pruning scissors at Phieng Ban and Na Nghe as seen from the table below. Among fruit tree species, longan, litchi, guava and pomelo were the main tree species for which pruning was conducted.

The reasons why famers did not prune were, among others, because they are afraid of a decrease in harvesting volumes by pruning branches; or they were not confident enough of the pruning techniques after having attended only one training session. New technologies always require some time to be disseminated. However, there are one or two villagers at each village, who made sincere effort on pruning. If the quality and harvesting volume of the fruit trees of those villagers improve, it is considered that other villagers will understand the importance of pruning and this technology will be quickly and widely disseminated.

Village	Phieng Ban	Tia Ghenh C	Na Phat A	Hang Tro B	Na Nghe	Phieng Bua	Total
No. of pruning scissors provided	5	3	3	3	3	3	20
No. of HH pruned	24	1	2	3	7	4	41
Tree species for which pruning wa	as conducted	and the numb	er of prunin	g events			
Longan	24	0	0	3	3	3	33
Lichi	4	0	0	3	0	3	10
Guava	3	0	0	0	5	1	9
Pomelo	3	0	2	0	2	1	8
Mango	3	0	0	3	0	0	6
Lemon	2	0	2	0	2	0	6
Peach	0	1	0	2	3	0	6
Dalbergia	0	0	0	0	3	0	3
Dracontomelon	0	0	0	0	2	0	2
Macadamia	0	0	0	0	2	0	2
Star fruits	0	0	2	0	0	0	2
Plum	0	0	0	0	0	1	1
Bonsai	0	0	0	0	0	1	1
Kaki	0	0	0	0	1	0	1
Total no. of pruning events	39	1	6	11	23	10	90

 Table 3-40: Pruning practice of fruit trees

If farmers practice what they have acquired in accordance with the growth of fruit trees from now on, the quality and production volume of fruit trees is expected to improve, enabling sales as well as sel f-consumption of fruits. It is also possible to promote changes from slash-and burn-agricultural land, centering on cassava and maize, to fruit gardens, etc. Production periods of fruit trees last for 10 to 30 years. Hence, they are expected to contribute to forest conservation.

# 3.8 Contour line cultivation

One farm household at Ke Nenh village practiced the contour line cultivation in his sloped land. As described before, this household pointed out that sweet potato planted in between contours had been growing well, making it easier for him to secure pig feeds. Once farmers are able to understand the advantages of contour line cultivation, it is expected to have effects on prevention of slash-and burn-practice and occurrence of wildfires reducing destruction of forests.

# 3.9 Pe Mong wine and Chit broom production activities

According to the information from the leader and a member of the group, the production and sales volume of Pe Mong wine (total production and sales of five members) during the period from October 2012 to February 2013 is summarized as in the table below. The production volume during this period was 1,730 liter, out of which 1,417 liters were sold particularly before

Tet holidays.

Item		2012		2013			Total
		October	November	December	January	February	Total
Unit sales	VND/L	30,000	30,000	35,000	35,000	35,000	
Tatal	Production (L)	292	356	429	588	65	1,730
10121	Sales (L)	214	268	375	520	40	1,417

Table 3-41: Production and sales volume of Pe mong wine from October 2012 to February 2013

Although it has not been confirmed, productivity has reportedly increased from 4 to 6 liter of wine per 10 kg of corn to 8 liter of wine per 10 kg of corn. Under the support of JPT-LDC, the technical and equipment support was extended, includig introduction of new yeasts, changes in preparation of corns and distillation method, and provision of new source pans. It is considered that these are important contributing factors to productivity increase.

In terms of the sales price, JPT-LDC was earlier informed that the price of Pe Mong wine was 20,000 VND/liter in March 2012 and 25,000 VND/Liter in October 2012, respectively. The table above shows that the unit sales price has been further increased to 35,000 VND/Liter since December 2012. If comparison is made with the case where the sales price remains at 25,000 VND/liter and 30,000 VND/liter over the same period, the sales increase amounts to about 14.2 million VND and 7.1 million VND, respectively. Thus the price factor of sales increase alone is found substantial even if the inflation<sup>15</sup> is taken into account.

Chit broom making activities was started when completing the training courses. Thus, their activities have yet to produce tangible benefits for livelihoods development. Considering that the villagers' lives are nearly at a self-sufficient level, the activities are also considered meaningful as a reference when the Project activities are deployed inside a village or outside the pilot sites because villagers have been provided opportunities to pay attention to locally available resources, which can be used as a measure for livelihoods development. It should be pointed out that as a large contributing factor behind development of these activities, they used to produce and sell local wine and collect and sell raw materials (Chit).

<sup>&</sup>lt;sup>15</sup> CPI in February 2013 rose by 7.02 % from the same period in 2012 (Web-site of the General Statistics Office http://www.gso.gov.vn).

# 4 Issues and measures taken in implementing activities of JPT-LDC, and recommendations

This chapter describes issues encountered and measures taken to overcome the issues in the course of implementing the activities of JPT-LDC together with lessons learned and recommendations.

- 4.1 Selection of Livelihoods Development Activities
- 4.1.1 Potential activities to be introduced from the expert points of view

The needs of villagers vary, and the "needs" and the "wishes" are often mixed. During the needs assessment, it is necessary to distinguish the needs from wishes and confirm the feasibility of the proposed activities. In addition, it is also effective to propose other potential activities from the expert point of view, with reference to the condition of the target area. Under the activities of JPT-LDC, at the beginning, activities such as construction of biogas plants and introduction of home gardens were not proposed as priority activities from the villagers. However, having learned the condition of the village and the living standard of the villagers, the JPT-LDC identified the feasibility of those activities and initiated and demonstrated them. As a result of the 1.5 years of experience of JPT-LDC, the effectiveness of those activities was confirmed, with the obvious outcome of about 70 biogas plants established and an increase in cash income through vegetable home gardens.

# 4.1.2 Review of livelihood development activities

The table below summarizes durations required for realization of effects of livelihoods development activities (either short, medium or long term), the amount of the initial investment (either small, medium or large), operation and maintenance expenses (either small, medium or large), relation with forest conservation and management (weak, medium or strong) and review results of the activities (either low, medium or high). The review results are based on the activities supported by JPT-LDC. For example, improved cooking stoves and home vegetable gardens produce benefits in the short-term and households, which have difficulties in bearing expenses and risks required for animal-raising, are able to undertake these activities. Especially, these short-term activities are effective when livelihoods development activities are initially introduced to villagers. Following up these activities, it is good to introduce biogas plants and fruit tree plantations, which are expected to bring about impact on forest conservation.

	Effects on livelihoods development			Relation	
LDC activities	Duration required for realization of effects	Initial invest- ment	Opera- tion and mainte- nance	with forest conserva- tion and manage- ment	Review of activities (low, medium or high)
Improved cooking stoves	Short	Small	Small	Medium/ strong	(High) With relatively small investment, effects will be realized in the short-term. It is possible to support poor households with stoves. Therefore, villagers can be given equal opportunities to participate in the Project.

Table 4-1: Activities supported by JPT-LDC and characteristics

	Effects de	on livelih velopment	oods	Relation with forest	
LDC activities	Duration required for realization of effects	Initial invest- ment	Opera- tion and mainte- nance	with forest conserva- tion and manage- ment	Review of activities (low, medium or high)
Biogas plant (PE-type)	Short	Medium	Small	Medium/ strong	(Medium) It requires a medium-level investment although the amount is smaller than that required for a brick-type biogas plant. Effects will be realized in the short term. In areas where transportation access is limited, it is possible to utilize PE-type biogas plants. Farmers that feed the small number of animals will be able to utilize them. The important point is to keep the construction and operation and maintenance system of biogas plants run.
Biogas plant (brick-type)	Short	Large	Small	Medium/ strong	(Medium) Benefits are expected in the short term, but the investment amount is a bit large. For the convenience of transporting materials required for brick-type plants, transportation access to the areas should be good. The important point is to keep the construction and operation and maintenance system of biogas plants run.
Home vegetable garden	Short	Small	Small	Weak/ medium	(High) The support requires a minimum amount of investment. Including sales of vegetables, effects will be realized in the short-term. It is possible to support households with vegetable cultivation even if they face difficulties in adopting animal-raising. Therefore, villagers can be given equal opportunities to participate in the Project.
Chicken-raisi ng	Short	Small/m edium	Small/m edium	Weak/ medium	(Medium <sup>Note1</sup> ) Although the initial investment is relatively small, operation and maintenance expenses such as feed will be required to a certain extent. It is possible to realize benefits in the short term, but it is necessary to improve raising techniques such as feed and disease prevention. The important point is to run the revolving system smoothly. Therefore, effects of the activity will be enhanced at groups where leaders have good development capacity and group members share a good sense of solidarity.
Processing of local resources	Short	Medium <sub>Note8</sub>	Small/m edium <sub>Note8</sub>	Weak/ medium	(Medium <sup>Note2</sup> ) If it is not technically difficult to produce products, benefits can be expected in the short term. In general, the relation with forest conservation and management is weak, but the relation can be strong if raw materials like chit, which is used for broom-making and at the same time, expected to contribute to conservation of soils and prevention of erosion, are utilized. The important point is existence of local resources and basic technological skills of the local people to adopt new technologies.
Pig raising	Short/medi um	Medium/ large	Medium/ large	Weak/ medium	(Medium) The initial investment is large, but it is possible to realize benefits in the short term. It is necessary to improve raising techniques such as feed and disease prevention. The important point is to run the revolving system smoothly. Therefore, effects of the activity will be enhanced at groups where leaders have good development capacity and group members share a good sense of solidarity. Effects will be higher at villages where a certain

	Effects on livelihoods development			Relation		
LDC activities	Duration required for realization of effects	Initial invest- ment	Opera- tion and mainte- nance	with forest conserva- tion and manage- ment	Review of activities (low, medium or high)	
					number of villagers are ready to bear inputs for pig-raising.	
Fodder	Short/medi um	Small	Small	Medium	(High <sup>Note3</sup> ) With relatively small investment, effects will be realized in the short and medium term. If fodders are planted on steeply sloped lands or around fish ponds, good effects on soil conservation and prevention of soil erosion are expected.	
Contour line cultivation	Short/medi um/Long	Small	Small	Medium/ large	(High <sup>Note4</sup> ) With relatively small investment, effects will be realized in the short, medium and long term, depending on how crops are combined with one another. If income sources are limited to a single crop like cassava and maize on steeply sloped lands, the contour line cultivation will provide villagers with opportunities to diversity the crops. In addition, by combining it with NTFP and promoting rural industries, it is possible to diversify income sources.	
Fish raising	Medium	Medium	Medium/ large	Small/ medium	(Medium <sup>Note5</sup> ) It is necessary to improve raising techniques such as feed and disease prevention. The important point is to run the revolving system smoothly. Therefore, effects of the activity will be enhanced at groups where leaders have good development capacity and group members share a good sense of solidarity. Activities will be undertaken at villages where fish ponds already exist or villagers can make ponds without difficulties.	
Fruit trees	Medium/ long	Small	Small	Medium	(Medium <sup>Note6</sup> ) With relatively small investment, effects will be realized in the medium and long term. At the areas where villagers can monitor fruit trees thoroughly or at home gardens during the harvesting period, it will be suitable to plant fruit trees. When fruit trees are planted at farming areas, it is expected to work as a measure to prevent forest fire because fruit trees are vulnerable to fire Note 9.	
Cow-raising	Long	Medium/ large	Small	Weak/ Medium	(Medium <sup>Note7</sup> ) The initial investment is relatively large, the pregnancy period is longer and the number of calves to deliver at one time is small, implying that the revolving efficiency is lower. Villagers need to have grazing lands. Effects are expected in the long term. The important point is to run the revolving system smoothly. Therefore, effects of the activity will be enhanced at groups where leaders have good development capacity and group members share a good sense of solidarity.	

Notes 1 to 7: Benefits have not been realized during the activity period of JPT-LDC except some of them. Therefore, the review results are presented with some estimate based on experiences gained through the activities of JPT-LDC. Note 8: Investment and operation & maintenance costs depend on the size and technical level of facilities to process products.

Note 9: Fruit trees are vulnerable to fire. Once affected by fire, fruit trees may not bear fruits in that year or for several years thereafter. The trees may even die after being affected. Since these factors may result in decrease in income, psychological effects will lead to prevention of forest fire by farmers.

4.1.3 Synergy among the various livelihoods development activities provided by the Project, considering the linkage with forest conservation and management

It is effective to design a sequence of activities supported by the Project, considering that the majority of activities in the villages relate to each other and have potential to create synergistic effects.

Under the LDC activities, the synergy effects between various activities were confirmed: utilization of excrement from animals provided by the Project for use in biogas plants drives the application of liquefied fertilizer from biogas plants for gardens; and the use of biogas for reduction in firewood consumption; contour line cultivation for growing vegetables and fodder grass provides for the animals supported by the Project; and so forth. The below table explains the relationship between forest management and livelihoods development activities supported by JPT-LDC. The table classified the activities into those with direct impact and indirect impact on promotion of forest management, together with possible combinations with other LDC activities that are expected to produce synergetic effects. For example, a lot of firewood is used for cooking animal feed at the pilot sites. If households that feed pigs are provided with large improved cooking stoves for cooking animal feed, the volume of firewood consumption is expected to be reduced to a great extent.

Effects on Promotion of FM		LDC activities	Expected outcome	Activities with synergic effects to be expected
	Increase of trees	Fruit tree planting	<ul> <li>Improvement of nutrition</li> <li>Greening the village</li> <li>Improvement of livelihoods in mid-long term</li> <li>Obtaining technology for gardening &amp; silviculture</li> </ul>	<ul> <li>Home garden (productivity increase through multifaceted utilization of land by planting fruit trees at home garden, contribution to risk diversification, complement benefits that is expected in a medium-and long-term for fruit tree planting)</li> <li>Contour line cultivation (productivity increase through soil conservation)</li> <li>Application of technology to afforestation</li> </ul>
Direct Effects		Improved cooking stove	<ul> <li>Reduction of quantity of firewood &amp; collection time</li> <li>Saving cooking time</li> <li>Suppression of reduction of firewood</li> <li>Increase of leisure time &amp; doing other activities</li> <li>Encouragement of participation in the Project</li> </ul>	• Pig raising (big improved cooking stove for cooking pig feed in lieu of existing stoves)
	Prevention of cutting trees for firewood	Introduction of biogas plant	<ul> <li>Reduction of quantity of firewood &amp; collection time</li> <li>Saving cooking time</li> <li>Suppression of reduction of firewood</li> <li>Improvement of sanitary condition</li> <li>Improvement of productivity of vegetables and fruits</li> <li>Increase of leisure time &amp; doing other activities</li> </ul>	<ul> <li>Cow raising, pig raising (use of excrement)</li> <li>Contour line cultivation, home garden, fruit tree planting (application of liquid fertilizer for crops and fruit trees, which will be produced by biogas plants, at places where transport access is relatively better)</li> <li>Fish raising (application of liquid fertilizer for plankton, etc., which will become feed for fish)</li> </ul>

Table 4-2: The relationship between Livelihoods Development Activities and Forest Management

] Pro	Effects on motion of FM	LDC activities	Expected outcome	Activities with synergic effects to be expected
Decrease of slash & burn		Contour terrace plowing	<ul> <li>Prevention of soil erosion</li> <li>Sustainable sloping cultivation in mountainous area</li> <li>Livelihoods development in mid-long term</li> <li>Acquisition of fodder grass, firewood, fruit, and vegetables</li> </ul>	<ul> <li>Fruit tree planting (productivity increase through multifaceted utilization of land, contribution to risk diversification)</li> <li>Fodder grass (planting fodder grass along contour lines)</li> </ul>
	cultivation	Fodder grass	<ul> <li>Acquisition of feed for livestock and fish</li> <li>Prevention of soil erosion &amp; runoff</li> <li>Contribution for soil fertilization by utilizing green manure</li> </ul>	<ul> <li>Contour line cultivation</li> <li>Small scale animal raising (use for animal feed)</li> <li>Fish raising (use for fish feed)</li> </ul>
		Organic vegetable farming in home garden	<ul> <li>Improvement of nutrition</li> <li>Income generation in short-term</li> <li>Acquisition of agriculture technology</li> <li>Encouragement of participation in the Project</li> </ul>	<ul> <li>Fruit tree planting productivity increase through multifaceted utilization of land)</li> <li>Biogas plant (utilization of liquid fertilizer)</li> <li>Application of the technology for contour terrace plowing</li> </ul>
		Cow raising	<ul> <li>Income generation in long term</li> <li>Materials for organic fertilizer, manure</li> </ul>	<ul> <li>Biogas plant (excrement)</li> <li>Fodder grass (use for animal feed)</li> </ul>
		Pig raising	<ul> <li>Income generation in mid- long term</li> <li>Materials for organic fertilizer, manure</li> </ul>	• Biogas plant (excrement)
ect effects	Decrease of forest degradation through	Chicken raising	<ul> <li>Income generation in long term</li> <li>Improvement of nutrition</li> <li>Materials for organic fertilizer, manure</li> </ul>	_
Indire	improving livelihoods	Fish raising	<ul> <li>Income generation in mid-long term</li> <li>Improvement of nutrition</li> <li>Securing water (for dry season)</li> </ul>	<ul> <li>Biogas plant (utilization of liquid fertilizer)</li> <li>Fruit tree, fodder grass (effects of planting trees around pond, which makes shade and improves water quality and productivity in the long term)</li> </ul>
		Processing products utilizing available natural resources for opening small business	<ul> <li>Income generation in short-term</li> <li>Value adding on NTFP &amp; other products</li> <li>Diversification of agriculture products</li> </ul>	<ul> <li>Contour terrace plowing (cultivation of Chit, maize)</li> <li>Home garden</li> </ul>

# 4.1.4 Combination of various types of activities that will require different gestation period to generate benefits

It takes a certain period of time to obtain a positive outcome from some activities. In case of LDC activities, various options were made available. Some activities were supposed to generate relatively faster benefits. They include Lao-type improved cooking stoves, vegetable cultivation at home garden, biogas plants, pig-raising and chicken-raising. The effects of these activities started to appear within one year after starting the activities. Once the benefits are foreseen or realized, the villagers are ready to burden the cost and even the risks, which are comparable to expected benefits. Other activities may need a longer time to produce benefits. They are, for

example, fruit tree plantations, cow-raising and fish-raising. These activities may require longer than one year to see the results of the activities. Availability of alternative livelihoods development activities with different gestation periods has expanded villagers' opportunities to participate in the Project.<sup>16</sup> If the livelihoods development is supported to compensate for tree planting and villagers are offered to implement activities that produce only short-term benefits, the effects of the support could be tentative without involving them in sustainable forest management. In order to avoid such circumstances and realize sustainable forest management, it will be important to maintain incentives of the local people for sustainable forest management by combining activities that will generate benefits in the short-term with activities that will being about benefits in the medium and long term.

In the mid-term review, it was pointed out that some of the current livelihoods development activities do not have clear linkage with forest protection and sustainable forest management. Therefore, the necessity of sorting out livelihoods development activities with certain criteria was recommended. Combination of the activities with short-term benefits and medium-and long-term benefits will be considered effective in promotion of forest conservation and sustainable forest management. Furthermore, pig-raising produces short-term benefits, but requires the largest amount of firewood at present, With the introduction of large-sized improved cooking stoves and biogas plants, the consumption volume of firewood could be reduced. Once villagers recognize its convenience, they are likely to pursue for further convenience. If villagers are taught how to reduce a time required for firewood collection and secure a stable supply of firewood by planting *Acasia Mangium*, etc. around their residences and near-by agricultural lands, their motivation for tree planting will be strengthened. Thus, activities that reflect needs of the local people (or activities with high popularity among them) can be combined promptly with other activities as a step to motivate villagers for forest conservation activities.

# 4.1.5 Identification and review of local resources for opening small business

When talking about technical cooperation and/or investment, the people tend to image the introduction of something new from outside. However, for making the activity easy to start for the villagers and make it sustainable, it is effective: 1) to utilize the local resources by recognizing their value; 2) to provide the necessary knowledge and/or appropriate technology, with flexibility, built upon the indigenous technology, for adding value on the local available resource; and 3) to increase the initiative of the villagers by demonstrating the visible effectiveness of the introduced activities of the Project.

Villagers at pilot sites, especially those living in remote areas, live nearly self-sufficient lives. In order to provide them with a good opportunity to review locally available resources, villages were assisted to participate in the Dien Bien festival, a trade fair which was organized in Dien Bien Phu city, and to bring salable products from their villages and gain experiences in selling them at the fair. It was the first time for the villagers to participate in this kind of events, which provided them with chances to review local resources at respective villages. It is considered that these experiences resulted in the start-up of group businesses such as Pe Mong wine and chit broom-making, which make use of local resources.

### 4.1.6 Market survey after screening the activities

Before starting the LDC activities, market surveys were made to better understand the potential for products in the pilot site to support livelihoods development activities. It was found that it

<sup>&</sup>lt;sup>16</sup> For example, fruit trees that are expected to produce medium-and long-term benefits can be combined with vegetable cultivation that is to generate short-term benefits. It is considered that under this arrangement, villagers could find it easier to participate in the Project.

is more effective to conduct a market survey, after screening the candidate products and/or activities in the respective villages, because the socio-economic and geographical conditions and potential for product from each village differ and the conditions of the villages are not equal.

### 4.1.7 Combination of livelihoods development activities

Based on review results of respective livelihood activities, synergic effects among them, combination of activities with short-term benefits and medium-and long-term benefits, a set of activities can be presented as shown in Table 4-3 below. Because it is necessary to assess needs of the local people when activities are put in practice, it may be difficult to limit activities to only this combination. Therefore, the combination shown in the table below should be considered as one example, which JPT-LDC found effective based on the activities undertaken so far. Based on the survey results of household cash income and expenditure described in Chapter 3, households are classified into the three categories in accordance with the level of gross cash income and the number of pigs owned. The table shows a combination of activities, which are considered effective depending upon the level of income.

A relatively low-income class household is modeled after non-beneficiary households identified through the cash income and expenditure survey (An average annual gross cash income from agriculture is 6.1 million VND. The average number of pigs per household is 1.3 and the number of households that raise pigs is 4 out of 12 hous eholds.). For those low-income households, it is considered to introduce improved cooking stoves that will put fewer burdens on beneficiaries, home garden and contour line cultivation that will provide them with a measure to earn cash income in the short term. A medium-income class is expected to raise 3 to 6 pigs (local varieties) and improve its pig-raising operations and introduced a PE-type biogas plant in addition to the activities carried out by low-income class households (i.e., improved cooking stoves, home garden and contour line cultivation). Relatively high-income class households are considered to feed 7 pigs or more. This income class is expected to bear a self-funding portion of pig-raising operations and brick-type biogas plants to a certain extent. As some of the relatively high-income households raise large-sized domestic animals, fodder cultivation is put together as well for this income bracket. Support to implementation of these activities will be carried out in parallel with support in the soft aspects such as organizational development of forest management and livelihoods development groups (FMLDG) and IGs, fund management, animal-raising technologies. In addition, this classification is described as a dynamic process, in which a household does not remain fixed in a certain class but could move up to a higher class as time goes.

	Level of income			
	Annual gross cash income from agriculture (Million VND)	Number of pigs owned (heads)	Combination of activities	Remarks
Relatively high- income	25 or above	7 or above	Pig-raising + brick-type biogas plant + fodder	Pig-raising and brick-type biogas plant, which will use excrement of pigs, are combined. Liquid fertilizer will be applied at home gardens. Since some relatively high-income households raise large-sized domestic animals, fodder will be also planted.

Table 4-3: Combination of activities that is considered effective (Example)

Level of income				
	Annual gross cash income from agriculture (Million VND)	Number of pigs owned (heads)	Combination of activities	Remarks
Medium income	10 to 25	3 to 6	Pig-raising + PE-type biogas plant	Local varieties of pigs like Mong Cai, which will not consume a larger amount of feed, will be combined with contour line cultivation and home garden, which could secure a supply of pig feed and at the same time, increase cash income. PE-type biogas plant, which makes use of pig excrement, will be installed and liquid fertilizer from the plant will be applied at home garden.
Relatively low- income	10 or below	0~2	Improved cooking stove, home garden (possibly combined with fruit tree plantations) + contour line cultivation	Stoves and home garden, respectively, aim to decrease consumption volume of firewood and increase cash income through sales of vegetable. Contour line cultivation is expected to prevent soil erosion, enhance soil conservation and conserve water contents in the soil, leading to sustainable agricultural practice.

Note: Annual gross cash income and the number of pigs owned are estimated based on the results of household cash income and expenditure survey.

At the implementation stage, it may be difficult to carry out these activities at once due to limited availability of the C/P and extensionists. In this case, it is possible to adopt a phased-approach, with which improved cooking stoves and home garden will be first introduced, as an entry-point activity, to all the villagers including relatively low-income households. By fostering trust with villagers and supporting them with organizational development and technology transfer, medium-income and relatively high-income class households will be supported with pig-raising operations and biogas plants. It is important to screen beneficiaries and at the same time, encourage them to participate proactively in the Project by setting conditions such as formation of IGs and fulfillment of technical requirements prior to the support from the Project. The technology transfer scheme among farmers (described later in Figure 4-4) and the study-tour model to visit advanced areas (Figure 4-5), which can be applied to IGs, will be effective tools to support implementation of the activities. Figure 4-1 below has been prepared based on Table 4-3 by putting the number of pigs owned on the y-axis as a proxy variable for household annual gross cash income. The figure describes combination of activities depending on the number of pigs owned together with the phased-approach for implementation of activities. The activities introduced to lower-income class households are introduced to higher-income class households with some modifications as well. The figure also depicts a dynamic image that lower-income class households will move upward.



Figure 4-1: Phased-implementation of combination of livelihoods development activities classified by the number of pigs owned and progress of livelihoods development

- 4.2 Issues and actions relating to implementation arrangements
- 4.2.1 Ensuring the capacity development of the ward/commune level facilitators, extensionists and village leaders

The project implementation mechanism during the JPT-LDC period is shown as below. The JPT-LDC formed a team with Vietnamese experts to support the pilot activities in the pilot sites, collaborating with the C/P. During the implementation of the Project, JPT-LDC collaborated with various resource persons/agencies depending on necessity of specialists such as masons for biogas plant construction, trainers of livestock and fish raising techniques, and so on. The JPT-LDC also tried to improve the capacity and self-reliance of the villagers by strengthening the organization (FMLDG, IG), not only by improving their technical capacity.



Figure 4-2: The Project Implementation Mechanism during JPT-LDC

After completion of the Project, the C/P and the agencies to which the C/P belongs are supposed to continue their support to the activities. It is expected that the organizational capacity of FMLDG and IGs, which are supported under the Project, will be strengthened to enable them to request their needs for the relevant government and other agencies and secure necessary goods and services.



Figure 4-3: The Implementation Mechanism after completion of the Project

JPT-LDC continued the series of trainings for sustainable development of the activities, targeting the IG leaders, village heads, and staff of ward/commune PCs, which are immediate administrative bodies to the villages. The FMLDG has been formulated in the villages in the pilot sites and the regulations and other issues related to its functions are still under discussion. Thus, the continuous trainings to ward/commune staff, and other trainings relating to management of group such as organizational and financial management will be significantly essential from now on.

The role of village leaders, or village heads, is deemed increasingly important as well. As their range of responsibilities was re-confirmed, the monitoring system involving commune-level extensionists and village heads was established, and it was requested for the village heads to monitor and coordinate the IGs and other activities. Monitoring reports were submitted monthly by the village heads to the respective commune and ward offices.

To the extent possible, JPT-LDC has tried to involve commune-level staff as well as village leaders. The candidates of the study tour in Japan, which was carried out in April 2012, had been planned to include commune-level staff. As a result, four (4) out of the 12 participants selected in the tour were either CPC chairmen or vice chairmen. These participants from the CPC have played a vital role in assisting implementation of some of the pilot activities after they returned home to Vietnam. In addition, commune-level staff and village leaders were encouraged to participate in the study tour to Kon Tum province conducted in March 2012 and consequently, two (2) staff of CPC and nine (9) village leaders took part in the tour. Furthermore, JPT-LDC organized training workshops specifically designed for commune-level staff in assisting villagers to carry out pilot activities.

In this way, the periodic training targeted for commune-level facilitators, extensionists and village leaders will be a necessary and effective support of the livelihoods development activities.

# 4.2.2 Inter-department coordination at a district level

The livelihoods development activities range from livestock-raising operations such as pig- and cow-raising practices, to planting of fruit trees, installation of improved cooking stoves and biogas plants, through food processing. These activities require a good horizontal coordination among different divisions under district-level offices. However, coordination at a district level between DPMU and the district veterinary station has not necessarily been smooth. Therefore, JPT-LDC directly contacted district-level staff to request their involvement in some of the pilot activities, for instance, when dead pigs were treated, domestic animals were handed over and training workshops were conducted. In the light of the need for good horizontal coordination, changes in the membership of PMUs was made in December 2012 and the involvement of an agriculture development board, which has been set up at a commune level, is under consideration at PPMU.

### 4.2.3 Strengthening the operation and maintenance of biogas plants supporting system

Under Dien Bien DARD, there is an office responsible for promotion of brick-type biogas plants within the province. The office is in charge of the implementation of a nation-wide biogas program within the province, which MARD has carried out with cooperation from a Dutch NGO. In supporting installation of biogas plants, the office is able to mobilize trained masons and technicians within the province and if necessary, from other provinces. However, there is less availability of qualified masons of biogas plant construction in Dien Bien Province.

Taking into account these conditions, JPT-LDC trained the potential villagers at the pilot sites to be masons for construction, operation and maintenance of biogas plants. Workshops on

installation of PE-type biogas plants were organized in March and August 2012 w hile a workshop on installation of brick-type biogas plants was held in December 2012 with follow-up training in January 2013. Those who successfully completed the course were certified as village masons under the Project. There are 8 masons for brick-type biogas plants and 7 for PE-type biogas plants. The list of these masons was made available to the C/P in order to promote biogas plants during the second phase of the Project and thereafter. Depending on the need for new installation, operation and maintenance, villagers and the C/P can contact nearby masons to make use of their services. There will be further possibilities for these masons to form a builders' association to carry out their services as a business entity in the future. Furthermore, it is also necessary to point out importance of introducing a monitoring and evaluation system of performance of these masons in order to assure quality of biogas plants.

### 4.2.4 Local counterpart budgets

Aside from the points described above, another issue will be a shortage of local counterpart budgets for SUSFORM-NOW. Allowances were paid to extensionists for their monitoring and extension work starting from October 2012. These payments are made out of the JICA budgets of SUSFORM-NOW. As recommended from the result of the mid-term review, it is recommended for DARD to make further efforts to request the PPC to accelerate the process of disbursement of the budget to DARD.

### 4.3 Methods for technology transfer

### 4.3.1 Technology transfer scheme among farmers

The technology transfer scheme among farmers was examined and confirmed as effective in developing the capacity of villagers. The scheme was introduced on a trial basis at the occasion of the workshop on improved cooking stoves and biogas plants. This scheme consists of three steps, aiming to realize technology transfer from an external agent to farmers and then, from farmers to other farmers. As shown below, a farmer will "learn" from an external agent at Step 1. At the succeeding step (Step 2), the farmer will perform "self-trial" with the help of other farmers. At Step 3, the farmer will become an instructor and teach other farmers. The technologies to be applied for improving livelihoods sustainably are usually not too complicated, but simple and familiar for the villagers. On the other hand, the numbers of extensionists who can follow up the variety of activities are limited. Utilizing local resources nearby their living areas are efficient and effective for diffusion of technologies among villagers, particularly when there are not sufficient extensionists.



Figure 4-4: Three-step technology transfer scheme among farmers

### 4.3.2 Effectiveness of study tour model

A study tour is considered to be quite an effective tool to increase learning of participants where the participants gain first-hand knowledge and information on new technologies and advanced practices at places they visit. In order to enhance its effectiveness, instead of just visiting advanced areas, it is important to formulate a study program in consideration of a continuous and consistent flow of learning process. In this flow of learning process, issues and concerns are clarified prior to the study visit (preparation stage) and technologies and approaches learned at places they visited are actually applied at their home (application stage).



Figure 4-5: Study tour as a continuous and consistent flow of learning process

Among the study tours implemented by JPT-LDC, the above model was applied to the study tours in Kon Tum province, Hoa Binh province and Japan and learning has been enhanced by following the model. Furthermore, in the example of the study tour in Hoa Binh for a broom-making group, a training course on p roduction process of broom-making was incorporated in the core training program at the company the group visited. At the application stage at home (Step 3), instructors were invited from the company to the pilot site for a continuous training course on the production process, aiming to enhance the learning effects of the study tour.

# 4.3.3 Increased awareness and self-reliance

In assisting implementation of pilot activities, attention has been paid to increasing the villagers' self-reliance and enhancing their problem-solving abilities. It takes time to increase the awareness of villagers and it cannot be achieved in a short period of time. The most effective way is to include the methods for increasing the commitment of the villagers to the activities through implementation of the activities, not by lecturing or preaching the importance of them.

- i) <u>IR to ensure the commitment of villagers:</u> Villagers were asked to form IGs particularly in carrying out animal-raising activities with pigs, cows, chickens and fish, and then to agree on IRs for implementation of their pilot activities. It has been confirmed with IG members that IRs would be finalized after endorsement of the content by a commune-level PC.
- ii) <u>Establishment of IG fund</u>: When supporting villagers with pigs, cows, chickens and fish, introduction of a revolving system has been proposed. Under the revolving system, IG members were required to return a certain amount of animals and construction materials, etc. to the system co-owned by the members after an agreed period of time. In reaching a consensus among IG members, it is important to secure an amount of repayment sufficient to maintain the revolving system from the beginning.
- iii) <u>Awareness rising for minimizing the cost</u>: In order to minimize the costs for each activity with the view of sustainability, it is recommended to evaluate each stage for ways to minimize costs. For example, JPT-LDC guided villagers to form a group, which consists of three (3) households wishing to install biogas plants, for procurement of high-quality, low-cost materials. Formation of a t hree-member group has contributed to lower transportation costs.

- iv) <u>Providing opportunities to learn among villagers</u>: In assisting implementation of animal-raising trainings, some training courses were conducted jointly with villagers from other villages, expecting that villagers from different villages would mutually exchange their experiences and enhance their learning effects.
- v) <u>Utilization of models</u>: For example, a contour line model was introduced at a garden nearby the house of a farmer who volunteered to implement the model. The farmer was requested to examine and monitor its effects.
- vi) <u>Keeping records</u>: When assisting distribution of improved cooking stoves and installation of biogas plants, for example, beneficiary households were requested to record consumption volumes of firewood for a certain period of time before and after distribution of stoves or installation of plants. By recording the volume of firewood consumed, villagers were expected to confirm quantitative changes in the consumption volumes before and after introduction of stoves and biogas plants. The effect of trainings was also confirmed in the results of interviews where the villagers recognized the effectiveness of training and activities after seeing their visible results. The villagers may recognize the benefit of reduction of firewood by confirming the recorded results and understanding that it also helps to reduce the workload for fetching firewood; helps to improve their livelihoods; and even provides benefits for the village. Gradual recognition of those benefits helps to improve the awareness of villagers for improving livelihoods as well as forest management and conservation.
- 4.4 Some tips for specific activities

### 4.4.1 Tips for making the home garden activity successful

To distribute vegetable seeds, the seeds were handed over firstly to village heads who were in a position to monitor progress of preparation work by each household. Village heads were, in turn, requested to distribute the seeds to respective households. This mechanism was introduced, based on the experiences gained from distribution of vegetable seeds during the 1st season in 2012. In the 1st season, preparation work had not been carried out unless farmers really felt that vegetable seeds would actually be delivered to them although vegetable seeds were distributed based on their needs. The number of seeds per household is limited to the amount required for 100m<sup>2</sup> for several reasons as described below:

- i) Establishment of a garden is to produce vegetables for self-consumption at home and to make sure that the vegetable production technique is effective;
- ii) Currently at pilot sites, there are limited sales and purchases of vegetables;
- iii) A garden is one of the pilot activities in which farmers find it easy to participate, regardless of their income level;
- iv) The average size of the existing garden is around 100<sup>2</sup>m per household; and
- v) If the size is relatively small, it will be easier to evaluate utilization and the effects of liquefied fertilizers from biogas plants.

Cultivation methods under this model provide farmers with training opportunities such as preparation of compost, use of liquefied fertilizers from biogas plants, techniques for establishment of nurseries, care after planting and pruning techniques, which ultimately lead to improvement of technologies when sustainable agriculture is practiced on wider sloping areas in the future.

### 4.4.2 Contour line cultivation model

Although the effectiveness of contour line cultivation is obvious and suitable in the target area for improvement of productivity of sloping land cultivation as well as soil conservation, it is not easy for the villagers to realize the effectiveness of the technology without observing it directly. Accordingly, under the activities of JPT-LDC, the 5 models of contour line cultivation were established to be able to demonstrate the effectiveness of the model. The location of the models was decided to enable villagers to easily come to visit places and exchange their ideas with others. In order for these models to be utilized for extension activities, training courses were organized to train extensionists on preparation of the models (training courses include technical trainings and methods to utilize models).

This contour line cultivation model is not a so-called "showcase model", which is practiced usually by research institutions, etc. Instead, it is intended to supply agricultural products, feed for animals and materials for livelihood development by use of simple technologies at low cost as well as in a stable manner. Hence, types of crops to be introduced, kinds of hedge plants to be used for contour lines and species of trees to be planted will be different depending upon the objective of farmers to produce products. It will be possible to produce animal feeds for pigs, cows and chickens that are going to increase from now on at the respective villages. At Sai Luong, for example, it will be also possible to plant Chit (tiger grasses) that will provide raw material for broom production. Fodder grass, such as Guatemala is also useful for protection of soil erosion as well.

# 4.4.3 Outbreak of epidemics

In supporting implementation of pig-, cow-, and chicken-raising activities, the major obstacle has been an outbreak of epidemics. Among pigs delivered under SUSFORM-NOW, some pigs died due to blue ear disease. Chicks, which had been delivered, were destroyed due to suspected outbreaks of bird flu. As counter-measures to epidemics, which can be practiced on a regular basis, JPT-LDC assisted district-and commune-level staff to inform villagers of diseases; to encourage clean-up of pig sheds and spraying of disinfectant for animal sheds and surrounding areas; provided necessary vaccines to pigs and chicks; and negotiated with the supplier for extension of the guarantee period.

As for chicken-raising, the Project started to provide chicks to the respective villages in January 2013, but soon after starting the delivery, it was found that many chickens in Sai Luong village died with symptoms similar to bird flu. After discussion between the villagers and the Project, the villagers decided as follows: the commune will sterilize the village grounds; the village head and IG leader advised all villagers, not only the households who receive the chicks, to keep the all birds in sheds/cage to prevent them from entering the garden<sup>17</sup>. After installation of biogas plant, the environment of the village became obviously clean without having excreta of animals spread around. As the animal disease prevention measure was taken in the village in addition to the usage of biogas plant, the sanitary environment of the village has tremendously improved. The importance of keeping the sanitary condition of the village by proper management of livestock may be recognized by the villagers through the monitoring of each household by the village head and extensionists, which may not only prevent the disease of animals but also prevent the outbreak of disease in the whole area. Vaccination of animals is also important for preventing bird flu epidemics. Under the Project, the guarantee period of the contract with the supplier was extended to minimizing the risk. Several vaccines were also applied for the chicks. The chicks have been carefully monitored even after delivery.

<sup>&</sup>lt;sup>17</sup> As a result, it became rare to see pigs and dogs roam in the villages.

# 4.4.4 Changes in environment of raising livestock and animal health issues

Among animals delivered as part of the MIA, several of them displayed irregular signs in their health conditions. Since those animals were being fed by suppliers just before the delivery, it was considered that sudden changes in raising environment and feed were to blame along with the transportation of the animals at the later stage of the pregnancy.

Most of the villages are located in mountainous regions. Particularly, H'Mong people live in higher altitude area which becomes very cold in winter season. For this reason, special measures were taken to protect the animals; however, there were several villagers who could not apply the techniques, which affected animal health.

In November 2012, non-pregnant pigs were delivered. After confirming their adaptation to the new environment in the villages, the supplier visited villages in order to provide pigs with artificial insemination (AI).

It may also be necessary to examine simplifying procurement methods so they can be handled by villagers. For instance, villagers often expect the Project to provide high-quality pigs. However, suppliers of high-quality varieties may not be always found within the province and neighboring provinces. Identification of such suppliers may require a longer preparation process. An alternative option is to assist villagers to procure local varieties of sows (within a village or neighboring villages) so that they can search by themselves. Another option is that SUSFORM-NOW focuses more on technical guidance (such as methods to select male pigs, management for sanitation, measures to prevent diseases, what to do in the event of outbreaks of epidemics, etc.), including provision of construction materials for animal sheds, required vaccinations and initial feed, and AI support.

- 4.5 General issues concerning support for implementation of pilot activities
- 4.5.1 Strengthening of public relations along with implementation of other activities

Through the activities implemented so far, it was found necessary to strengthen PR by combining it with in-kind support and training.

From the initial stage of the activities, JPT-LDC tried to inform villagers about types of livelihood development activities to be supported. They issued and distributed LDC News that clarifies technical aspects of livelihoods development activities for villagers. As of March 2013, JPT-LDC has issued up to volume 31 of LDC News with the copies per issue ranging from 250 to 400 copies. LDC News was distributed at or sent to villages at pilot sites, CPCs, PMU and PPC. Prior to issuance, PPMU was involved in the review of the contents. Aside from LDC News, JPT-LDC introduced pilot activities through photo panels; showed a contour line model and improved cooking stoves; and displayed and sold agro-forestry-fishery processed products at the Dien Bien Phu Festival, organized at the end of April 2012. The public relations have enhanced not only understanding and involvement of villagers in implementation of livelihoods development activities. Furthermore, public relations have enabled gradual dissemination of information on the activities outside the pilot sites.

4.5.2 Utilization of Vietnamese national consultants

In promoting implementation of livelihood development activities at pilot sites, activities would be quite limited if only Japanese experts were mobilized due to language as well as cultural barriers in communicating with the C/P, staff of CPC and wards, village heads and villagers. To smoothly promote LDC pilot activities, five national experts were employed in small-scale

livestock-raising, agroforestry, agro-forestry-fishery processing and project-assisting work. National experts put in practice technologies introduced by Japanese experts but also assisted implementation of pilot activities with their own expertise, utilization of the network with other experts in the country, and identification of other national experts. This has led to further improvement of LDC activities. It will be also effective to employ an expert whose origin is the minority in the target area.

### 4.5.3 Equity issue among villagers

There is an issue on how equity (equal opportunities in this context) could be ensured among villagers when implementing pilot activities. Differences in the implementing capacities of pilot activities had already existed among villagers before they received assistance from SUSFORM-NOW. It is considered that those differences are reflected in their capacities to bear risks associated with the implementation of the livelihoods development activities that they wish to participate in.

For example, villagers who are able to receive assistance for installation of biogas plants are required to feed a certain minimum number of domestic animals. The minimum number of animals for PE-type biogas plants is less than that for brick-type biogas plants. In order for more villagers to receive benefits from biogas plants, JPT-LDC has set up the two (2) options, i.e., brick-type and PE-type biogas plants. However, since some farmers still found it difficult to access even PE-type biogas plants, efforts have been made to come up with various types of LDC options that such villagers can access. For example, the options include delivery of Lao-type stoves, chicks, and vegetable seeds and fruit tree seedlings, which require a smaller investment for participation in the Project.

### 4.5.4 Promotion of improvement of living condition and human health

The villages which installed biogas plants have recognized the value of unused excreta as a valuable energy resource, and the further usage of it has been promoted. As a result, the collection of excreta has been accelerated, and the environmental condition of the village improved significantly. In addition, toilets have been constructed in several villages. Making a habit of keeping animals in sheds to prevent disease also contributed to the improvement in the environment of the village. It is obviously that these changes also contribute to improvement of the health condition of the villagers, decreasing the diseases caused by unsanitary conditions. It may take time for the villagers to manage the animals properly and with ideal conditions, by realizing the effect on improvement of their health. The effects of the support may become more effective when the villagers realize the improvement in their health from having diverse food production and an improvement in their health thanks to the betterment of the living condition through livelihoods development activities.
#### Period Major reports Japan/ Vietnam Breakdown of Work Items Work Item Products through technical cooperation beginning of October, 2011 (1-1) Clarification of the approach and work plan Japan (1) Preparation of the inception report (1-2) Collection and analysis of the exisiting data and information Inception Report (October 2011) (1-3) Preparation of the inception report (2-1) Study on the results of the October - middle of November, 2011 market study (2) Study on feasibility and effects of introducing measures into pilot (2-2) Study on feasibility and effects activities of introducing measures into the pilot activities (2-3) Preparation of the study report Study Report (March 2013) (3) Sharing and discussions on the (3-1) Sharing and discussions on the middle of November December, 2011 results among the concerned results among stake holders at JCC personnel of SUSFORM-NOW Based on pilot activities and needs of C/P, methods will be studied to develop their capacities. The following can be considered (4) Incorporation of results of the (4-1) Approval of 2012 APO at JCC study and discussions into 2012 APO Participation in exhibitions and other events (Dien Bien Phu festival, etc.) Monthly report (5-1) Study conditions after commencement of pilot activities and also 2011 and 2012 APO Public relations activities (every month) (5) Capacity development of C/P Various methods for technical trainings (5-2) Supports and capacity development of the C/P concerning implementation of pilot activities, based on the above study results (OJT and TOT) Vietnam Experiencing of process of selecting model farmer households and/or Continuously implemented from January 2012 establising demonstration plots, etc. (5-3) Supports in preparaing and implementing LDP of annual IP for 2013 Study Tour \_\_\_\_\_ ${\sf Case \ study \ of \ good \ extension \ practices}$ (6-1) Study on monitoring method (preparation of monitoring formats) Monitoring methods (6) Progress monitoring of livelihood (6-2) Implementation of monitoring development activities and feedback (6-3) Revision of monitoring method depending on the necessities (6-4) Setting-up of monitoring system of livelihodd development activities by making use of Government extension system (7-1) Preparation of Progress Report 1 of the project Progress Report 1 (29 February, 2012) January - April, 2012 (8-1) Preparation of the study tour in Japan Japan (8) Implementation of study tour in Japan (8-2) Implementation of the study tour in Japan (8-3) Sharing of results of the study tour in Japan (9) Preparation of technical manual to disseminate mutually-sustainable approaches, which will balance participatory forest management and livelihood development of local people Continuously implemented from February 2012 Technical Manual (October, 2012) (9-1) Preparation of manual (9-2) Revision of manual (10-1) Recommendation on expansion of (10) Recommendation on expansion pilot sites and sustainable development Conduct impact study of pilot sites and sustainable development of pilot activities, and supports to policy formulation and institutionalization of pilot activities Vietnan (10-2) Supports in policy formulation and institutionalization (11) Hold a seminar workshop to share results of livelihood development activities (11-1) Hold a seminar workshop October 2012. (11-2) Follow-up of a seminar workshop

### Appendix 1: Work Flow

March 2013	(12) Assistance for the mid-term review (13) Preparation of project	DCD (March 17, 2012)
-	completion report	PCR (March 15, 2013)
nuary		Photo albumn (March 15, 2013)
eر ا		Documents/materials collected (March 15, 2013)
,	 Legend: Completed Planned/On-going Additional TOR under extended period	

(7-2) Preparation of Progress Report 2 of the project

> Progress Report 2 (31 December, 2012)

## Appendix 2: Detailed Plan of Operation and the Achievement

Time period	d				J	apan's	Fisca	l Year	2011															Japan's Fisca	l Year	2012									
Work items	0	ctober	No	ovem	iber	Decer	nber	Janu	ary	Febr	ruary	March	_	April		May	y	Ju	ne	Jul	y	Aug	ust	September	Octo	ber	Nove	mber	Dece	ember	Jan	uary	Feb	ruary	March
[Work in Japan] (October 2011)													_																						
(1) Preparation of the inception report		1		_		_							_	_								_													
(1-1) Clarification of the approach and work plan		]																																	
(1-2) Collection and analysis of the exisiting data and information		]																																	
(1-3) Preparation of the inception report		]																																	
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(2) Study on feasibility and effects of introducing measures into pilot activities	s																																		
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(2-2) Study on feasibility and effects of introducing measures into the pilot activities				-																															
(2-3) Preparation of the study report																																			
(3) Sharing and discussions on the results among the concerned personnel of SUSFORM-NOW																																			
(3-1) Sharing and discussions on the results among stakeholders at JCC					Δ		Δ																												
(4) Incorporation of results of the study and discussions into 2012 APO																																			
(4-1) Approval of 2012 APO at JCC					Δ																														
(5) Capacity development of C/P			$\perp$									$\vdash$		+					]	[		[	[	T		[									
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(6-1) Study on monitoring method (preparation of monitoring formats)													_																						
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(6-3) Revision of monitoring method depending on the necessities													[	1		1																			
(6-4) Set ting-up of monitoring system of livelihodd development activities by making use of Government extension system																											С С			]		I	]	.t [ T	
(7) Preparation of progress report 1 and progress report 2 of the project												PR 1																			PR :	2			
(8) Implementation of study tour in Japan																																			
(8-1) Preparation for the study tour in Japan										 	l	L	_ ;																						
(8-2) Implementation of the study tour in Japan																																			
(8-3) Sharing of results of the study tour in Japan																																			
(9) Preparation of technical manual to disseminate mutually-sustainable approaches, which will balance participatory forest management and livelihood development of the local people																																			
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(9-2) Revision of manual																												L 	1	J		1 1	ı		·, ·,
(10) Recommendation on expansion of pilot sites and sustainable development of pilot activities, and supports to policy formulation and institutionalization																																			
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(11-2) Follow-up of a seminar workshop						Ţ																						<del></del>	, <del></del> 1	· · · · ·		1			
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(13) Preparation of the project completion report				$\downarrow$																															
[Works in Japan] (March 2013)	-		_									$\square$																				<u> </u>	<u> </u>		
(13-1) Submission of the project completion report																																	1		ΙA
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Appendix 2-1

## Appendix 3: Result of Study Tour in Japan

Schedule of the Study Tour
 The schedule of the Study Tour in Japan in April 2012 is as below.

Wk	Sun	Mon	Tue	Wed	Thur	Fri	Sat
5	1-Apr	2-Apr	3-Apr	4-Apr	5-Apr	6-Apr	7-Apr
4/1-4/(					Arrived in Narita, Orientation	Presentation of Inceptin report	Free
	8-Apr	9-Apr	10-Apr	11-Apr	12-Apr	13-Apr	14-Ap
4/8-4/13	Free	Overview of agriculture, rural areas, and extension acitivities in Japan, History of life improvement acitivities in Japan	Workshop: Introduction of Life Improvement Approach	Group building for "thinking" life improvement group: development of democratic leader	Half day trip to Ogawa-machi, Saitama (Town office, winery, biogas plant, tofu production and sales)	Rural development and empowerment of community organization, Rural entreprenuership for income generation:	Free
4/15-4/20	15-Ap	16-Apr	17-Apr	18-Apr	19-Apr	20-Apr	21-Ap
	Free	Forest conservation and community development, Courtesy call to JICA	Trip to Tochigi (Nishikata branchi office of Tochigi city office, nishikata town magami ward)	Trip to Tochigi (agro-processing , roadside station, life improvement group)	Trip to Tochigi (Kanuma city nakakasuo, survey mapping)	Trip to Tochigi (Kanuma city nakakasuo, vision development based on survey mapping, presentation)	Free
	22-Ap	23-Apr	24-Apr	25-Apr	26-Apr	27-Apr	
4/22-27	Free	Guidance for preparation of livelihood development and life improvement plan	Participatory analytical tool (Problem and Objective analysis), Preparation of livelihood development and life improvement plan	Preparation of livelihood development and life improvement plan, Presentation of action plan	Presentation of action plan, Training Evaluation and closing session	Departure from NRT to Hanoi	

Schedule of the study tour in Japan

(2) Participants of the Study Tour The participants of the study tour from C/P agencies are as follows.

N	<b>[0.</b>	Full name	Organization	Sex	YoB	Ethnicity
		Provincial Govt				
1	1	Mr. Ha Luong Hong	Sub-Department of Forestry, Vice-Director	М	1970	Kinh
2	2	Ms. Cao Thi Tuyet Lan	Sub-Department of Animal Health	F	1973	Kinh
		Dien Bien District				
3	1	Mr. Lo Van Cuong	Natural Resource & Environment Division, Head	М	1975	Thai
4	2	Mr. Nguyen Hong Thang	Agriculture & Rural Development Division, Vice-head	М	1973	Kinh
5	3	Mr. Nguyen Van Doa	Nua Ngam CPC, Vice-Chairman	М	1963	Kinh
		Dien Bien Dong District				
6	1	Mr. Nguyen Trong Hue	Agriculture & Rural Development Division, Staff	М	1979	Kinh
7	2	Mr. Nguyen Thanh Ha	Fishery and Agriculture Extension Station, Staff	М	1979	Kinh
8	3	Mr. Vang Quoc Minh	Keo Lom Commune, Chairman	М	1964	H'Mong
9	4	Mr. Lo Van Kho	Na Son CPC, Chairman	М	1962	Thai
		Dien Bien Phu City				
10	1	Mr. Truong Van Hung	Economic Division, staff	М	1965	Kinh
11	2	Mr. Nguyen Duy Tan	Ta Leng Commune, Chairman	М	1965	Kinh
12	3	Mr. Lo Van Sam	Forest Protect Station, Vice-Head	М	1969	Thai

List of participants in the study tour in Japan

# Appendix 4: List of Equipment and Assets provided by the LDC team

The equipment and assets were provided by the LDC team to Ms. Dang, Thi Thu Hien, the Project Director of the PMU of DARD of Dien Bien Province on 12<sup>th</sup> March, 2013.

List of Equipment

No.	Item	Purchasing date	No	Purchasing amount (VND)	Signature
1	Laptop - Toshiba Protege T230 i3-380 UM.Part PST 4 E 1	13 Oct, 2011	1	18,790,000	
2	Laptop - Sonny Vaio SVE1511 HFX 245G50WHPNK White	25 Oct, 2012	1	16,999,000	
3	Printer - Canon Pixma IX4000	18 Oct, 2011	1	4,600,000	
4	White board	24 Oct, 2011	1	2,600,000	
7	Bookshelf	07 Nov, 2011	1	2,500,000	
8	Photocopy Richoh Aficio 1600 LF	10 Nov, 2011	1	28,400,000	
9	White board VND 1901, 900	17 Nov, 2011	1	1,902,000	
10	Bookshelf	20 Feb, 2012	1	2,800,000	
11	Bookshelf	21 Feb, 2012	1	2,800,000	
12	Table	7 Nov, 2011	1	910,000	
13	Bookshelf	6 Jan, 2012	1	2,800,000	

## Appendix 5: Minutes of JCC

(1) Second JCC (22 December 2011)

#### THE SOCIALIST RIPUBLIC OF VIET NAM **Independence - Freedom - Happiness** ------ \*\*\*

#### MINUTES OF THE 2<sup>nd</sup> JCC MEETING Project for Sustainable Forest Management in the Northwest Watershed Area (SUSFORM-NOW)

#### I. Time and Agenda:

- 1. Time: 14:00 18:00 PM 22 December 2011.
- 2. Agenda: (*Attached file*)

#### II. Venue:

Meeting room No. 4B of Dien Bien Province People's Committee.

#### **III.** Participants:

- 1. Mr. Hoang Van Nhan, Vice Chairperson of Dien Bien Province People's Committee (Dien Bien PPC) - Chairperson of the JCC meeting;
- 2. Mr. Pham Duc Hien, Director of Dien Bien DARD Project Director;
- 3. Mr. EGASHIRA EIJI, Representative of JICA Vietnam Office;
- 4. Mr. Truong Tat Do, Representative of VNFOREST MARD
- 5. Mr. GOSEKI Kazuhiro, Chief Advisor of SUSFORM-NOW Project;
- 6. Mr. Nguyen Dinh Ky, Head of Dien Bien Sub-DoF and Project Manager of SUSFORM-NOW Project;

And all the members of JCC, PMU, related agencies and observers (Attached the list of *participants*)

#### IV. Contents of the 2<sup>nd</sup> JCC Meeting

1. Introduction: Mr. Nguyen Dinh Ky, Head of Dien Bien Sub-DoF and Project Manager introduced participants, agenda of JCC2 and Logo of SUSFORM-NOW Project.

#### 2. Opening Speech

Mr. Hoang Van Nhan, Vice Chairperson of Dien Bien PPC - Chairperson of JCC had an opening speech of the 2<sup>nd</sup> JCC Meeting of SUSFORM-NOW Project in Dien Bien Province: "Main purpose of this meeting is to discuss for getting agreement on Progress Report of 2011 and approval of APO2012 of SUSFORM-NOW project.

Some issues below should be considered in the meeting:

- Project activities have been implemented in 2011 following Project Design Matrix;
- Leaders of executing agencies, districts and communes should contribute their opinions on Progress Report and APO2012.

Sustainable forest management is the most important objective of Dien Bien province. Experiences and success of the project will be expanded to other areas in Dien Bien province."

3. Speech of JICA Vietnam Office. Mr. EGASHIRA Eiji, Representative of JICA Vietnam Office, Senior Project Formulation *Advisor:* 2012 is an important year for expanding pilot sites. I hope, good experiences and lesson learnt will be given from this meeting for better implementation of APO2012.

4. *Report on Progress in 2011 and APO2012 (Attached documents)* - Presented by Mr. Nguyen Dinh Ky.

#### 5. Discussion

#### \* Mr. Hoang Van Nhan, Chairperson of JCC and Vice Chairperson of Dien Bien PPC.

The presented Progress Report by Mr. Ky was good. Objective of Vietnamese Government and JICA project is sustainable forest management. I hope, sustainable forest management in Dien Bien province has been changed more effectively when the project will be completed.

I would like to request all participants to give comments on the presented Progress Report of 2011 and give good solutions for implementing APO2012 of SUSFORM-NOW Project.

In order to mobilize participation of local people in project activities more actively, representatives of districts, communes should give opinions for implementing APO2012.

#### \* Mr. Tran Van Thuong, Vice Chairperson of People's Committee of Dien Bien Dong district.

I agreed with the Progress Report of 2011 basically. In Dien Bien Dong district, villagers who are from other villages are cultivating in the areas of pilot sites. This actual situation makes some difficulties for implementing project activities. Authorities of communes and villages haven't solved this problem strongly. Staffs of communes and villages had no allowance when they participated in project activities. Meetings were organized at farming time so many villagers could not participate in the meetings.

Proposals:

- Project activities should be implemented more speedily in 2012;
- Capacity of C/P staffs and local people should be improved though trainings and study-tours;
- Livelihood development activities should be increased for sustainable forest management;
- Project should invest in infrastructures in pilot sites.

#### \* Mr. Bach, Vice Chairperson of People's Committee of Dien Bien district.

Livelihood development activities were implemented in 2011 at 2 pilot sites of Dien Bien district. But staffs of communes and villages who participated in project activities did not receive any allowances from the project.

Proposals:

- To support allowances for staffs of communes and villages who participate in project activities directly;
- To inform working schedule to district People's Committee for understanding and cooperation.
- To organize study-tours for villagers to learn experiences from successful models inside Dien Bien province.

#### \* Mr. Nguyen Duc Duyen, Vice Chairperson of People's Committee of Dien Bien Phu city.

Livelihood development activities haven't been implemented at Ta Leng site yet.

I agreed with APO2012 and willing to cooperate with project to implement APO2012. Trained staffs will be sent to participate in project activities and participation of local people will be mobilized. Other budget resources will be used for implementing rural development model. Successful models of project will be handed over to commune for management and extension to other villages of Ta Leng commune.

<u>\* Mr. Nguyen Duy Tan - Chairperson of People's Committee of Ta Leng commune, Dien Bien</u> <u>Phu city.</u>

It's right to implement SUSFORM-NOW project at Ta Leng site. This is a good chance to develop community.

Proposals:

- To have plan of afforestation on bare land areas and denuded hills of Ta Leng commune;
- To support livelihood development activities and improvement of infrastructure at Ta Leng site.

#### \* Mr. Vang Quoc Minh - Chairperson of People's Committee of Keo Lom commune, Dien Bien Dong district.

Proposals:

- To allocate forest land to each house hold (HH) to mange better;
- To give the same supports to villagers who are staying at outside of pilot site but they have forest area in the pilot sites.
- To add more livelihood development activities to pilot sites.
- \* Mr. Nguyen Van Doa, Vice Chairperson of People's Committee of Nua Ngam commune, Dien <u>Bien district.</u>

I agreed with Progress Report of 2011 and APO2012.

*Proposal:* To increase the items of livelihood development activities, such as poultry, aquaculture, and paddy rice production.

#### \* Mr. Phan Hien - Vice Director of Department of Natural Resource and Environment

I agreed with the presented Progress Report of 2011. Natural Resource and Environment Department of Dien Bien province will cooperate with Dien Bien DARD to solve some problems of forest land allocation according to Decree No. 163/NĐ-CP of Vietnamese Government. SUSFORM-NOW Project needs to have a mechanism to cooperate with any poverty reduction projects/programs in Dien Bien province. Provincial PMU has to send quarterly reports or half-year reports of progress of implementation to all members of JCC.

#### \* Mr. Nguyen Dinh Ky, Head of Dien Bien Sub-DoF - Project Manager.

- For local contribution budget: allowances of provincial and district staffs will be paid when local contribution budget is available. Roles and allowances of commune staffs weren't mentioned in the signed M/M and R/D of the Project. In order to solve this mater, allowances of commune staffs will be paid by local contribution budget when it is available. In the future, when numbers of pilot sites will be increased, local contribution budget cannot cover all.
- For communication system: Head of City/District PMU member has responsibility to report regularly implementation plans of project activities to leaders of city/districts.
- For afforestation plan in Ta Leng commune: Project has a plan to invite private company to discuss directly with Ta Leng commune for afforestation.
- \* <u>Mr. EGASHIRA Eiji, Representative of JICA Vietnam Office Senior Project Formulation</u> <u>Advisor</u>:

Thank for Mr. Ky's presentation and participants' opinions. I have three comments:

- Trainings in Japan for C/P staffs: In order to get more effectively, C/P staffs should be selected carefully to participate in training in Japan. It is recommended that the trainees and his organization agree beforehand, on the results and outputs which the trainee should bring back from the training. JICA trainings can customize the contents based on such specific needs.

- Method of propaganda: In addition to the current dissemination methods, Farmers to Farmers extension method should also be considered as a tool for getting more effective attention of the farmers.
- REDD+ Project will be started in April 2012 in Dien Bien province. This 1.5 years project is planned to be integrated into SUSFORM-NOW after its completion. I would like to request the local authorities to support the project activities of REDD+.

#### \* Mr. Truong Tat Do - Representative of VNFOREST

I have identified that SUSFORM-NOW project has been implemented following signed R/D and M/M rightly, though presented Progress Report of 2011 and APO2012.

I would like to mention 5 points below:

- To clarify problems on cooperation with executing agencies to find out better solutions.
- Not good cooperation of provincial, district and commune levels last time showed that no participations of political organization system. I hope that, after this JCC2 Meeting, all political organizations will participate in project implementation enthusiastically.
- Objective of project is to improve knowledge and living standard of local people.
- Vietnamese in project reports and documents should be simpler for villagers' understanding.
- I agreed with Progress Report of 2011 and APO2012.

#### \* Mr. Pham Duc Hien, Director of Dien Bien DARD - Project Director

- Conditions of project implementation will be more convenient in 2012 because of having two project cars and local contribution budget.
- Allowance for commune staffs wasn't mentioned in project documents. This matter will be proposed to Dien Bien PPC and JICA to solve.
- Forest land allocation has to be followed villagers' opinions. There are some successful models of forest land allocation to community in Dien Bien province such as Na Pen village, Na Nhan commune, Hua Rom and Na Sang 2 villages, Nua Ngam commune etc. So, it should be based on actual situation to allocate forest land. It isn't necessary to allocate to HH only.
- District People's Committees should be noted that SUSFORM-NOW project is a technical cooperation project. It is not an investment project. So, other budget resources should be added to pilot sites.
- Provincial PMU has to sent working plans of next week to related agencies on Friday of every week by official letter, not only by phone, to arrange staffs to cooperate and participate in project activities.

#### V. Conclusion

Mr. Hoang Van Nhan concluded the second JCC Meeting:

- The 2nd JCC Meeting was successfully.
- There were many difficulties in 2011 but PMU of SUSFORM-NOW project and executing agencies implemented APO2011 well. It was implemented following signed M/M and R/D. Many project activities and models of livelihood development have been implementing in pilot sites to support local people and manage forest sustainably.
- Project PMU has to accept all participants' opinions to finalize the reports and send them to JCC and related agencies for consideration. It should be focused on difficulties and shortcomings and given solutions for APO2012. Especially, "Farmer to Farmer" method for extension should be applied to expand successful models.
- Leaders of districts are noted that SUSFORM-NOW project is a technical cooperation project. It isn't an investment project for infrastructure improvement.
- Commune staffs are requested to pay more attention on cooperation and implementation project activities at pilot sites of the communes.

- Dien Bien DARD is assigned to assist Dien Bien PPC to manage executing agencies to improve cooperation for implementation of SUSFORM-NOW project.
- Provincial PMU is assigned to make draft of revised R/D to include ward/commune staffs and heads of villages in Vietnamese counterparts, send the draft to Dien Bien PPC, then revise the R/D after discussion with JICA Vietnam Office.

The 2<sup>nd</sup> JCC Meeting was closed at 18:00 PM 22 December 2011./.

Mr. HOANG VAN NHAN Vice Chairperson of Dien Bien Province People's Committee. Chairperson of JCC

#### THE SOCIALIST REPUBLIC OF VIET NAM Independence - Freedom - Happiness

## MINUTES OF THE 3<sup>rd</sup> JCC MEETING Project for Sustainable Forest Management in the Northwest Watershed Area

#### (SUSFORM-NOW)

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#### I. Time and Agenda:

- 1. Time: 08:30 12:00 AM January 29<sup>th</sup>, 2013.
- 2. Agenda: (Attached file)

#### II. Venue:

Meeting room, 2<sup>nd</sup> floor of Muong Thanh Hotel, Dien Bien Phu City, Dien Bien Province.

#### **III.** Participants:

#### **JCC Members**

- 1. Mr. Pham Duc Hien, Director of Dien Bien DARD & Project Director of SUSFORM-NOW, Vice Chairperson of JCC;
- 2. (full name), (position), Dien Bien DONRE;
- 3. (full name), (position), Dien Bien DPI;
- 4. (full name), (position), Dien Bien DOF;
- 5. (full name), (position), Dien Bien DST;
- 6. Mr. Nguyen Duc Duyen, Vice Chairperson, Dien Bein Phu City People's Committee;
- 7. Mr. Pham Van Bach, Vice Chairperson, Dien Bien District People's Committee;
- 8. Mr. Tran Van Thuong, Vice Chairperson, Dien Bien Dong District People's Committee;
- 9. Dr. Nguyen Phu Hung, Deputy Director of DOSTIC, VNFOREST;
- 10. Mr. GOSEKI Kazuhiro, Chief Advisor of SUSFORM-NOW;
- 11. Mr. TAKAHASHI Baku, Administrative Coordinator of SUSFORM-NOW;
- 12. Mr. MOCHIDA Tomoo, LDC Team Leader of SUSFORM-NOW;
- 13. Mr. EGASHIRA EIJI, Senior Project Formulation Advisor, JICA Vietnam Office;

#### Mid-term Review (MTR) Team Members

- 1. Mr. Lo Quan Chieu, Vice Director of Dien Bien DARD, Leader of Vietnamese MTR Team
- 2. Ms. Hoang Thi Dung, Expert of Planning Division of Dien Bien DARD
- 3. Mr. Nguyen Van Thang, Dean of Agriculture and Forestry Faculty, Dien Bien Provincial Vocational School
- 4. Mr. MIYAZONO Hiroki, Senior Advisor of Global Environment Department of JICA, Leader of Japanese MTR Team
- 5. Mr. ABE Shinji, Special Advisor of Global Environment Department of JICA
- 6. Mr. YAMAMOTO Kenichiro, Deputy Assistant Director of Global Environment Department of JICA
- 7. Mr. SHIMA Katsu, Deputy Director of International Forestry Cooperation Office of Ministry of Agriculture, Forestry and Fisheries
- 8. Mr. FUKUYAMA Makoto, Senior Consultant, A&M Consultant

#### Leaders of PMU

- 1. Mr. Nguyen Dinh Ky, Vice Director of Dien Bien DARD & Vice Director of SUSFORM-NOW.
- 2. Ms. Dang Thi Thu Hien, Vice Head of Dien Bien Sub-DoF and Project Manager of SUSFORM-NOW;
- 3. And all the other members of PMU, related agencies and observers, local mass media. (Attached the list of participants)

#### **IV.** Contents of the 3<sup>rd</sup> JCC Meeting

#### 1. Introduction:

Ms. Dang Thi Thu Hien, Vice Head of Dien Bien Sub-DoF & Project Manager, introduced participants, and agenda of JCC3.

People's Committee of Dien Bien Province has sent an official letter No.204/UBND-NN, dated 23<sup>rd</sup> January 2013 on empowerment Dien Bien DARD to organize and conduct JCC3 of SUSFORM-NOW.

#### 2. Opening Speech

Mr. Pham Duc Hien, Director of Dien Bien DARD & Project Director, made an opening speech of the 3<sup>rd</sup> JCC Meeting of SUSFORM-NOW:

Main purposes of the 3<sup>rd</sup> JCC Meeting are to evaluate implementation of project activities in 2012 and formulate APO2013. Main contents of the meeting should be focused on:

- Monitor the progress of the Project activities in 2012 according to the Plan of Operation (PO);
- Discuss on modification of the framework of SUSFORM-NOW to integrate outputs of REDD+ Pilot Project (REDD+PP) into it for implementation;
- Get comments of VNFOREST, leaders of related agencies, districts and communes on progress of the project activities in 2012 and approve an Annual Plan of Operation for 2013 (APO2013).

#### **3. Report of Progress in 2012**

Mr. Nguyen Dinh Ky, Vice Director of Dien Bien DARD & Vice Director of SUSFORM-NOW Project, presented Progress of the project activities in 2012. (*Attached files*)

#### 4. Report of Mid-term Review results of SUSFORM-NOW

Mr. Lo Quang Chieu, Vice Director of Dien Bien DARD & Head of Mid-term Review Team (Vietnamese side), presented Report of Mid-term Review Results of SUSFORM-NOW. (*Attached files*)

#### 5. Revised PDM

Mr. Hiroki Miyazono presented PDM and PO (revised) to integrate outputs of REDD+PP into SUSFORM-NOW for implementation. (*Attached files*)

#### 6. APO2013

Ms. Dang Thi Thu Hien, Vice Head of Dien Bien Sub-DoF & Project Manager, presented draft APO2013. (*Attached files*)

#### 7. Speech of VNFOREST

Dr. Nguyen Phu Hung, Deputy Director of Science, Technology and International Cooperation Department of VNFOREST evaluated highly Japanese experts' roles to support the project, especially to improve capacity of local staff. However, Project implementation is still facing many difficulties. So, Japanese side and local authorities are expected to pay more efforts to implement the project successfully. Some contents are proposed to add as following:

- Japanese side:
- + Uses more Vietnamese experts to reduce cost and improve effectiveness; Pays more attention on training of trainers (ToT) at location.
- + Assists Dien Bien Province to have projects of watershed Mekong river; Calls for Japanese investors to invest in Dien Bien Province with sectors of wood processing and export of forest products.
- Dien Bien Province:
- + Enhances local staff to participate in project activities actively.
- + Ensures to allocate enough local contribution budget for project implementation.
- + Cooperates with institutes, universities, and central agencies more closely to exchange and implement sustainable forest management better in Dien Bien Province.

#### 8. Discussion - Participants' opinions

#### 8.1 Discussion on Report of Progress in 2012 and APO2013

\* Mr. Pham Duc Hien, Director of Dien Bien DARD

- Content of the report which was presented by Mr. Ky was good. The report showed that all activities which were implemented in 2012 and some shortcomings which need to be overcome in 2013.
- Techniques should be more supported (Ex: Acacia seedlings were died by wrong plating season, bad seedlings, or insects etc.; the reasons need to be identified clearly.). It needs to be considered to change technical contents into suitable ways. Cooperation among Japanese experts, Vietnamese experts and villagers has to be well.
- Dien Bien Province has difficulties, so it is difficult to provide enough local contribution budget; it is very difficult for local staff to participate in implementation of project activities and to complete their office works at the same time.
- Suitable time should be considered carefully to develop models in APO2013.
- Formulated APO2013 is not good because budget is not mentioned. Cooperation of both sides for plan formulation was not good. Fiscal year of Japan is beginning of April. If budget comes in May, June or July, it is too late for implementing some activities in Dien Bien Province (Ex: planting seedlings).
- Budget resources need to be disclosed such as how much money was spent in 2012 for what and how much is remained. How did both sides contribute budget comparing with their commitment in the official project document (R/D). Now, when Mid-term Review is conducted, it is good time to consider budget resource carefully. It should be balance with financial resources of both sides.
- Project activities are agreed. It is considered as a draft APO2013. After Vietnamese lunar TET holidays, one meeting should be hold to formulate detailed APO2013 and identify budget resources clearly.
- \* Mr. Goseiki, Chief Advisor of SUSFORM-NOW
  - At the moment, budget resource cannot be decided yet because fiscal year of Japan starts from beginning of April 2013; Budget of 2012 was about 2.6 billion VND. If Vietnamese side provided enough local contribution budget, limited budget of Japanese side could be used effectively; Budget size for 2013 may be almost same as 2012;, now detailed plans are being formulated for each village.
  - The formulated APO2013 is not detailed one, but project activities can be implemented based on five-year plan of each Pilot Site. Pilot activity plans of Additional Pilot Sites (APS) will be formulated from April to September 2013, including detailed plans of each activities (REDD+ Action Plan). Based on that, budget resources for the next years will be prepared.
  - In 2013, if the Vietnamese local contribution budget will be short, JICA will cover a part of them to implement project activities well.

- Budget resources have to be developed to implement project activities at both Initial Pilot Sites (IPS) and APS. JICA will try to ensure budget for implementing the most necessary activities. Vietnamese side also needs to mobilize budget from different resources such as 30a Program, private investors etc.
- \* Mr, Nguyen Phu Hung, Representative of VNFOREST
  - Budget for each activity should be estimated in the formulated APO2013. Budget shall be proposed clearly in APO2013.
  - Vietnamese side: In order to get budget on time, budget plan needs to be made and proposed one year in advance, including clear and detailed explanation of necessary activities. Based on that, Ministry of Finance will allocate budget. Dien Bien DARD and PMU are proposed to select appropriate activities and put out some activities from APO2013 of which the budget cannot cover the necessary costs.
  - Outputs of REDD+PP will be integrated into SUSFORM-NOW from Sep 2013. So, project works will be increased at that time. All sides are proposed to try more to implement project well.
- \* Mr. Nguyen Dinh Ky, Vice Director of Dien Bien DARD
  - Local contribution budget of Vietnamese side was satisfied basically according to commitment in official project document (R/D).
  - Some project activities were developed not well. So, Vietnamese side was difficult to assign staff for participation.
  - Two communes will be added in project pilot sites. So, budget for detailed activities of the two communes needs to be allocated.
- \* Mr. Miyazono, Head of Mid-term Review Team of Japanese side
  - Formulated APO2013 was not detailed, but we agreed draft APO2013 basically. Financial system of Japan and Vietnam is different but it is not main issue. We can use financial resources flexibly. (For example, if there is not available money from Vietnamese side in the first 6 months, in this case, JICA budget can be used temporally).
  - JICA will ensure to provide budget according to its commitment. Vietnamese side is proposed to ensure to allocate and disburse local contribution budget. After coming back to Japan, we will immediately estimate detailed budget from Japanese side for the Project.
  - Now, we have some new pilot sites. So, Japanese side will increase budget for implementing activities in these new ones, but it cannot be increased too much. So, limited key activities should be selected at each pilot site.
- \* Mr. Tran Van Thuong, Vice Chairman of People's Committee of Dien Bien Dong District
  - Agreed with Report of Progress 2012 and discussed contents.
  - In 2015, 80% of the target shall be achieved but there was no detailed budget.
- \* Mr. Vu Van Dung, Head of Economic Division of Dien Bien Phu City
  - Dien Bien Phu City always assigns enough staff to implement project activities following project plan.
  - Detailed plan of afforestation is proposed to be developed as soon as possible for implementation. Reason of Acacia seedlings damages needs to be considered carefully and clarified.
  - Necessary livelihoods development activities, which are suitable with villagers' need and conditions of each area, need to be selected for implementation.

- \* Mr. Phan Hien, Vice Director of Environment Natural Resource Department of Dien Bien Province
  - SUSFORM-NOW is a technical cooperation project. So, it is very important. After finishing project, villagers will have good models to manage forest sustainably. It is very important to ensure livelihoods of villagers for reducing pressure on forest.
  - Revised PDM must be appropriate with results of Mid-term Review.
  - Results of Mid-term Review: sustainability is evaluated as "FAIR". Is that right or not? Results of Mid-term Review should be checked again.

#### 8.2 Discussion on revised PDM and PO

- Mr. Miyazono presented main changes of revised PDM and PO. The main change is to integrate outputs of REDD+PP into SUSFORM-NOW for implementation. So, overall goal, project purpose, inputs, outputs, activitie, indicators and assumptions will be changed as well.

All participants of the JCC3 meeting agreed with revised PDM and PO.

#### 9. Signing on Report of Mid-term Review

Mr. Lo Quang Chieu, Head of Mid-term Review Team of Vietnamese side and Mr. Hiroki Miyazono, Head of Mid-term Review Team of Japanese side signed on R eport of Mid-term Review of SUSFORM-NOW together.

The 3<sup>rd</sup> JCC Meeting was closed at 12:00 January 29<sup>th</sup>, 2013./.

Mr. PHAM DUC HIEN Director of Dien Bien DARD & Project Director

## Appendix 6: Other Results of Activities

6-1: Assignment schedule of Japanese Experts

The following figure shows an assignment schedule (plan and actuals) of Japanese experts.

	Responsibility	Name	Plan/Actual	1	2 FY 201	3	4	5	_6	7	8	9 Ia	10 panese	11 Fiscal	12 Year 20	13	14	15	16	17	18		] 
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	1	(OPMAC)	Actual			 				(0.20)				1									0.20
		Hisami	Plan		l	1	(0.33)	1	(0.04	(0.83)		1	1	1		1	1		(0.17)				1 37
2	Study Tour/ Life improvement	NAKAMURA (OPMAC)	Actual	<u> </u>	4 <u>-</u> -	I — —	26-27/1	9/3, 12-15,	22-23, 26-	30/3, 4-27/4	+ 1	<u> </u>		L 						 			
	)	M/M of the Work	in Japan (Plan)		l	•	(0.07)	1	(0.40)	(0.73)				1	(		I	)	(0.17)				1.37
	Poporto	M/M of the Work in	Japan (Actual)																				1.57
	reports	A Name of report	ig ts)	Ic/₽	1	 			1	1		 				 							i I
				10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	27.52	1.57
		Plan         27.53         1.57           Total         29.10																					
		work in Vietnan	n (Plan)		Work	ın Vı	etnam	(Actua	11)	L		Work	in Jap	an (Pl	an)		Work	in Jap	an (Ac	ctual)	Actual Total	27.53 29.	1.57 10

Appendix 6-1

No	Subject	No of days	Start Date	End Date	Venue	Target	No of trainees	Trainer
1	Study tour to Son La (on cooking stoves and biogas facilities)	1	11-Dec-11	11-Dec-11	Son La	Villagers	9	Kuwa, Izumi, Tiep, Tuan, Hue (LDC)
2	W/S on introducing improved cooking stove	1	9-Jan-12	9-Jan-12	Tia Ghenh C	Villagers	30	Kuwabara, Mochida, Aihara, Lam, Trung, Hue
3	Training on organic farming	1	11-Jan-12	11-Jan-12	Hang Tro B	Villagers	25	Aihara, Lam, Mochida, Hue
4	W/S on intalling PE-type biogas	1	12-Jan-12	12-Jan-12	Sai Luong	Villagers	15	Kuwabara, Mochida, Aihara, Lam, Trung, Hue
5	W/S on intalling PE-type biogas	1	13-Jan-12	13-Jan-12	Sai Luong	Villagers	22	Kuwabara, Mochida, Aihara, Lam, Trung, Sinh, Hue, Nonaka, Ngo Si Minh
6	W/S on introducing improved cooking stove	1	16-Jan-12	16-Jan-12	Tia Ghenh C	Villagers	12	Kuwabara, Mochida, Aihara, Trung, Lam, Hue
7	Training on organic farming	1	6-Feb-12	6-Jan-12	Na Phat A	Vilagers	13	Lam, Lan, Hue
8	Training on organic farming	1	8-Feb-12	8-Feb-12	Sai Luong	Vilagers	9	Lam, Lan, Hue
9	W/S on introducing improved cooking stove	1	7-Feb-12	7-Feb-12	Na Phat A	Vilagers	19	Trung, Lam, Lan
10	Training on organic farming	0.5	13-Feb-12	13-Feb-12	Huoi Mua A	Vilagers	14	Lam, Lan
11	Training on organic farming	0.5	13-Feb-12	13-Feb-12	Tia Ghenh C	Vilagers	11	Lam, Lan
12	W/S on introducing improved cooking stove	1	14-Feb-12	14-Feb-12	Huoi Mua A	Vilagers	18	Trung, Lam, Lan
13	Training on organic farming	1	16-Feb-12	16-Feb-12	Phieng Ban	Vilagers	24	Lam, Lan
14	W/S on introducing improved cooking stove	1	17-Feb-12	17-Feb-12	Phieng Ban	Vilagers	41	Trung, Lan
15	Training on tofu producing	1	20-Feb-12	20-Feb-12	Hang Tro B	Vilagers	24	Kudo, Lam, Hue, Tuyet (LDC)
16	On-site training for Mong Cai sow & dilivering MC sows for villagers	1	20-Feb-12	20-Feb-12	Tia Ghenh C	Vilagers	13	Sinh, Junko, Nonaka, Lan
17	Training on tofu producing	1	22-Feb-12	22-Feb-12	Tia Ghenh C	Vilagers	12	Kudo, Lam, Hue, Tuyet (LDC)
18	W/S on introducing improved cooking stove	1	23-Feb-12	23-Feb-12	Sai Luong	Vilagers	28	Trung, Lan
19	W/S on introducing improved cooking stove	1	27-Feb-12	27-Feb-12	Na Nghe	Vilagers	45	Trung, Lam
20	Training on organic farming	1	28-Feb-12	28-Feb-12	Na Nghe	Vilagers	30	Lam, Lan
21	W/S on introducing improved cooking stove	1	29-Feb-12	29-Feb-12	Hang Tro B	Vilagers	19	Trung, Lan

6-2: List of Technical Trainings provided by the Project

No	Subject	No of days	Start Date	End Date	Venue	Target	No of trainees	Trainer
22	On-site training for Mong Cai sow & dilivering MC sows for villagers	1	29-Feb-12	29-Feb-12	Sai Luong	Vilagers	20	Sinh, Nonaka, Hue
23	Training on organic farming	0.5	5-Mar-12	5-Mar-12	Phieng Bua	Villagers	14	Lam, Lan
24	Training on organic farming	0.5	5-Mar-12	5-Mar-12	Ke Nenh	Villagers	13	Lam, Lan
25	W/S on intalling PE-type biogas	1	8-Mar-12	8-Mar-12	Phieng Bua	Villagers	16	Thanh, Chiem, Trung, Mochida, Hue
26	W/S on introducing improved cooking stove	1	10-Mar-12	10-Mar-12	Phieng Bua	Villagers	18	Trung, Lan
27	W/S on fodder grass planting	0.3	19-Mar-12	19-Mar-12	Ke Nenh	Villagers	15	Aihara, Lam, Lan
28	W/S on fodder grass planting	0.3	19-Mar-12	19-Mar-12	Phieng Bua	Villagers	16	Aihara, Lam, Lan
29	Training on livestock	0.5	23-Mar-12	23-Mar-12	Sai Luong	Villagers	21	Sinh
30	Training on livestock	0.5	23-Mar-12	23-Mar-12	Phieng Ban	Villagers	20	Sinh
31	Study tour to Kon Tum (on agroforestry and livestock)	5	27-Mar-2012	31-Mar-2012	Kon Tum	PMU, district veterinarians, commune staff, villagers	19	Mochida, Izumi, Aihara, Sinh, Lam, Hue (LDC)
32	W/S on fodder grass planting	0.5	3-Apr-12	3-Apr-12	Hang Tro B	Villagers	26	Aihara & Lam, LDC
33	W/S on fodder grass planting	0.5	4-Apr-12	4-Apr-12	Huoi Mua A	Villagers	23	Aihara & Lam, LDC
34	W/S on fodder grass planting	0.5	4-Apr-12	4-Apr-12	Tia Ghenh C	Villagers	16	Aihara & Lam, LDC
35	Livelihood Development and Life Improvement in Rural Area of Japan	24	4-Apr-12	27-Apr-12	Japan	Sub-DOF, Sub-DOAN, DBD dist, DB dist, DBP city	12	Various in Japan
36	W/S on fodder grass planting	0.5	5-Apr-12	5-Apr-12	Na Phat A	Villagers	36	Aihara & Lam, LDC
37	WS for DB festival	0.5	5-Apr-12	5-Apr-12	Phieng Bua	Villagers	17	Izumi & Lam, LDC
38	WS for DB festival	0.5	6-Apr-12	6-Apr-12	Sai Luong	Villagers	43	Izumi & Lam, LDC
39	WS for DB festival	0.5	6-Apr-12	6-Apr-12	Phieng Ban	Villagers	21	Izumi & Lam, LDC
40	WS for DB festival	0.5	6-Apr-12	6-Apr-12	Ke Nenh	Villagers	4	Izumi & Lam, LDC
41	WS for DB festival	0.5	6-Apr-12	6-Apr-12	Na Nghe	Villagers	13	Izumi & Lam, LDC
42	Fish raising training	0.5	12-Apr-12	12-Apr-12	Sai Luong	Villagers	13	Izumi & Lam, LDC
43	Fish raising training	0.5	12-Apr-12	12-Apr-12	Phieng Bua	Villagers	14	Izumi & Lam, LDC
44	Afforestation technique	0.5	12-Apr-12	12-Apr-12	Phieng Ban	Villagers	35	Ms Nguyen Thi Nhai DB Dist forest
								ranger
45	Fish raising training	0.5	16-Apr-12	16-Apr-12	Hang Tro B	Villagers	10	Izumi & Lam, LDC
46	Fish raising training	0.5	17-Apr-12	17-Apr-12	Na Nghe	Villagers	10	Izumi & Lam, LDC
47	Fish raising training	0.5	18-Apr-12	18-Apr-12	Phieng Ban	Villagers	6	Izumi & Lam, LDC
48	Fish raising training	0.5	19-Apr-12	19-Apr-12	Huoi Mua A	Villagers	7	Lam & Lan, LDC

No	Subject	No of days	Start Date	End Date	Venue	Target	No of trainees	Trainer
49	Fish raising training	0.5	20-Apr-12	20-Apr-12	Na Phat A	Villagers	14	Lam & Lan, LDC
50	Forest fire prevention technique	0.5	20-Apr-12	20-Apr-12	Huoi Mua A	Villagers	33	Mr Lo Van Minh DB Dist forest
								ranger
51	Participation to DB Festival	1	21-Apr-12	21-Apr-12	DBP	Villagers	17	Hue & Lan, LDC, Goseki, Minh, Hien
52	Participation to DB Festival	1	22-Apr-12	22-Apr-12	DBP	Villagers	8	Hue & Lan, LDC
53	Participation to DB Festival	1	23-Apr-12	23-Apr-12	DBP	Villagers	9	Hue & Lan, LDC
54	Afforestation technique	0.5	23-Apr-12	23-Apr-12	Ke Nenh	Villagers	33	Mr Tran Ngoc Son
								DBP City Economic Div officer
55	Participation to DB Festival	1	24-Apr-12	24-Apr-12	DBP	Villagers	13	Hue & Lan, LDC
56	Afforestation technique	0.5	24-Apr-12	24-Apr-12	Na Nghe	Villagers	22	Mr Tran Ngoc Son
								DBP City Economic Div officer
57	Afforestation technique	0.5	24-Apr-12	24-Apr-12	Phieng Bua	Villagers	29	Mr Tran Ngoc Son
								DBP City Economic Div officer
58	Participation to DB Festival	1	25-Apr-12	25-Apr-12	DBP	Villagers	11	Hue & Lan, LDC
59	Project introduction	0.5	25-Apr-12	25-Apr-12	Lom Hom	Villagers	10	Ms Bac, Sub-DOF
60	Project introduction	0.5	25-Apr-12	25-Apr-12	Ta Leng	Villagers	25	Ms Bac, Sub-DOF
61	Participation to DB Festival	1	26-Apr-12	26-Apr-12	DBP	Villagers	9	Hue & Lan, LDC
62	Project introduction	0.5	26-Apr-12	26-Apr-12	Pom Loi	Villagers	52	Mr Son, DBP City
63	Project introduction	0.5	26-Apr-12	26-Apr-12	Hong Luu	Villagers	37	Mr Son, DBP City
64	Participation to DB Festival	1	27-Apr-12	27-Apr-12	DBP	Villagers	9	Hue & Lan, LDC
65	Project introduction	0.5	27-Apr-12	27-Apr-12	Khe Chit	Villagers	22	Mr Son, DBP City
66	Project introduction	0.5	27-Apr-12	27-Apr-12	Noong Bua	Villagers	41	Mr Son, DBP City
67	Participation to DB Festival	1	28-Apr-12	28-Apr-12	DBP	Villagers	10	Hue & Lan, LDC
68	Afforestation technique	0.5	10-May-12	10-May-12	Na Phat A	Villagers	19	Mr Lo Van Minh
								DB Dist forest ranger
69	Training on fish fingerling (study tour to Pe Luong Fishery Cooperative)	0.5	11-May-12	11-May-12	Thanh Nưa	Villagers, CPC, District	19	Mochida, Sinh, Trung, Aihara, Thuy & Hue, LDC
70	Guidance meeting on internal regulation for rotation	1	17-May-12	17-May-12	DARD	Villagers, PPMU, CPMU	40	Mochida, Aihara, Sinh, Trung, Thuy & Hue, LDC
71	Training on A-frame making and hole digging for tree planing	0.5	21-May-12	21-May-12	Huoi Mua A	Villagers	23	Aihara & thuy, LDC
72	Training on A-frame making and hole digging for tree planing	0.5	21-May-12	21-May-12	Tia Ghenh C	Villagers	31	Aihara & thuy, LDC

No	Subject	No of days	Start Date	End Date	Venue	Target	No of trainees	Trainer
73	Training on A-frame making and hole digging for tree planing	0.5	22-May-12	22-May-12	Phieng Ban	Villagers	21	Aihara & thuy, LDC
74	Training on A-frame making and hole digging for tree planing	0.5	22-May-12	22-May-12	Sai Luong	Villagers	30	Aihara & thuy, LDC
75	Training on A-frame making and hole digging for tree planing	0.5	23-May-12	23-May-12	Na Nghe	Villagers	36	Aihara & thuy, LDC
76	Training on A-frame making and hole digging for tree planing	0.5	23-May-12	23-May-12	Ke Nenh	Villagers	21	Aihara & thuy, LDC
77	Training on A-frame making and hole digging for tree planing	0.5	24-May-12	24-May-12	Hang Tro B	Villagers	21	Aihara & thuy, LDC
78	Training on A-frame making and hole digging for tree planing	0.5	25-May-12	25-May-12	Na Phat A	Villagers	36	Aihara & thuy, LDC
79	Training on A-frame making and hole digging for tree planing	0.5	26-May-12	26-May-12	Phieng Bua	Villagers	16	Aihara & thuy, LDC
80	Guidance meeting on internal regulation for cow & fish	1	26-Jun-12	26-Jun-12	Na Phat a	Villagers	20	Sinh
81	W/S on Pe Mong wine	1	27-Jun-12	27-Jun-12	Tia Ghenh C	Villagers	7	Nakamura, Trung
82	Training on biogas (study tour to visit biogas model for Tia Ghenh c villagers)	0.5	2-Jul-12	2-Jul-12	Sai Luong	Villagers	14	Trung
83	FMP & LDP formulation	1	4-Jul-12	4-Jul-12	Long Hom	Villagers	43	Nakamura, Trung, Goseki, Minh, Hien, Tuan, (Susform-now & LDC)
84	Training on biogas (study tour to visit biogas model for Ke Nenh, Phieng Ban, Hang Tro B villagers)	0.5	7-Jul-12	7-Jul-12	Sai Luong	Villagers	14	Trung
85	Training on biogas (study tour to visit biogas model for Na Phat A, Huoi Mua A villagers)	0.5	9-Jul-12	9-Jul-12	Sai Luong	Villagers	20	Trung
86	W/S on intalling PE -type biogas (involving Huoi Mua & Sai Luong villagers)	1	4-Aug-12	4-Aug-12	Na Phat A	Villagers	8	Minh, Thanh, Nam, Trung, Mochida, Thanh
87	W/S on intalling PE -type biogas (involving Huoi Mua & Sai Luong villagers)	1	5-Aug-12	5-Aug-12	Na Phat A	Villagers	8	Minh, Thanh, Nam, Trung, Mochida, Thanh

No	Subject	No of days	Start Date	End Date	Venue	Target	No of trainees	Trainer
88	W/S on intalling PE -type biogas (involving Huoi Mua & Sai Luong villagers)	1	6-Aug-12	6-Aug-12	Na Phat A	Villagers	8	Minh, Thanh, Nam, Trung, Mochida, Thanh
89	W/S on intalling PE -type biogas (involving Huoi Mua & Sai Luong villagers)	1	7-Aug-12	7-Aug-12	Na Phat A	Villagers	7	Minh, Thanh, Nam, Trung, Mochida, Thanh
90	W/S on intalling PE -type biogas (involving Huoi Mua & Sai Luong villagers)	1	8-Aug-12	8-Aug-12	Na Phat A	Villagers	4	Minh, Thanh, Nam, Trung, Mochida, Thanh
91	W/S on intalling PE -type biogas (involving Huoi Mua & Sai Luong villagers)	1	9-Aug-12	9-Aug-12	Na Phat A	Villagers	3	Minh, Thanh, Nam, Trung, Mochida, Thanh
92	On-site training on animal raising	1	13-Aug-12	13-Aug-12	Phieng Ban	Villagers	34	Loan(Department of veterinary ), Thang (Division of veterinary), Sinh
93	On-site training on animal raising	1	14-Aug-12	14-Aug-12	Sai Luong	Villagers	23	Loan(Department of veterinary ),Thien (Division of veterinary), Sinh, Hue
94	On-site training on animal raising	1	15-Aug-12	15-Aug-12	Na Nghe	Villagers	23	Loan(Department of veterinary ), Van (Division of veterinary), Sinh
95	On-site training on animal raising	1	27-Aug-12	27-Aug-12	Ke Nenh	Villagers	16	Loan(Department of veterinary ), Van (Division of veterinary), Sinh
96	On-site training on animal raising	1	28-Aug-12	28-Aug-12	Tia Ghenh C	Villagers	13	Lan(Department of veterinary , Chinh, Quy (Division of veterinary), Sinh
97	On-site training on animal raising	1	29-Aug-12	29-Aug-12	Huoi Mua A	Villagers	21	Lan(Department of veterinary, Bien, Quy (Division of veterinary), Sinh
98	On-site training on animal raising	1	5-Sep-12	5-Sep-12	Hang Tro B	Villagers	15	Lan(Department of veterinary, Bien, Xuấn (Division of veterinary), Sinh
99	Fish training course		29-Sep-12	29-Sep-12	Na Nghe	Villagers	7	Long, Trung, Thanh, LDC
100	Fish training course		29-Sep-12	29-Sep-12	Hang Tro B	Villagers	10	Long, Thanh, LDC
101	Fish training course		30-Sep-12	30-Sep-12	Huoi Mua a	Villagers	4	Long, Thanh, LDC
102	Fish training course		30-Sep-12	30-Sep-12	Phieng Ban	Villagers	5	Long, Thanh, LDC
103	Fish training course	[	30-Sep-12	30-Sep-12	Sai Luong	Villagers	11	Long, Thanh, LDC
104	Fish training course		1-Oct-12	1-Oct-12	Na Phat A	Villagers	8	Long, Thanh, LDC
105	Fish training course		1-Oct-12	1-Oct-12	Phieng Bua	Villagers	7	Long, Thanh, LDC
106	Training (Seminar)		4-Oct-02	4-Oct-02	Muong Thanh hotel	Villagers, PPMU, DPMU, CPC	53	Mochida, Izumi, Trung, Sinh, Duyen, Hue, Thanh, Aihara

No	Subject	No of days	Start Date	End Date	Venue	Target	No of trainees	Trainer
107	Training (Seminar)		5-Oct-02	5-Oct-02	Muong Thanh hotel	Villagers, PPMU, DPMU, CPC	39	Mochida, Izumi, Trung, Sinh, Duyen, Hue, Thanh, Aihara
108	Training course on pig raising	0.5	7-Oct-12	7-Oct-12	Huoi Mua A	Villagers	17	Ms Sinh, supplier, LDC
109	On site training for pruning of fruit tree; site selection for implementation of contour model	0.5	15-Oct-12	15-Oct-12	Tia Ghenh C	Villagers	7	Aihara, Duyen
110	On site training for pruning of fruit tree; site selection for implementation of contour model	0.5	15-Oct-12	15-Oct-12	Huoi Mua A	Villagers	17	Mr Aihara, Ms Duyen, LDC
111	Training course on pig raising	1	16-Oct-12	16-Oct-12	Phieng Ban	Villagers	17	Mr Sinh, LDC
112	On site training for pruning of fruit tree; site selection for implementation of contour model	1	16-Oct-12	16-Oct-12	Na Phat A	Villagers	13	Mr Aihara, Ms Duyen, LDC
113	On site training for pruning of fruit tree; site selection for implementation of contour model	0.5	17-Oct-12	17-Oct-12	Phieg Bua	Villagers	14	Mr Aihara, Ms Duyen, LDC
114	On site training for pruning of fruit tree; site selection for implementation of contour model	0.5	17-Oct-12	17-Oct-12	Hang Tro B	Villagers	16	Mr Aihara, Ms Duyen, LDC
115	Training on animal raising (study tour for Phieng Bua & Phieng Ban villagers)	0.5	17-Oct-12	17-Oct-12	Supplier farm	Villagers	5	Sinh, Hue
116	On site training for pruning of fruit tree; site selection for implementation of contour mode	0.5	19-Oct-12	19-Oct-12	Phieng Ban	Villagers	12	Mr Aihara, Ms Duyen, LDC
117	On site training for pruning of fruit tree	0.5	19-Oct-12	19-Oct-12	Na Nghe	Villagers	20	Mr Aihara, Ms Duyen, LDC
118	On site training for pruning of fruit tree; site selection for implementation of contour mode	1	20-Oct-12	20-Oct-12	Ke Nenh	Villagers	12	Mr Aihara, Ms Duyen, LDC
119	Training course on pig raising	0.5	1-Nov-12	1-Nov-12	Hang Tro B	Villagers	8	Mr Sinh, supplier, LDC
120	Training course on chiken raising	0.5	5-Nov-12	5-Nov-12	Na Phat A	Villagers	5	Mr Sinh, supplier, LDC
121	Training course on pig raising	0.5	6-Nov-12	6-Nov-12	Ke Nenh+Na Nghe	Villagers	14	Mr Sinh, supplier, LDC
122	Training course on pig raising	0.5	7-Nov-12	7-Nov-12	Huoi Mua A	Villagers	16	Mr Sinh, supplier, LDC
123	Training course on chiken raising	0.5	8-Nov-12	8-Nov-12	Tia ghenh C + Huoi Mua A	Villagers	10	Mr Sinh, supplier, LDC

No	Subject	No of days	Start Date	End Date	Venue	Target	No of trainees	Trainer
124	Study tour to Hoa Binh (on broom making)	3	9-Nov-12	11-Nov-12	Hoa Binh	Commune staff, Villagers from Sai Luong	10	Mochida, Trung, Hue (LDC)
125	Training course on chiken raising	0.5	12-Nov-12	12-Nov-12	Phieng Ban	Villagers	10	Mr Sinh, supplier, LDC
126	Training course on chiken raising	0.5	12-Nov-12	12-Nov-12	Phieng Bua	Villagers	4	Mr Sinh, supplier, LDC
127	Training course on chiken raising	0.5	16-Nov-12	16-Nov-12	Sai Luong	Villagers	18	Mr Sinh, supplier, LDC
128	Training course on chiken raising	0.5	18-Nov-12	18-Nov-12	Hang Tro B	Villagers	7	Mr Sinh, supplier, LDC
129	W/S on Pe Mong wine producing	3	18-Nov-12	20-Nov-12	Tia Ghenh C	Villagers	5	Huong, Hue, Duyen
130	Training on manual utilization	1	19-Nov-12	19-Nov-12	Ta Leng	commune staff	19	Mochida, Trung, Sinh, Duyen,Cong, Hue
131	Training on manual utilization	1	20-Nov-12	20-Nov-12	Ta Leng	commune staff	18	Mochida, Trung, Sinh, Duyen,Cong, Hue
132	Training on making brooms	5	26-Nov-12	30-Nov-12	Sai Luong	Villagers	7	Mr Trung, LDC team, 2 expert of Hoa Binh sanda company
133	Biogas training course (basic course on building, operation & maintenance of brick-type biogas facilities)	9	10-Dec-12	18-Dec-12	LDC Office & Sai Luong	Villagers	8	Kuwa, Trung, Thanh, Cong (LDC), Khang, Bay (lecturers)
134	Training course on chiken raising	0.5	24/12/2012	24/12/2012	Na Nghe, Ke Nenh	Villagers	10	Mr Sinh, supplier, LDC
135	Training course on enhancing implementation capacity (TOT for commune staff)	2	7-Jan-13	8-Jan-13	LDC Office	commune staff	15	Mochida, Trung, Sinh (LDC)
136	Training course on enhancing implementation capacity (of village heads by commune staff)	2	9-Jan-13	10-Jan-13	LDC Office	Village heads, IG heads, VMU	33	Mochida, Trung, Sinh (LDC)
137	Biogas training course (advance course on building, operation & maintenance of PE-type & brick-type biogas facilities)	2	14-Jan-13	15-Jan-13	LDC Office & Phieng Bua	Villagers	14	Kuwa, Trung, Thanh (LDC), Khang (lecturer)
138	Workshop on the Activities and Achievements of Livelihood Development Component	0.5	11-Mar-13	11-Mar-13	LDC Office	PMU (province, district, commune), villagers	31	LDC

#### 6-3: Results of Study Tours

(1) Study Tour in Son La Province (11<sup>th</sup> Dec, 2011)

#### **Participants**

#### (Son La side)

- Dr. Duc Lan Doan (Director of Centre for Research and Technology Transfer, Faculty of Agronomy and Forestry)
- Mr Thu, Head of Station for Agricultural Extension in Thuan Chau District
   *Mr.Tiep, LDC member will join from Son La city*

#### (From DB)

- Mr. Thai, PPMU (to be confirmed)
- LDC Team: Mr.Kuwabara, Tuan, Hue, Okata (4prs)
- Villagers: Those who have interests in improvement of cooking stove or installation of biogas facility.

One Villager from each 9 pilot village (maximum 9prs)

#### Schedule and the visiting sites

Time	Activity
7:00-	Leave DBP
11:00-12:00	Presentation of Biogas facility and Improved Cooking Stove by Dr.Lan, and Mr.Thu (Thuan Chau Campus, TBU)
12:00-13:00	Lunch
13:00-15:00	Visiting project site
15:00-	Leave Thuan Chau District, Son La Province
18:00-	Arrive at DBP city

#### (2) Study Tour to Kon Tum Province $(27^{th} Mar - 31^{st} Mar, 2012)$

#### **Participants**

	Position and organization	No.
1	PPMU	1
2	Dien Bien DPMU	1
3	Dien Bien Dong DPMU	1
4	Dien Bien Phu CPMU	1
5	Commune (Ta Leng/Pu Nhi communes)	2
6	Sub-Veterinary (Person in charge of district level office)	1
7	Villages	9
8	LDC Team	6
	Total	22

#### Schedule and the visiting sites

Date		Activity
27 Mar	Tue	Get together
		Travel from Dien Bien – Noi Bai airport
		Travel from Hanoi - Pleiku
		Travel from Pleiku – Kon Tum
28 Mar	Wed	8h45 – 11h00: Meeting with counterparts at the media center of Dakrowa commune
		14h15 – 16h30: Visit pig rotation model + home garden (4 HHs)
		18h30 – 19h00: Meeting to reflect activities on March 28

Date		Activity
29 Mar	Thu	8h30 – 11h00: Visit contour plantation model at Konjori village
		13h30 – 14h00: Meeting to reflect activities in the morning on March 29 14h30 – 16h30: Visit Bahnar traditional weaving workshop at Kon-ko-tu village
30 Mar	Fri	8h20 – 10h10: Feedback session including counterparts in Kon Tum
		Travel from Kon Tum to Pleiku Travel from Pleiku – Noi Bai airport
31 Mar	Sat	Travel from Noi Bai – Dien Bien

## (3) Study Tour to Hoa Binh Province $(9^{th} - 11^{th} November, 2012)$

#### **Participants**

IG Group member: all 7 members Nua Ngam commune: vice- chairman, extensionist, Person in charge of Farmers' Union (3prs)

#### Schedule and the visiting sites

Time	AM	PM
Nov 09.2012	Sai Luong: 7:30 AM Leave: Muong Thanh: 9:00PM	Arrive Hoa Binh: 5:00PM
Nov 10.2012	Study and discuss	Practicing and visiting chit panting area
Nov 11.2012	Leave Hoa Binh: 7:00 AM	Dien Bien: 15:00 PM Sai Luong: 6:00 PM

#### Schedule of follow up training

Date	Day	Program contents	Responsibilities
Nov 26	Mon	Theory and concept: - Basic technique to produce chit brooms - Practice	Instructor
Nov 27	Tue	<ul><li>Basic technique to produce chit brooms</li><li>Practice</li></ul>	
Nov 28	Wed	<ul> <li>Basic technique to produce chit brooms</li> <li>Practice</li> </ul>	
Nov 29	Thur	<ul> <li>No supports will be given to participants. They are asked to produce and also learn how to teach others.</li> <li>Iidentify key farmers to form a production process</li> </ul>	
Nov 30	Fri	<ul> <li>Theory and concept:</li> <li>Explanation of experiences on chit plantation process, maintaining and harvesting</li> <li>Marketing, purchase of raw materials</li> <li>Closing</li> </ul>	

## 6-4: Database of the Registration of Biogas Plants

List of Registered Biogas plants										Base Data							1st Stage											
				Brick		PE	type			firew	ood consu (kg/day)	mption	firewood colle	ection	expected	A	nimal (kg)	usage of		fire w	ood co	nsumption	n (kg/da	ay)	firewood	collection	expected	
Registed number	Date of Construction	Village	Full Name	type		1		Constructed by	Date of inspection	for meal	for pig feeding	Total	(times/mon	th)	labour time (day/once)			gas	for cooking		ng for pig feeding		Total	Total	(umes/month)		labour time (day)	
				Volume (m3)	L (m)	W (m)	Volume (m3)			befor	before	Before	before			pig	cow/bufalo	(hr/day)	now	decrease	now	decrease		decrease	now	decrease		
1	01/01/2012	1 Sái Lương	Quàng Văn Tuân		8	0.9	6.5	Kuwabara	2012/12/12	7.0	8	15.0	4	4	0.5	70	250	0.5	5	2.0	8	0.0	13	2.0	3	1	0.5	
2	02/01/2012	1 Sái Lương	Quàng Văn Trơ	6				Mr Quỳnh	2012/12/13	7.5	20	27.5	4	4	0.5	200	0	1	2	5.5	20	0.0	22	5.5	3	1	0.5	
5	06/01/2012	1 Sái Lương	Bạc Cẩm Hồng	9				Mr Quỳnh	2012/12/26	8.5	12	20.5	4	4	0.5	330	500	3	0	8.5	12	0.0	12	8.5	3	1	0.5	
6	06/01/2012	1 Sái Lương	Lò Văn Hoán	9				Mr Quỳnh	2012/12/15	10.0	10	20.0	4	4	0.5	150	0	2	0	10.0	10	0.0	10	10.0	2	2	1	
7	07/01/2012	1 Sái Lương	Lường Văn Tiện	9				Mr Quỳnh	2013/1/12	15.0	10	25.0	5	5	0.5	200	0	2	0	15.0	10	0.0	10	15.0	2	3	1.5	
8	07/01/2012	1 Sái Lương	Lò Văn Dinh	9				Mr Quỳnh	2012/12/15	12.5	7.5	20.0	2	2	0.5			3	0	12.5	7.5	0.0	7.5	12.5	1.5	0.5	0.25	
9	07/01/2012	1 Sái Lương	Lường Văn Đoan	9				Mr Quỳnh	2012/12/12	12.5	5	17.5	6	6	0.5			2	0	12.5	5	0.0	5	12.5	2	4	2	
10	07/01/2012	1 Sái Lương	Quàng Văn Dung	9				Mr Quỳnh	2012/12/26	10.0	10	20.0	4	4	0.5	200	200	3.5	0	10.0	10	0.0	10	10.0	2.5	1.5	0.75	
48	11/22/2012	1 Sái Lương	Lò văn Lưu	9				Mr Tuân	2012/12/12	5.0	4	9.0	4	4	0.5			1	0	5.0	4	0.0	4	5.0	3	1	0.5	
49	11/24/2012	1 Sái Lương	Lường văn Liên	9				Mr Tuân	2012/12/26	12.0	8	20.0	4	4	0.5	140	350	3	0	12.0	8	0.0	8	12.0	2	2	1	
51	12/02/2012	1 Sái Lương	Quàng Văn Biên	9				Mr Tuân	2012/12/13	2.5	3.5	6.0	4	4	0.5				0	2.5	3.5	0.0	3.5	2.5	3	1	0.5	
52	12/15/2012	1 Sái Lương	Lường Văn Yên	14.7				Brick biogas workshop (Bay)	2013/1/12	10.0	10	20.0	4	4	0.5	230	750	0	10	0.0	10	0.0	20	0.0	2	2	1	
53	12/15/2012	1 Sái Lương	Lò Văn Chốm	11				Brick biogas workshop (Khang)	2013/1/12	30.0		30.0	5	5	0.5	210	850	0.5	30	0.0		0.0	30	0.0	5	0	0	
54	12/15/2012	1 Sái Lương	Lò Văn Dương B	11				Brick biogas workshop (Tuân, Long)	2013/1/12	10.0	0	10.0	5.5	5.5	0.5	150	0	1	4	6.0	0	0.0	4	6.0	3.5	2	1	
64	01/25/2013	1 Sái Lương	Lường Văn Tiên	9				Tuan, Long	2013/3/4	15.0	15	30.0	4	4	0.5	120	0	2	0	15.0	15	0.0	15	15.0	2	2	1	
68	01/28/2013	1 Sái Lương	Lò Văn Nhân	9				Tuan, Long	2013/3/4	20.0	10	30.0	5	5	0.5	90	700	2	0	20.0	10	0.0	10	20.0	3	2	1	
70	02/08/2013	1 Sái Lương	Bạc Cầm Trọng	14.7				Tuan, Long	2013/3/4	15.0	15	30.0	4	4	0.5	200	0	3	0	15.0	15	0.0	15	15.0	2	2	1	
22	08/14/2012	2 Phiêng Ban	Tòng Văn Doan		7.5	0.8	4.8	Mr Chính, Thương	2012/12/17	3.5	0	3.5	5.5	5.5	0.5	200	0	1	1.5	2.0	0	0.0	1.5	2.0	1.5	4	2	
23	08/14/2012	2 Phiêng Ban	Tòng Văn Chính		8	0.8	5.1	Mr Chính, Thương	2012/12/17	15.5	0	15.5	7.5	7.5	0.5	120	270	1.5	10.5	5.0	0	0.0	10.5	5.0	4.5	3	1.5	
24	08/20/2012	2 Phiêng Ban	Tòng Văn Thiêm	9				Mr Quỳnh	2012/12/17	15.0	15	30.0	3.5	3.5	0.5	230	450	2.5	0	15.0	15	0.0	15	15.0	2.5	1	0.5	
27	08/29/2012	2 Phiêng Ban	Lò Văn Xuân	9				Mr Quỳnh	2012/12/17	4.5	4.5	9.0	4	10	0.5	200	0	1.5	0	4.5	4.5	0.0	4.5	4.5	2	2	1	
28	08/29/2012	2 Phiêng Ban	Lường Văn Pẩu	9				Mr Quỳnh	2012/12/17	5.0	10	15.0	6	6	0.5	60	400	2.5	0	5.0	10	0.0	10	5.0	4	2	1	
55	12/21/2012	2 Phiêng Ban	Lò Văn Cu	11				Phong, Sang, Chu (Khang)	2013/1/13	5.0	12	17.0	5.5	5.5	0.5	300	0	2.5	0	5.0	12	0.0	12	5.0	4	1.5	0.75	
56	12/21/2012	2 Phiêng Ban	Quàng Thị Hơi	11		1		Thuong, Nenh, Cho (Bay)	2013/3/4	7.0	10	17.0	20	20	0.5	50	0	2	3	4.0	0	10.0	3	14.0	8	12	6	
63	01/23/2013	2 Phiêng Ban	Tòng Thị Thu	11				Thuong, Phong	2013/3/4	5.0	0	5.0	3	3	0.5	160	0	1.5	2	3.0	0	0.0	2	3.0	1	2	1	
65	01/26/2013	2 Phiêng Ban	Lường Thị Khó	11				Thuong, Phong	2013/1/25	15.0	5	20.0	9	9	0.5	45	250	2	2	13.0	5	0.0	7	13.0	5	4	2	

	List of Registered Biogas plants										Base Data							1st Stage											
Destabl	Dia			Brick		PE	type		Data	firew	/ood const (kg/day)	imption )	firewood colle	ction	expected	A	nimal (kg)	usage of		fire we	ood co	nsumption	n (kg/da	ay)	firewood	collection	expected		
number	Construction	Village	Name	type	_			Constructed by	inspection	meal	for pig feeding	Total			labour time (day/once)			gas	for	for cooking		eding	Total	Total	(tantes, month)		labour time (day)		
				Volume (m3)	L (m)	W (m)	Volume (m3)			befor	before	Before	before			pig	cow/bufalo	(hr/day)	now	decrease	now	decrease		decrease	now	decrease			
3	02/01/2012	3 Tìa Ghếnh C	Nguyễn Thúy Vân	9				Mr Quỳnh	2012/12/28	15.0	30	45.0	Buy firewood		0.5	980	0	4.5	0	15.0	30	0.0	30	15.0	Buy firewood	0	0		
29	09/03/2012	3 Tìa Ghếnh C	Vừ Chờ Chu	9				Mr Quỳnh	2012/12/28	15.0	6	21.0	4	4	0.5	100	1200	2	0	15.0	6	0.0	6	15.0	3	1	0.5		
30	09/04/2012	3 Tìa Ghếnh C	Vừ A Sềnh	9				Mr Quỳnh	2012/12/28	2.0	0	2.0	2	2	0.5		1300	1	0	2.0	0	0.0	0	2.0	0	2	1		
31	09/06/2012	3 Tìa Ghếnh C	Vừ Nọ Pó	9				Mr Quỳnh	2012/12/28	9.0	6	15.0	4	4	0.5	160	500	1.5	0	9.0	6	0.0	6	9.0	3	1	0.5		
32	09/06/2012	3 Tìa Ghếnh C	Vừa Xúa Tùng	9				Mr Quỳnh	2012/12/28	8.0	6	14.0	4.5	4.5	0.5	120	900	2	0	8.0	6	0.0	6	8.0	3	1.5	0.75		
33	09/07/2012	3 Tìa Ghếnh C	Sùng Vả Nhìa	9				Mr Quỳnh	2013/1/11	15.0	15	30.0	8	8	0.5				30	-15.0	0	15.0	30	0.0	8	0	0		
34	09/09/2012	3 Tìa Ghếnh C	Ly A Hờ	9				Mr Quỳnh	2012/12/28	3.0	7	10.0	5	5	0.5	60	1000	2	0	3.0	5	2.0	5	5.0	3	2	1		
35	09/10/2012	3 Tìa Ghếnh C	Ly Giống Nhìa	9				Mr Quỳnh	2012/12/28	10.0	0	10.0	Buy firewood		0.5	80		1.5	0	10.0	0	0.0	0	10.0			0		
36	09/13/2012	3 Tìa Ghếnh C	Vừ Vả Di	9				Mr Quỳnh				0.0			0.5					0.0		0.0	0	0.0		0	0		
37	09/13/2012	3 Tìa Ghếnh C	Vừ Chồng Chá	9				Mr Quỳnh	2012/12/28	15.0	10	25.0	4	4	0.5	200		2	0	15.0	10	0.0	10	15.0	3	1	0.5		
46	10/12/2012	3 Tìa Ghếnh C	Ly Xông Chìa		9	0.9	5.7	Mr Quỳnh	2012/12/28			0.0			0.5	150		1		0.0		0.0	0	0.0		0	0		
59	12/29/2012	3 Tìa Ghếnh C	Vừ A Nhìa A	11				Phong, Sang, Chu (Khang)	2012/12/29	8.0	10	18.0	5	5	0.5	250		2.5	0	8.0	10	0.0	10	8.0	3	2	1		
61	12/30/2012	3 Tìa Ghếnh C	Lê Văn Hưng	14.7				Phong, Sang, Chu (Khang)	2012/12/29	0.0	0.0	0.0	0	0	0.5	700	0	3	0	0.0	0	0.0	0	0.0	0	0	0		
66	01/27/2013	4 Huổi Múa A	Lò Văn Hoạn	11				Nenh, Chu	2013/1/27	15.0	15	30.0			0.5	135	650	0	15	0.0	15	0.0	30	0.0		0	0		
69	02/01/2013	4 Huổi Múa A	Lò Văn Xuân B	11				Nenh, Chu	2013/3/3	17.0	15	32.0	10	10	0.5	100	1200		17	0.0	15	0.0	32	0.0	10	0	0		
11	08/06/2012	5 Na Phát A	Lò Văn Trường		8	0.8	5.1	PE biogas workshop	2012/12/16	5.0	9.5	14.5	3.5	3.5	0.5			3	0	5.0	9.5	0.0	9.5	5.0	2.5	1	0.5		
12	08/07/2012	5 Na Phát A	Quàng Văn Pâng		10	0.8	6.4	PE biogas workshop	2012/12/16	15.0	0	15.0	5.5	5.5	0.5			2.5	4.5	10.5	0	0.0	4.5	10.5	3	2.5	1.25		
13	08/08/2012	5 Na Phát A	Quàng Văn Cắm		9	0.8	5.8	Quân, Cường, Chấn	2012/12/16	9.0	6	15.0	4.5	4.5	0.5	80	1600	2.5	0	9.0	6	0.0	6	9.0	2.5	2	1		
14	08/08/2012	5 Na Phát A	Lò Văn Tướng		8	0.8	5.1	Mr Tướng, Tuân	2012/12/16	2.5	8	10.5	2.5	2.5	0.5			2	0	2.5	8	0.0	8	2.5	1.5	1	0.5		
15	08/09/2012	5 Na Phát A	Quàng Văn Phin		9	0.8	5.8	Mr Quân, Chấn, Cường	2012/12/26	7.0	9	16.0	3.5	3.5	0.5	330		2	0	7.0	9	0.0	9	7.0	2	1.5	0.75		
16	08/09/2012	5 Na Phát A	Lò Văn Toån		8	0.8	5.1	Mr Quân, Chấn, Cường	2012/12/26	4.0	6	10.0	6	6	0.5	400		2	0	4.0	6	0.0	6	4.0	4	2	1		
17	08/10/2012	5 Na Phát A	Quàng Văn Tâm		8	0.8	5.1	Mr Tướng	2012/12/26	6.0	6	12.0	6	6	0.5	160		4	0	6.0	6	0.0	6	6.0	4	2	1		
19	08/11/2012	5 Na Phát A	Lò Văn Tin		8	0.8	5.1	Mr Tướng	2012/12/16	5.0	5.5	10.5	4.5	4.5	0.5			2	0	5.0	6	0.0	5.5	5.0	2.5	2	1		
21	08/12/2012	5 Na Phát A	Lò Văn Binh		8	0.8	5.1	Mr Tướng	2012/12/16	2.5	4.5	7.0	2.5	2.5	0.5			2	0	2.5	4.5	0.0	4.5	2.5	1.5	1	0.5		
39	09/22/2012	5 Na Phát A	Quàng Văn Xích		8	0.9	5.0	Mr Tướng	2012/12/26	7.0	8	15.0	4	4	0.5	180		2	0	7.0	8	0.0	8	7.0	3	1	0.5		
41	09/24/2012	5 Na Phát A	Lò Văn Xôm		8	0.9	5.0	Mr Tướng	2012/12/16	7.5	0	7.5	7	7	0.5			1	2	5.5	0	0.0	2	5.5	2	5	2.5		
42	09/25/2012	5 Na Phát A	Quàng Văn Đậu		8	0.9	5.0	Mr Tướng	2012/12/16	1.5	1.5	3.0	Buy firewood		0.5			2	0	1.5	1.5	0.0	1.5	1.5		0	0		

	List of Registered Biogas plants											Base Data							1st Stage											
Registed	Date of	¥/:0	Full	Brick type		PE type		Constructed by	Date of	firew for	ood consu (kg/day) for pig	mption	firewood colle (times/mon	firewood collection (times/month)		A	nimal (kg)	usage of gas	£	fire w	ood consumption for pig		n (kg/da	y)	firewood (times	collection month)	expected			
number	Construction	village	Name					Constructed by	inspection	meal	feeding	Total			(day/once)				IO	cooking	g feeding		Total	Total		-	(day)			
				(m3)	L (m)	W (m)	(m3)			befor	before	Before	before			pig	cow/bufalo	(hr/day)	now	decrease	now decreas			uecrease	now	decrease				
50	11/30/2012	5 Na Phát A	Lò văn Håi		8	0.9	5.0	Mr Tướng	2012/12/16	5.5	9.5	15.0	2	2	0.5	195		0	5.5	0.0	9.5	0.0	15	0.0	2	0	0			
43	09/27/2012	6 Háng Trợ B	Hạng Phá Sềnh	9				Mr Tuân	2012/12/21	20.0	0	20.0	2 times/year	0.17	0.5	160	350	3	10	10.0	0	0.0	10	10.0			0			
44	09/30/2012	6 Háng Trợ B	Hạng Nghìa Giống	9				Mr Tuân	2012/12/21	6.0	0	6.0	4	4	0.5	600		2	0	6.0	0	0.0	0	6.0	2	2	1			
45	10/05/2012	6 Háng Trợ B	Hạng Bua Ná	9				Mr Tuân	2012/12/21	6.0	2	8.0	4	4	0.5	30	1500	2	0	6.0	2	0.0	2	6.0	3	1	0.5			
58	12/29/2012	6 Háng Trợ B	Vàng A Lử	11				Sang, Cho (Bay)	2013/1/12	15.0	0	15.0	1 tímes/year (4m <sup>3</sup> )	0.08	0.5		950	2	2	13.0	0	0.0	2	13.0		0	0			
60	12/30/2012	6 Háng Trợ B	Vàng Giống Tủa	11				Sang, Cho (Bay)	2013/1/12	10.0	5	15.0	6	6	0.5	100	600	2.5	0	10.0	5	0.0	5	10.0	2	4	2			
67	01/27/2013	6 Háng Trợ B	Giàng A Sang		8	0.8	5.1	Sang, Thanh	2013/3/3	10.0	0	10.0	4times/year (1m <sup>3</sup> /times)	0.3	0.5	0	600	1.5	0	10.0	0	0.0	0	10.0	0	4	2			
4	03/01/2012	7 Phiêng Bua	Lò Thị Xuyến		8	0.7	3.9	Mr Thanh (Can Tho)	2012/12/25	8.0	6	14.0	4.5	4.5	0.5	120	500	2.5	4	4.0	6	0.0	10	4.0	3.5	1	0.5			
18	08/10/2012	7 Phiêng Bua	Lò Văn Xương		8	0.8	5.1	Mr Xương, Tuân, Tuyến, Chính, Thương	2012/12/25	10.0	6	16.0	4	4	0.5	115		3	2	8.0	6	0.0	8	8.0	3	1	0.5			
20	08/11/2012	7 Phiêng Bua	Lò Văn Đôi		8	0.8	5.1	Mr Xương, Tuân, Tuyến, Chính, Thương	2012/12/26	10.0	7	17.0	3	3	0.5	50	500	3	6	4.0	7	0.0	13	4.0	2	1	0.5			
25	08/24/2012	7 Phiêng Bua	Lò Văn Lå		8	0.8	5.1	Mr Chính, Thương, Xương, Tuyến	2012/12/27	8.0	5	13.0	4.5	4.5	0.5	250		2	0	8.0	5	0.0	5	8.0	2.5	2	1			
26	08/25/2012	7 Phiêng Bua	Lò Văn Chung		8	0.8	5.1	Mr Chính, Thương, Xương, Tuyến	2012/12/28	9.0	6	15.0	3	3	0.5		450	2.5	4.5	4.5	6	0.0	10.5	4.5	2	1	0.5			
40	09/22/2012	7 Phiêng Bua	Cà Văn Chiến	9				Mr Tuân	2012/12/29	8.0	7	15.0	3.5	3.5	0.5		500	3.5	0	8.0	0	7.0	0	15.0	2	1.5	0.75			
62	01/15/2013	7 Phiêng Bua	Cà Văn Nghiên		8	0.8	5.1	Brick biogas workshop	2013/3/3	12.0	8	20.0	3	3	0.5	300	0	2	0	12.0	8	0.0	8	12.0	1	2	1			
38	09/19/2012	8 Kê Nênh	Lò Văn Hương		7.5	0.9	4.7	Mr Tuân & Mr Xương	2013/1/13	5.0	15	20.0	4.5	4.5	0.5	280	0	2	0	5.0	15	0.0	15	5.0	3.5	1	0.5			
47	10/28/2012	9 Nà Nghè	Cà Văn Thiên		9	0.9	5.7	Mr Tuân & Mr Xương	2012/12/21	7.0	0	7.0	2	2	0.5		1600		7	0.0	0	0.0	7	0.0	2	0	0			

#### 6-5: List of Biogas Village Masons

#### (1) Brick type plant masons



#### (2) PE type plant masons



Name: Hoàng Đình Tuyến Telephone No: Village: Phiêng Bua



Name: Luờng Văn Long Telephone No: 01687-649-894 Village: Phiêng Bua



Name: Lò Văn Chấn Telephone No: 01673-254-579 Village: Huổi Múa A



Name: Lò Văn Quân Telephone No: 01685-195-270 Village: Huổi Múa A



Name: Tòng Văn Chính Telephone No: 01666-071-132 Village: Phiêng Ban



Name: Lường Văn Thương Telephone No: 01673–032-267 Village: Phiêng Ban



Name: Quàng Văn Tuân Telephone No: 01692-088-008 Village: Sái Lương

Name: Lò Văn Tướng Telephone No: 01676-886-807 Village: Nà Phát A Name: Lò Văn Cường Telephone No: 01636-435-301 Village: Huổi Múa A

- 6-6: Feedbacks to the manual from the workshop on forest management and livelihood development
- (1) Outline of the Seminar

The following comments have been discussed and will be incorporated in the manual:

- 1. Structure of planning and implementation manual
  - Volume 1: Implementation process manual (planning and facilitation), planning manual (planning concept and facilitation skills), planning manual (plan formulation)
  - Volume 2: Implementation process manual (implementation process of selected pilot activities)
- 2. Village-wide forest management and livelihoods development group
- 1) Establishment of a village-wide forest management and livelihoods development group at the beginning stage of the project intervention
- 2) Establishment of village management board that will coordinate all the activities with/without formation of IGs (activities without IGs are forest plantation, vegetable, biogas plants and so on), monitor activities being carried out without forming IGs, manage a village fund and coordinate relations with organizations outside the village
- 3) A village head can be a head of a village management board
- 4) A village group will operate under a village regulation

Village regulation should describe villagers' obligations to participate in the forest-related activities if they wish to join livelihoods development activities.

- 5) The initial supports from the project will be repaid to the village management fund
- 6) Management fees will be collected from villagers
- 7) In Step 2: Identifying the members of IG and its responsibilities of Sub-section 2.2: Preparation of an annual IP of the implementation process manual, the following sentences will be incorporated:

"An IG is a group formed by villagers who are interested in carrying out common activities in a group. From a management viewpoint, it is ideal to form only one group in a village which covers all the participatory forest management and livelihood development activities within the village and to its roles and responsibilities by assigning specific tasks to the members. Such the single group also can become a forest owner when the forest in the village is reallocated to the village community, and a recipient of new financial policy such as PFES and REDD+."

Part 1: Planning, facilitation and M&E

- 1. Table formats of (3) IG management under Section 3 of the implementation process manual require adjustments.
- 2. With regard to the training programs, it is good to describe use of simple instructions in order to translate into local languages easily.
- Periodical monitoring and evaluation of pilot activities (Section 4 of the implementation process manual) Necessary adjustments will be made to reflect recent changes such as TORs to extensionists.

#### Part 2: Implementation process of selected Pilot Activities

(5 steps)

- 1. Step 3 of Implementation process of selected pilot activities Delivery of supports will be made after an internal regulation is agreed by all the IG members. Village regulation will be also concluded prior to delivery of supports.
- 2. Need to include seminars and workshops in order to share the result of activities in Step 5. It is also important to analyze the results of activities. Therefore, it is good to put "monitoring and analysis of results, and expand application of results".

(Description of Sections)

- 3. Implementation process manual needs to focus on implementation processes. Explanation of technical aspects should be deleted from the implementation process manual because these points have been elaborated in the existing technical manuals. Accordingly, descriptions about types of fish, fish diseases, explanation of fruit tree species and vegetables will be deleted.
- Section 8: Agro-forestry
   It is necessary to follow 5 steps like other sections.
   Some theoretical explanation will be moved to the appendix Each village should have one contour line plantation model.
- 5. Section 10: Biogas for alternative of fire-wood Explanations will be added on operation and maintenance, safety issues.

Although it is appropriate to maintain the existing level of supports (currently up to 4 million VND/HH), it will be gradually reduced to the same level as that of the national biogas project over the cooperation period of SUSFORM-NOW. It should be discussed in mid-term review of the project scheduled in January 2013.

Villagers who are sent to training courses should complete training courses. Otherwise, they are not allowed to participate in the livelihood development activities.

Specific points to be revised have been sent to LDC, for example, it should be clearly mentioned what the commune-level facilitator shall do to facilitate biogas activities (by Mr.Goseki).

- 6. Structure of agroforestry and organic farming will be rearranged as follows: Section 7: Agroforestry – contour plowing Section 8: Agroforestry – home garden 8.1 Fruit tree 8.2 Vegetable
- 7. Afforestation

Villagers need to follow technical guidelines and plant seedling in suitable time Government subsidies scheme need to be incorporated in the manual Specific points to be revised will be sent later.

Regarding afforestation contracts, even though HHs do not have land use certificate yet, they will be supported if it is confirmed by the commune authority that there are no disputes over the lands. A village head can sign contracts with investors for areas over which HHs have land use certificate in case that the village head is authorized by the HHs with confirmation of the commune authority.

#### 8. Others

There are other points that need to be elaborated. These points include budgeting, funding and procurement, and revolving system.

(2) Institutional & Political Recommendations for Establishing Workable Approaches on Landscape Plans and Land-based Livelihood Development Plans (*Draft*) and the Discussion Results

#### **1** Institutional Recommendations

- 1.1 Assign a commune level Participatory Forest Management and Livelihoods Development facilitator (PFMLD Facilitator), who is in charge of facilitation and monitoring of activities of each village level single Participatory Forest Management and Livelihoods Development group (PFMLDG).
- 1.2 Establish a PFMLDG at each village or each group of villages of all the Pilot Sites of SUSFORM-NOW and the sites with similar conditions to them, to formulate participatory forest management and livelihoods development plans of the each village or the group of villages, and coordinate implementation of them by individual members and/or sub-groups, such as interest groups, of it and/or PFMLDG itself.
- 1.3 Facilitate to reallocate all the forests in the village or the group of villages to the established PFMLDG.
- 1.4 Utilize Commune level Agriculture Development Committees (ADC) to coordinate PFMLDGs to implement the commune level Forest Protection and Development Plan, including REDD+ Action Plan.
- 1.5 Assign necessary district and/or commune level agriculture extensionists, veterinarians, and forest rangers (D/C Extensionists), who are in charge of providing extension services to implement each participatory forest management and/or livelihoods development activity of the PFMLDG, cooperating with PFMLD Facilitators.
- 1.6 Reorganize C/DPMUs of SUSFORM-NOW, such as replacing members of the Division of Natural Resources and Environment by ones of Agriculture Extension Station, to more effectively guide and monitor ADCs, and PFMLD Facilitators and D/C Extentionist.
- 1.7 Strengthen relations between PPMU of SUSFORM-NOW and the other related organizations of DARD, such as Agriculture Extension Center, Veterinarian Center, Sub-Department of Forest Protection, and National Biogas Office, to more effectively guide and monitor C/DPMUs.

#### 2 Political Recommendations

- 2.1 Provide appropriate allowances to the PFMLD Facilitators and the D/C Extensionists based on their actual performances and according to the regulation of the Province.
- 2.2 Utilize all the available government funds, such as Forest Protection and Management Program, 167 Program, 30A Program, 134 Program, and National Biogas Program, to provide minimum and initial financial supports for launching participatory forest management and livelihoods development activities of the PFMLDGs, including construction of Polyethylene-type biogas plants.
- 2.3 Regularly hold meetings inviting investors to identify necessary policies of the provincial, and district and commune level governments for realizing preferable
conditions for the investors to accelerate investments for participatory forest management and livelihood development activities of the PFMLDGs.

- 2.4 Utilize ADCs and PFMLDGs as benefit distribution system of new financial policies such as PFES and REDD+.
- 2.5 Establish a training system for local people to operate and maintain biogas plants.

#### Discussion on the above Recommendations raised

Discussions on Institutional and political recommendations (PM Oct 05, 2012)

## Mr. Ky (PPMU)

- For PPMU: It needs to assign a new member from Sub-DAH (Sub-Department of Animal Health) and a new member from Agriculture Extension Center.
- Reorganize C/DPMUs: Based on existing number of C/DPMUs members, it needs to replace members working for the Division of Natural Resources and Environment by those working for Agriculture Extension Station

## Ms. Hien (PPMU)

- Regarding recommendation 1.3: It should not allocate the forest to livelihood development group, but should allocate to community based on the actual situation of each village. For example, it cannot find out the forest land of each among 3 villages (Hang Tro A, B and C) of Pu Nhi commune; while only Hang Tro B village has its Forest Management & Livelihood Development Group.
- For villages where the forest land allocated to HH and well managed, it cannot take over the forest certificates and then reallocate the forest to a certain groups of villagers, but should let it as it is.

## Mr. Goseki

- The diagram means that the forest should be reallocated to a village as a whole, and the forest will become village forest and villagers will be regarded collectively as a forest owner.

## Mr. Ky (PPMU)

- Many HH have obtained forest land use certificates. Locations and areas of forest in their certificate are not the same as their actual locations and areas. Many of them do not know the border of their forest. Thus forest certificates should be reclaimed and reallocated to the community.
- If HH know the border of their forest and manage it well, no need to do as the recommendation.

#### Mr. Goseki

- To get money from PFES and REDD+, the border of forest should be made clear by the certificate, thus, if not, it is necessary to reclaim forest use certificate and reallocate the forest to community.

## Mr. Yen - Sai Luong

- There have 6 HHs in the village obtained forest certificates with the area of 20ha at Phu Trong Ly hill. They do not know the border of their forest. This forest should be reallocated to the community for protection.

# Mr. Xuan - Phieng Ban

- It cannot take over forest land (Production and Protection Forests, but actually used for agricultural production; more than 61ha of villagers in Phieng Ban) because the HHs know clearly the border of their forest land, they have obtained forest land certificate and they are using as forest plantations.

Mr. Giang – Hang Tro B

- Total area of forest around Hang Tro B village is 292.2 ha belonging to three villages (Hang Tro A, Hang Tro B and Hang Tro C). This area of forest could not be divided. And, it is necessary to form one united management unit.

Mr. Hien (DARD, Director)

- To manage Northwest forest, village regulation (with specific items) should be set up. Poor districts under 30A program have been given budget to formulate village regulation.
- According to the intension of DARD, only allocate "forest" not "non-forest land" (do not follow the process of Natural Resources and Environmental sector).
- It needs to assign some officers of relevant organizations as new members of PPMU. Meanwhile, Mr. Hien as director of the project can mobilize officers of the relevant organizations according to requirements of the project. Because the total local contribution budget is fixed, additional monthly allowance of each C/P will be reduced when the number of members is increased. However, it is not a mater, because officers have their salary paid by the government for doing their duties.
- There is no need to reorganize C/DPMUs, because vice chairman of C/DPC should play as a leader of C/DPMU and the vice chairman has rights, according to the laws, to mobilize officers of relevant organizations at the district level, such as extension station, forest protection station.

Mr. Thuong – Dien Bien Dong district (vice-chairman)

- The connection between DPMU's members and DPC is not well organized. They mainly report to DARD or PPMU.
- The district cannot carry out activities on measuring and drawing detail map for allocation of forest, because of some unrealistic regulations in the cost norm of the government's Circular number 07.

# Mr. Ky

- Villagers managing large Protection Forest areas need to register with District protection forest management board in order to submit to provincial level for being put in the 2013 afforestation plan to get subsidy of the government.

# 6-7: Impact Study and the Questionnaire

- (1) Study Outline
- 1) Objective

The study aims to evaluate the results of the major pilot activities supported under JPT-LDC

- 2) Main use of the results
  - Project completion report to be prepared by JPT-LDC in March 2013
  - Possible inputs for LDC related-activities at 6 villages in Ta Leng site where forest management and livelihood development plans were prepared in 2012 and other villages that will be supported during Phase 2

3) Selection of interviewees

<u>C/P at city/district and commune levels and village heads</u>: The selection of interviewees was made by JPT-LDC in advance.

<u>Households in villages</u>: It was planned to conduct the survey at all the nine villages where LDC activities had been carried out. Households were classified into two groups: those who had been engaged in that particular pilot activity (referred to as "beneficiary households", which are, for example, members of IG) and those which had not been engaged in that pilot activity (referred to as "non-beneficiary households"). Non-beneficiary households include those that have not participated in the project, IG members who plan to receive supports from the Project, but have yet to receive them as of January 2013, or those who have participated in the Project at a least extent. Then selection of households was made in consultation with village heads and others.

## 4) Survey Method

The survey method is a questionnaire-based interview survey to the C/P, village heads and households in villages, which has been supplemented with other relevant studies.

	C/P and village leaders	Village household
Number of samples	22 persons (1 Province, 3 city/district, 8 commune/ward, 10 village heads).	48 households in 9 villages (36 benefisheries, 12 non-beneficiaries)
Theme of the questions	Capacity development through assistance to implement pilot activities	<ul><li>(i) household cash income (or household cash receipts) and expenditures and</li><li>(ii) life improvement</li></ul>
Note	<ul> <li>The questionnaire has been prepared separately for: (i) C/P at provincial and city/district levels and (ii) C/P at ward/commune people's committees and village heads).</li> <li>Among the C/P (4 persons) at provincial and city/district levels, questions were raised to receive responses from a viewpoint of the PMUs while the C/P at ward/commune levels and village heads (a total of 18 persons) were requested to respond to the questions in their individual capacities.</li> </ul>	<ul> <li>It was planned to interview to 50 households, however, 48 households were interviewed as a result.</li> <li>For the selection of non-beneficiary households, efforts were made to choose, to the extent possible, households that have not received supports from the Project. However, at some of the villages, all the households had received supports from the Project. In this case, non-beneficiary households were chosen out of households that have participated in pilot activities, which would have less impact on increase in household income.</li> <li>In order to supplement the questionnaire-based interview survey, separate interviews were conducted with IG. Information on animal rotation systems was also updated and analysis was made on the records of pruning practice of fruit trees, sales of vegetables and consumption volume of firewood.</li> </ul>

## Interviewees and Details of the Questions

- 5) Interviewers: Monitoring Volunteers and LDC experts
- 6) Survey period: From the second half of January 2013 to the beginning of February 2013
- 7) Limitation of the survey:

It is still too early to verify positive impacts of some livelihood development activities on increase in cash income. Activities such as cow, fish and chicken raisings, fruit tree plantations and broom makings were recently introduced so that it is expected to take a longer time for these activities to contribute to increase in cash income. Therefore, it has been decided to examine qualitative responses from interviewees such as the C/P and village heads. In addition, the impact survey should have been carried out in comparison with the baseline survey results. However, results of the baseline survey were not sufficient enough to compare with the impact survey results. Therefore, in the impact survey, interviewees were asked to examine if they had observed any significant increase or decrease in comparison with the income in the previous year (2011)

(2) Questionnaire to the C/P at provincial and city/district levels(capacity development)

# QUESTIONNAIRE FOR PROJECT MANAGEMENT UNIT

# Livelihood Development Component (LDC) SUSFORM-NOW

# Dear Mr. /Ms.

We are working for the Livelihood Development Component (LDC) in the Project for Sustainable Forest Management in the Northwest Watershed area (SUSFORM-NOW). We would like to collect some information about your skill development from the beginning of LDC activities in October 2011 up to January 2013 in order to assess if the activity inputs have so far been appropriate.

Your personal information and the other collected information will be used only for the purpose of project impact assessment. Your understanding and cooperation are truly appreciated.

If you are working for PPMU or D/CPMU, please give us your answers from your organizational viewpoint.

Code:

<u> </u>	
Your name	
Date of birth	
Gender	
Position	
Organization	
Education	
Contact no	

Please fill in your identification

# I. FACTS ABOUT INVOLVEMENT OF PROJECT MANAGEMENT UNIT

# 1. LDC activities in which your project management unit has been involved since October 2011 up to January 2013

(1) Please raise LDC's activities in which your project managemet unit has been involved and its major roles. (pls tick "X")

				Туре	s of a	ctivity	7		Your role						
No	Name of activities	1. Training/workshop	2. IG formation and development	3. Study tour	4. Delivery	5. Monitoring	6. Public relation	7. Others	a. facilitator	b. trainer	c. organizer	d. lecturer	e. chair	f. Technical advisor	g. others (logictics)
1	Animal raising														
	- Pig raising														
	- Cow raising														
	- Fish raising														
	- Chicken raising														
2	Vegetable cultivation														
3	Fruit tree plantation														
4	Contour line cultivation														
5	Lao type stoves														
6	Biogas utilization														
7	Pe Mong wine														
8	Broom-making														
9	Tofu making														
10	Trade fair														
11	Village meeting														
12	Monthly meeting														

# 2. LDC training courses in which staff of your project management unit have participated since October 2011 up to now

(1) Please raise LDC trainings (including study tours) in which staff of your project management unit has participated; your ranking of its usefulness and reasons for your ranking.

No	Name of trainings (ex. "Process manual training, study tour to Hoa Binh")	Reasons for your ranking
1		
2		
3		
4		
5		
6		

# II. SKILL DEVELOPMENT

# 1. Comparison of skills that the staff in your project management unit have obtained

(1) Please circle or highlight with red color either number of <u>1 (Low) up to 5 (High)</u> to show at which level skills of your project management unit were placed as of Oct 2011, and are placed as of Jan 2013.

No	Skills		Level as o	of you f Oct 2	r skill: <b>2011</b>	5	Level of your skills as of Jan 2013					
		Low			H	ligh	Low		High			
1	<b>Facilitation skill</b> for planning and implementation of pilot activities to be carried out by villagers	1	2	3	4	5	1	2	3	4	5	
2	<b>Coordination skill</b> among different organizations for assisting implementation of pilot activities	1	2	3	4	5	1	2	3	4	5	
3	Management skill to manage implementation of SUSFORM-NOW	1	2	3	4	5	1	2	3	4	5	
4	<b>Technical skill</b> to provide villagers with technical advices	1	2	3	4	5	1	2	3	4	5	
5	<b>Planning skill</b> to prepare implementation plan of SUSFORM-NOW	1	2	3	4	5	1	2	3	4	5	
6	<b>Implementation skill</b> to provide villagers with advices on implementation of pilot activities	1	2	3	4	5	1	2	3	4	5	
7	<b>Monitoring skill</b> to monitor the implementation of pilot activities and SUSFORM-NOW and make necessary adjustments of the plans	1	2	3	4	5	1	2	3	4	5	
8	<b>Communication skill</b> to listen and explain to villagers and other relevant personnel for planning and implementation of pilot activities	1	2	3	4	5	1	2	3	4	5	
9	Others (specify)	1	2	3	4	5	1	2	3	4	5	

# (2) Causes of improvement / deterioration

Please tick "X" major causes (as many as you think are appropriate) with which skills of your project management board have been improved / deteriorated.

No.	Major causes	1.Yes	0. No
1	Objectives of LDC trainings have met my needs.		
2	Contents of LDC trainings have been useful.		
3	Methodologies of LDC trainings (ex. group work) have been suitable.		
4	Publications like LDC news and video have been useful.		
5	Allowance was paid for training participation.		
6	LDC staff has supported me for applying the particular skills in the fields.		
7	SUSFORM-NOW, excluding LDC, have provided trainings.		
8	DARD has provided technical trainings in addition to LDC's trainings during Oct 2011 and Jan 2013.		
9	Practical opportunities for applying the particular skills in the fields have been given.		
10	Others (specify)		

# 2. Skill dissemination

- (2) If Yes, please identify which skills your organization and staff have disseminated, how and to whom?

			To whom (pls tick "X") outside your organization (PPMU or D/C PMU)									
No	Disseminated skills	minated cills How (ex. by conducting trainings, workshops, by reporting)		b. Your boss	c. Your staff	d. Lower level gov. unit	e. Villagers	f. Others				
1												
2												
3												
4												
5												
6												
7												

# **III. FURTHER NEEDS FOR CAPACITY DEVELOPMENT**

## 1. Your needs for further capacity development

Which skills do you think your organization needs further for assistance of better project planning and implementation of pilot activities at villages (In other words, which skills would you like to further develop for the project planning and implementation of pilot activities)?

And how (with which opportunities) are you going to develop your organization's capacity? (ex. by getting training opportunities from DARD, SUSFORM-NOW, by practicing more in the project implementation)

No	Skills you think your organization needs to further develop	How (with which opportunity) you try to develop the capacity
1		
2		
3		
4		
5		
6		
7		

(3) Questionnaire to the C/P at ward/commune people's committee and village heads (capacity development)

# QUESTIONNAIRE FOR COMMUNE AND VILLAGE HEAD

# Livelihood Development Component (LDC) SUSFORM-NOW

# Dear Mr. /Ms.

We are working for the Livelihood Development Component (LDC) in the Project for Sustainable Forest Management in the Northwest Watershed area (SUSFORM-NOW). We would like to collect some information about your skill development from the beginning of LDC activities in October 2011 up to January 2013 in order to assess if the activity inputs have so far been appropriate.

Your personal information and the other collected information will be used only for the purpose of project impact assessment. Your understanding and cooperation are truly appreciated.

If you are working for PPMU or D/CPMU, please give us your answers from your organizational viewpoint.

Code:

Please fill in your identification.								
Your name:								
Date of birth:								
Gender:								
Position:								
Organization:								
Education:								
Contact no:								

# I. FACTS ABOUT YOUR INVOLVEMENT

# 1. LDC activities in which you have been involved since October 2011 up to January 2013

Please raise your role in LDC activities

				Туре	s of ac	tivity			Your role (pls tick X)						
No	Name of activities	1. Training/workshop	2. IG formation and development	3. Study tour	4. Delivery	5. Monitoring	6. Public relations	7. Others (	a. facilitator	b. trainer	c. organizer	d. lecturer	e. chair	f. Technical advisor	g. others (logistics)
1	Animal raising														
	- Pig raising														
	- Cow raising														
	- Fish raising														
	- Chicken raising														
2	Vegetable cultivation														
3	Fruit tree plantation														
4	Contour line cultivation														
5	Lao type stoves														
6	Biogas utilization														
7	Pe Mong wine														
8	Broom-making														
9	Tofu making														
10	Trade fair														
11	Village meeting														
12	Monthly meeting														

# 2. DC training courses in which you have participated since October 2011 up to now

Please raise 5 best LDC trainings (including study tours) in which you have participated and your reasons of selection.

No	Name of trainings (ex. "Process manual training, study tour to Hoa Binh")	easons for your selection
1		
2		
3		
4		
5		

# **II. SKILL DEVELOPMENT**

# 1. Comparison of skills you have

(1) Please circle or highlight with red color either number of <u>1 (Low) up to 5 (High)</u> to show at which level your skills were placed as of Oct 2011, and are placed as of Jan 2013.

No.	Your skills	]	Level as of	of you f <b>Oct</b> 2	r skills <b>2011</b>	5	Level of your skills as of Jan 2013					
		Low			H	ligh	Low		High			
1	<b>Facilitation skill</b> for planning and implementation of pilot activities to be carried out by villagers	1	2	3	4	5	1	2	3	4	5	
2	<b>Coordination skill</b> among different organizations for assisting implementation of pilot activities	1	2	3	4	5	1	2	3	4	5	
3	Management skill to manage implementation of SUSFORM-NOW	1	2	3	4	5	1	2	3	4	5	
4	<b>Technical skill</b> to provide villagers with technical advices	1	2	3	4	5	1	2	3	4	5	
5	<b>Planning skill</b> to prepare implementation plan of SUSFORM-NOW	1	2	3	4	5	1	2	3	4	5	
6	<b>Implementation skill</b> to provide villagers with advices on implementation of pilot activities	1	2	3	4	5	1	2	3	4	5	
7	<b>Monitoring skill</b> to monitor the implementation of pilot activities and SUSFORM-NOW and make necessary adjustments of the plans	1	2	3	4	5	1	2	3	4	5	
8	<b>Communication skill</b> to listen and explain to villagers and other relevant personnel for planning and implementation of pilot activities	1	2	3	4	5	1	2	3	4	5	
9	Others (specify)	1	2	3	4	5	1	2	3	4	5	

# (2) Causes of improvement / deterioration

Please tick "X" major causes (as many as you think are appropriate) with which your skills have been improved / deteriorated.

No.	Major causes	1.Yes	0. No
1	Objectives of LDC trainings have met my needs		
2	Contents of LDC trainings have been useful		
3	Methodologies of LDC trainings (ex. group work) have been suitable		
4	Publications like LDC news and video have been useful		
5	Allowance was paid for training participation		
6	LDC staff has supported me for applying the particular skills in the fields		
7	SUSFORM-NOW, excluding LDC, have provided trainings		
8	DARD and other organizations (extensionists, NGO staff, etc.) have provided technical trainings in addition to LDC's trainings during Oct 2011 and Jan 2013. If Yes, specify		
9	Practical opportunities for applying the particular skills in the fields have been given		
10	Others (specify)		

# 2. Skill dissemination

- (1) Have you disseminated the skills and knowledge you have acquired through the LDC activities and trainings? ...... (1=Yes; 2 = No)
- (2) If Yes, please identify which skills you have disseminated, how and to whom?

				Т	o whom (	pls tick "X	Κ")	
No	Disseminated skills	How (ex. by conducting trainings, workshops, by reporting)	a. Your colleagues	b. Your boss	c. Your staff	d. Lower level gov. unit	e. Villagers	f. Others
1								
2								
3								
4								
5								

# **III. FURTHER NEEDS FOR CAPACITY DEVELOPMENT**

# 1. Your needs for further capacity development

Which skills do y ou think you need further for assisting better project planning and implementation of pilot activities at villages (In other words, which skills would you like to further develop for assisting the project planning and implementation of pilot activities)?

And how (with which opportunities) are you going to develop your capacity? (ex. by getting training opportunities from DARD, SUSFORM-NOW, by practicing more in the project implementation)

No	Skills you think you need to further develop	What will be the best way (with which opportunity) for you to develop your capacity
1		
2		
3		

(4) Questionnaire to households in villages (survey on household income and expenditures, life improvement)

Code\_\_\_\_\_

Village Name:	(1=SL, 2=PBan, 3=TGC, 4=HMA, 5=NPA, 6=HTB, 7=NN, 8=KN, 9=Pbua)
Impact survey on:	
Interviewer:	
Date:	

# QUESTIONNAIRE FOR IMPACT SURVEY LIVELIHOOD DEVELOPMENT COMPONENT (LDC), SUSFORM-NOW

## I. General information of about household

# 1. Household Profile

Information on members of the HH, who share the meals and live under one roof in the last 6 months

No.	Full Name	Relation to HH head	Sex M=Male F=Female	Year of birth	Ethnicity (*1)	Education (*2)	Working status (*3)
1	(HH head)						
2	(Spouse)						
3							
4							
5							
6							
7							
8							

Note:

\*1 Ethnicity: 1=Thai, 2=H'mong, 3= Kho Mu, 4=Kinh, 5=others

\*2 Education: 1=Univ, 2=College, 3=Vocational, 4=High school, 5=Secondary, 6=Primary, 7=No school

\*3 Working status: 1=Work, 2=Not Work, 3=Housework,4=Student, 5=others

## 2. LDC Activities involved

Please specify which LDC activities your household has been involved in 2012. Please tick "X" if Yes for all activities you have been involved in.

	Activity	Yes		Activity	Yes	Activity		Yes	
1	Cow		2	Farrowing sow		3	Mong Cai sow		
4	Cross hog		5	Chicken		6	Fish		
7	Biogas		8	Organic vegetable		9	Fruit trees		
10	Contour line plantation		11	Fodder grass		12	Rocket stove		
13	Lao-type stove		14	Pe Mong wine		15	Broom (Chit)		
16	Others ( )								
17	Do not participate in any activity of LDC								

# II. Seasonal Income and Expenditure by Product

Please provide land area you have /use, yield volume from the land, and sales revenue and expenditure borne by using the land.

# 1. Land cultivation

		Landaraa	Viald in	Salas valuma	Salas Davanua	]	Expenditure	(2012) (VND	)	
No.	Type of crop	Type of crop $(m2)$ $2012 (kg)$ $in 2012 (kg)$	(2012) (VND)	Seeds / seedlings	Fertilizer	Herbicide / Pesticide	Others	Remark		
1										
i	Winter-spring									
ii	Sumer-autumn									
2	Upland rice									
3	Cassava									
4	Maize									
5	Home garden									
5	Please specify the spices:									
6	Fallow land									
7	Forest land									
/	Please specify the tree kinds:									
9	Others (specify)									
10	Others ()									

# 2. Animal husbandry

			Out of which number of	Sales	Sales	Exp				
No.	. Name of animal	f animal Number of animal provided by SUSFORM-NOW (*	animal provided by SUSFORM-NOW (*4)	volume in 2012 (kg)	(2012) (VND)	Finger- lings / Chicks / piglets	Food	Medicine	Others	Remark
1	Buffalo									
2	Cow									
3	Pig									
4	Chicken									
5	Duck									
6	Fish	Number: Pond area:								
7	Others (specify)									

Note: (\*4) If the HH had received a animal seedlig from Project, but it has transferred the received animal seedling to the other HH, it should be written: (1, transferred to the following cycle); if the HH has not received the animal seedling, it should be written: (0, in the waiting list).

# 3. Other products

		Production Sales volume		Out of which sold Sales Revenue	Expenditure (2012) (VND)				
No.	Name of product	amount (Unit:)	(VND)	volume in 2012 (Unit)	(2012) (VND)	Material	Facilities	Facilities Tools Ot	Others
1	Wine								
2	Broom								
3	Others								

# III. Monthly incomes and expenditures the Household

# 1. Monthly Household Income (cash income)

Please raise monthly regular income which had been averagely seen during 2012.

No.	Activity	Amount (VND)	Remark
1	Wage received from hired work by others		
2	Receipt from services provided for others		
3	Salary from the government works		
4	Salary from business		
5	Salary collected from children and relatives		
6	Regular monthly income from selling products (*5)		
7	Others (ex. subsidies)		

Note: Products to be put into this calculation should be different from products (such as cultivated products, animal raising products, wine, chit broom ...) that are mentioned in the Item II.

## 2. Monthly Household Expenditure (cash expenditure)

Please raise regular expenditures borne monthly which had been averagely seen during 2012.

No.	Activity	Amount (VND)	Remark
1	Food and drinking		
2	Health care		
3	Education		
4	Wedding / funeral		
5	Housing		
6	Communication (mobile phone etc)		
7	Transportation (including fuel for motor cycles)		
8	Savings		
9	Amount of loan repayment (principle and interest)		
10	Clothes		
11	Funitures		
12	Others (village contribution, social fees, taxes, land rent, etc)		

#### 3. Loans

Please specify if you currently have loans from banks or relatives.

No.	Source of loan	Purpose	Loan period (Yr)	Total loan amount (VND)	Outstanding loan as of Jan 2013 (VND)
1	Bank				
2	Friends / Relatives				
3	Pawnbrokers / Middlemen				
4	Others				

## **IV. Sanitation**

Choose the toilet type the family uses, and state since which month / year they has used it.  $\dots$  1=WC with septic tank, 2= WC without septic tank, 3= None

Since (year).....

# V. Fuel sources

Please specify the sources of cooking, lighting and others. Please tick "X" if yes in the columns.

No	Purpose	Sources (*6)						Type of stove (*7)					
		а	b	с	d	e	f	а	b	c	d	e	f
1	1 Cooking												
2	Lighting												
3	Irrigation												
4	Others (specify)												

Note:

\*6 Fuel sources of cooking, lighting a. Electricity; b. Gas; c. Biogas; d. Kerosene; e. Fire woods, and irrigation pumping f. Others (specify\_ ) \*7 Type of cooking stoves:

a. Traditional stove; b. Electric rice cooker;

c. Stove for cooking pigs' food;

d. Stove for making wine; e. Improved stove (Lao);

)

f. Others (specify

## VI. Food variety

(1) Please raise what you had **vesterday** or typical food you often have these days. Please tick "X" for all the foods you have.

	Starting time	Food variety (*8)								
	Starting time	а	b	с	d	e	f	g		
1 <sup>st</sup> meal										
2 <sup>nd</sup> meal										
3 <sup>rd</sup> meal										
4 <sup>th</sup> meal										

Note:

Food variety: a. rice, b. meat, c. vegetable, d. other food, e. fruits, f. wine, g. others \*8

(2) Do you have more variety of food compared with one year ago?

1=More variety than before (in which food: ); 2=no change; 3 =less variety (Reasons: )

## **Observation on the specific activity to be surveyed:**

(Remarks: Please raise if there has been any remarkable increase or decrease in income or expenditure in 2012 compared with the previous year, please specify it with reasons. If any of the expenditure has been borne by the LDC, please state so.)