PROJECT

“Reconstruction and sustainable management of degraded forest based on the combination of inter-planting nitrogen fixation rare tree species and thinning”

REPORT OF BASELIE SURVEY

Bos Thom village, Knapor commune, Sotrnikum District,

Siem Reap Province

08 March 2020

LIST OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

I. Introduction

This report presents the key findings from the selected Household Baseline Survey for comparison the contribution of the project to their livelihood improvement. The baseline survey was carried out in *Bos Thom village* between 20th of December to 25th of December 2019. The survey was designed, implemented and analysed by project team members.

This report is organized as follows. After providing an overview of the implementation site context and project background, the methodology for the household baseline survey are described. This is followed by an analysis of general household characteristics, livelihood activities, expenditure, finally this section is concluded by analysis of livelihoods. The report concludes with a summary of findings and recommendations for further implementation.

1.1 Context and Project Background

Bos Thom village is located in Khna Por commune, Sorth Nikum district of Siem Reap province. 30 km away from Siem Reap, the village has a relatively backward economic society. With a population of about 300, the residents are living by planting rice. The main source of income is beans, cucumber and other crops. In addition to food, the rest is sold to the market to meet their daily living expenses. Since the total plantation area of crops per household is less than 1 hectare, the average cash income for one household is lower than $300/year, indicating a very poor economic condition. It is necessary to improve the living standard of the local people through project activities.

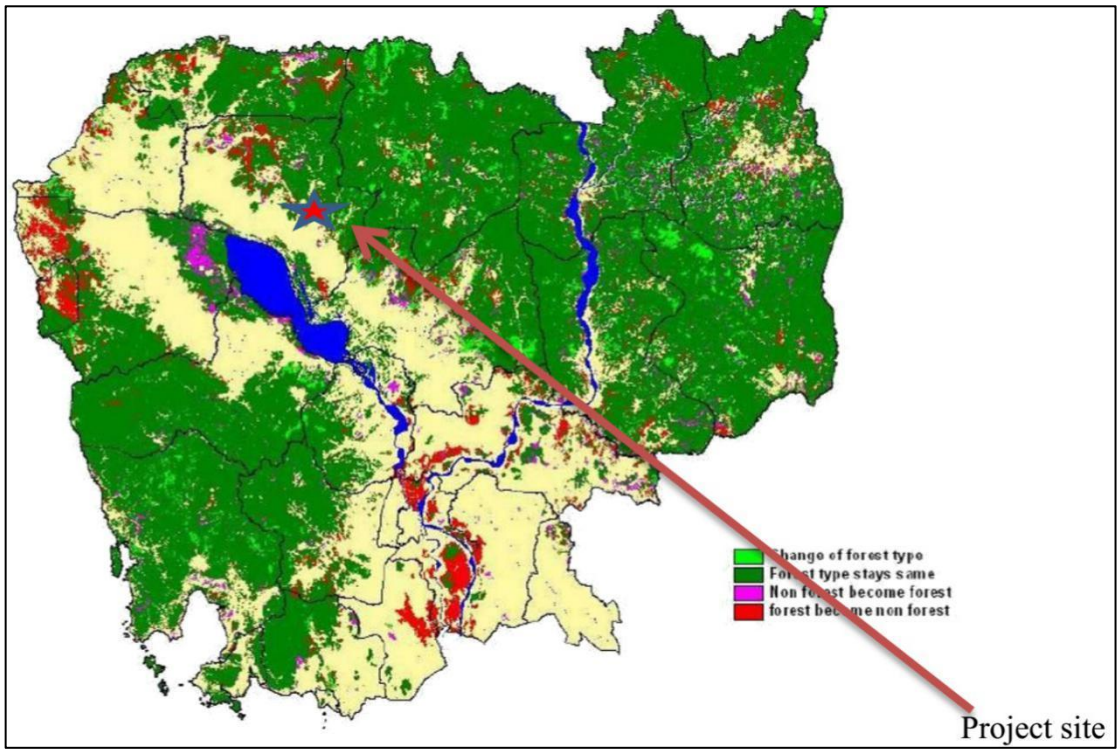

Figure 1. Location of Bos Thom Village

According to the status of Cambodian forestry, the forest is seriously degraded and it is imminent to restore and reconstruct the forest ecosystem. Through adopting scientific and reasonable reforestation measures, the future forest estate will not only provide biodiversity and ecosystem service values for Cambodia, but it will directly benefit the future livelihood of disadvantaged rural populations. Therefore, this project follows the principles of "feed long-term on short-term, combine long-term with short-term, and integrate economic and ecological benefits", targeting degraded woodlands, supplemented by scientific measures to optimize the right combinations of cover (light), water availability, soil type, nutrient supply, and other natural resources, to make full use of degraded land for future functional forest ecosystems. Obviously, this project can promote and improve sustainable forest management and rehabilitation in Cambodia.

The Project has three main approaches. The first is a focus on inter-planting selected target local tree species with nitrogen-fixing tree species in order to increase the survival and number of target tree species, improve tree structure, and promote a positive succession of the forest ecosystem. The overall purpose is to gradually promote a resilient uneven-aged mixed forest, and at the same time to enhance productivity, stand quality, stand stability and ecological function of the forest. The second approach is to influence the direction of forest succession and to shorten the cycle of forest resource cultivation through thinning the non-target tree species. The third approach is to enhance the livelihoods of the rural people through increasing economic source, providing living facilities and their involvement in reforestation programs. During the whole project, we will conduct various kinds of activities, and improve the local people's awareness through capacity-building, information-sharing, and demonstration activities.

1.2 Objectives of the Survey

The primary reason for conducting the baseline survey is to facilitate impact assessment at the end of the intervention or to facilitate end evaluation and monitoring in the course of project implementation, with particular focus to the project's main objectives. The baseline survey has been designed to ensure that changes in these objectives and indicators can be measured over the course of the project.

The goal of the project is to increase the level of forest resource restoration and promote forest sustainable management in Cambodia through the establishment of demonstration forests and technical personnel training. To improve the livelihoods of local people through non-forestry livelihood activities.

The specific objectives of the Household Baseline Survey are as follows:

1. To understand the situation, living standard, social economic of the selected households in the target area with respect to livelihood activities, annual income and expand, and the support of the project,
2. To assist the project and stakeholders in determining whether verifiable indicators and related targets, stated at the beginning of the project and encapsulated in Outcomes 2 is being achieved over time,
3. Examine the current situation of the project beneficiaries in terms of their economic and social aspects and the issues affecting their lives.

2. Data & Methodology

The household baseline survey was conducted in 28 households in Bos Thom village. Data was collected *starting from 20th of December up to 25th of December, 2019* as part of the survey to generate a baseline report for the 'Restoration and Livelihood Enhancement Project'. Proportional sample size was considered to determine the actual sample needed for each of data collection tools for the project areas. Households' selection methods are discussed in the next consecutive sections.

2.1 Sample Selection and Sampling Technique

There are 28 direct beneficiaries from the project. All of them were selected for interview. No gender influence was factored into the study. Whether a female or male responded to the interview depended on the time of day as gender roles and duties would determine at what time of day a household member was likely to be found at home.

A structured questionnaire, incorporating both open and closed-ended questions, was initially developed by the assigned team members. Questions were derived from a review of the project log frame for identification of benchmarking indicators. These questions were examined by project advisor who made further contributions to the questionnaire content and finalized through the process of consultation with the team to ensure that the questionnaire was sufficiently comprehensive [See Annex 1].

Before conducting the survey, a pre-test was undertaken several villagers to establish the quality and comprehensiveness of the survey and to ensure that the expected answers were drawn out by the interviewers. Note that this same people were excluded on the actual survey not to put so many burdens on them. All 4 enumerators conducted the pilot survey during the course of one day. The findings from the pre-test revealed that some of the questions were not clearly understood by the respondents. In addition, there were some gaps in the questionnaire and it was not deemed sufficiently comprehensive. The lessons learnt from the pre-test were discussed with the enumerators and incorporated into a revised version of the questionnaire.

2.2 Training of Enumerators

Four enumerators from the project team with suitable qualifications and experience in socio-economic data collection were formulate to undertake the survey. In addition, the project coordinator had given training to the enumerators, supervised their work and organized the entire mission. The enumeration team received one day's classroom training to develop an understanding of the survey questionnaire, to gain practice in completing the questionnaire, to understand the definition of some peculiar technical terms and to practice interviewing techniques with survey colleagues.

2.3 Field operation, Data Entry and Analysis

Data collection from the field was conducted over a 5-day period between the 20th of December up to 25th of December 2019. The team leader in the field was constantly on hand to provide clarification and instruction to the enumeration team on concepts, definitions and to resolve difficulties in carrying out the field work. Sampled interview question was checked on a question

by question basis and explanations sought for unclear information or errors. The leader enhanced the team's potential through identifying the strengths and weaknesses of individuals within the team and pairing team members accordingly.

Each questionnaire was submitted by each enumerator to the leader. The survey data from each location, once edited and cleared, were entered to Microsoft Excel software for the subsequent analysis to be made on the survey.

3. Results and Discussions

3.1 Demographic and Socio-economic Characteristics

From those who had given valid responses, 82.14% of the respondents are found to be male while the rest are females. The reason why we get such inflated sex ratio (more male respondents) is that as the survey is house to house mostly males are likely head of the family and more involvement in the project. Coming to the age distribution of the respondents, majority of them are found to be less than 35 and 36-45 age categories. This shows most of them are on the productive age which is important for the economic productivity of the pastoral people. [See Figure 2]

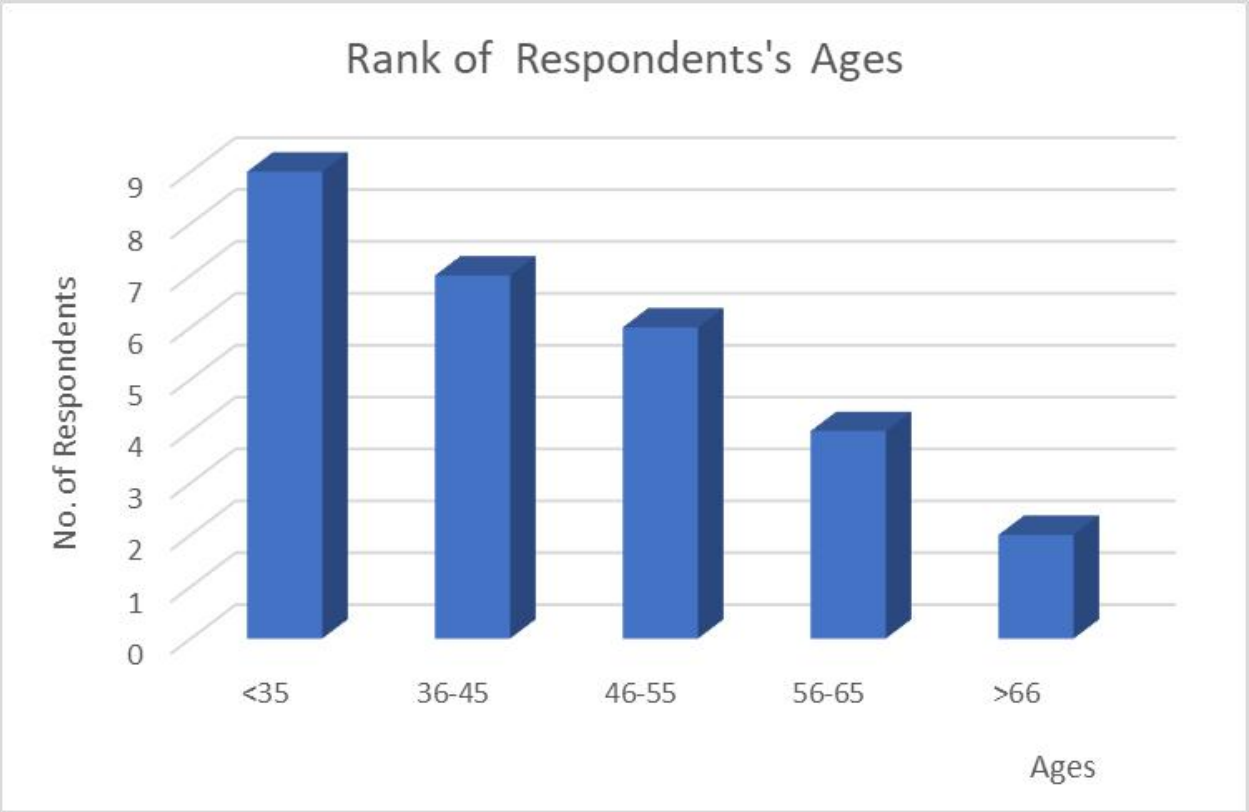

Figure 2. *The rang of respondent ages*

As indicated in Table 1, majority (53.57%) of the respondents surveyed are illiterate. We have observed this when we were on field work. Most of them are middle ages and there was civil war during their childhood. This also has its own impact on labor production and productivity. (See Table 1)

Table 1 Educational status of respondents

Level of Education	Frequency	Percentage
None	15	53.57
Primary	9	32.14
Secondary	3	10.71
High	1	3.57

Majority of the respondents (85.71%) of the survey areas are working on farming for their livelihood. 14.28% are having extra livelihood activities (village chief and house constructor) adding to farming while the rest is a vendor and a teacher. [See Figure 3]

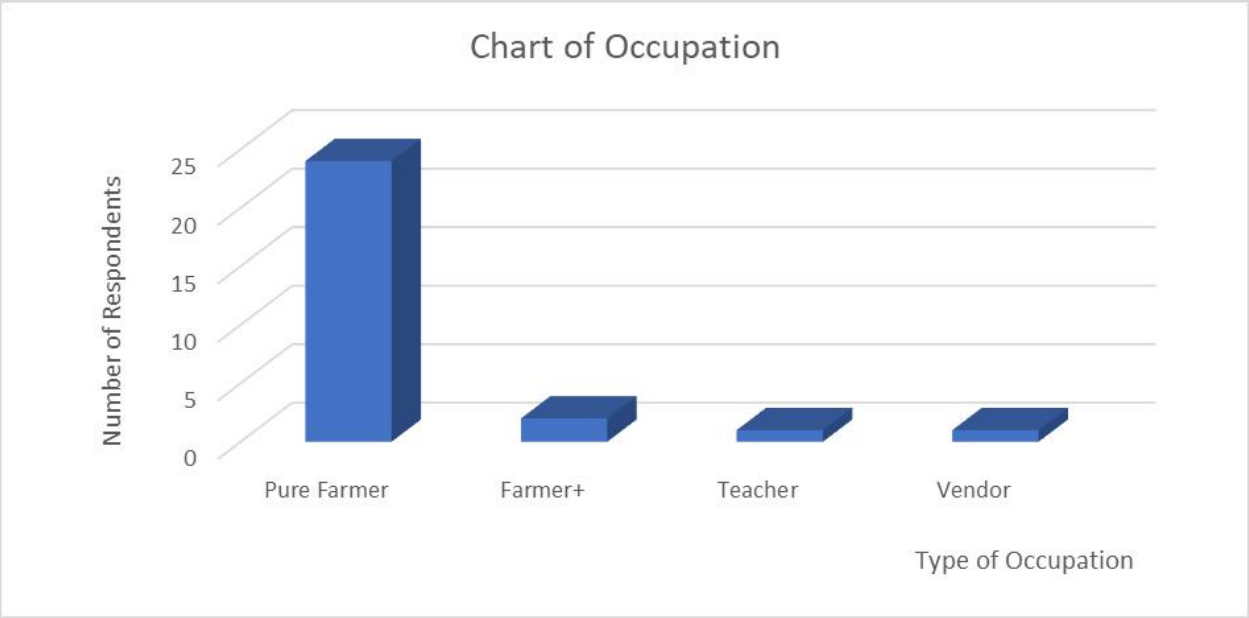

Figure 3. Occupations of Respondents

All respondents of surveyed answered that they are married. There are households containing two to nine members. The largest family has 9 members and smallest family has two members. Most of households have 4 members, and followed by 5 and 6 members. [See Table 2]

Table 2 Number of members of the respondent families

No. of Family's Members	No. of Families
1	0
2	1
3	2
4	7
5	5
6	4

7	4
8	1
9	1
10	0

3.2 Social Economic Status

The output needed in this section is to see status of social economic of each household through the land ownership, annual income by various activities practiced, annual expenditure and benefit from the project.

The land holding patterns are significantly different. Majority of the respondents (89.28%) are having residential land less than one hectare while 7.14% are big farm land owners (5ha) followed by 7.14% (4ha) and 10.71% have no farm land. [See Figure 4]

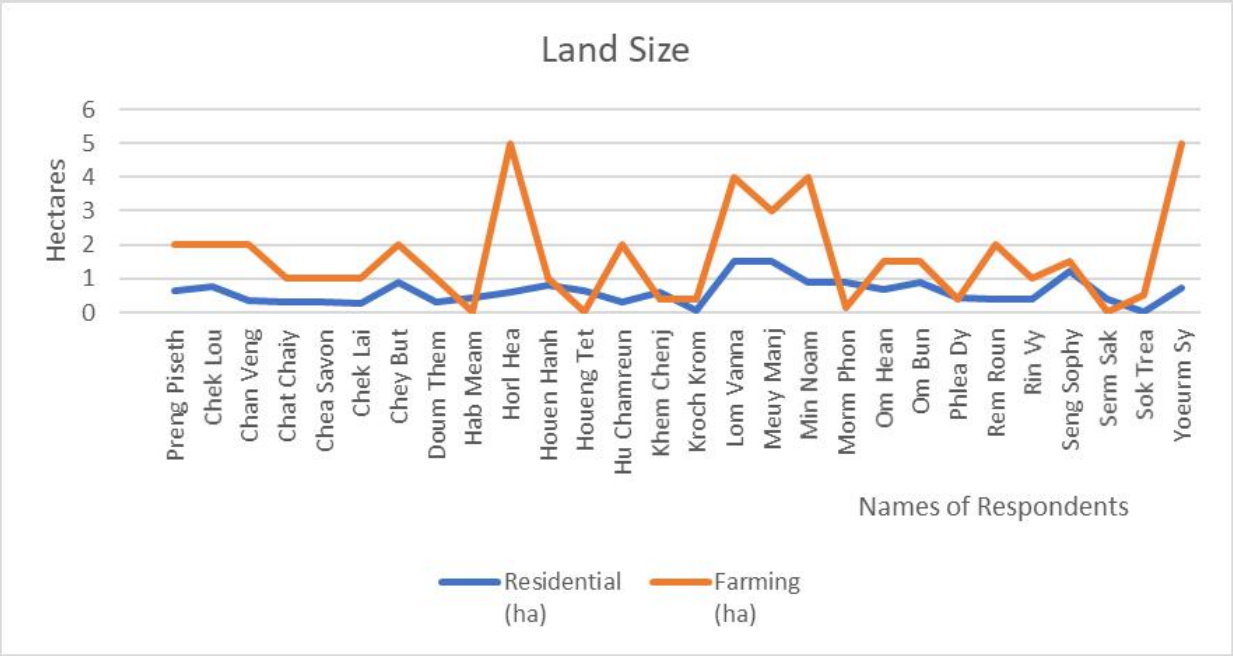

Figure 4. Landownership of respondents

We can see that the biggest income source is from the labour which is contributed 67.71% of annual incomes. All respondents including their family members work as part time for other villagers such as cassava cultivation, mango farm, house construction, and so on. The second income source is rice production. 19.14% of incomes are from selling rice while some of them don't sell it but keep for household consumption. 6.50% generate incomes from selling vegetable. The figure is excluded the amount of vegetable production for using in the house. The rest income is from livestock and only one case is from charcoal production. [See Table 3]

Table 3 Sources of Incomes

SOURCES OF INCOME	NO. HOUSEHOLDS	PERCENTAGE (%)
RICE	25	19.14
VEGETABLE	6	6.50
LIVESTOCK	12	4.33
LABOUR	28	67.71
CHARCOAL PRODUCTION	1	2.32

Subjecting to the answer of respondents to the survey, the biggest expenditure (32.39%) is on food which covers meet, fish, vegetable and ingredient. It is followed by expenditure on farming activities (22.63%) such as soil preparation, cultivation, fertilizer, maintenance and harvesting. 20.59% is investing for their children study at the secondary school and one case in the university. The rest is go to gasoline for transportation, medicine, and electricity. There is no category of other expenditures such as clothing, social event (married, religion ceremony) included in the survey as the respondent could not calculate it. [See Table 4]

Table 4 List of Expenditures

EXPENDITURES	NO. HOUSEHOLDS	PERCENTAGES (%)
FARM	28	22.63
FOOD	28	32.39
HEALTH	27	10.66
EDUCATION	19	20.59
ELECTRICITY	20	2.36
GASOLINE	27	11.37

The 85.71% of respondents have higher annual incomes than expenditure while 14.29% have less incomes. In average, each household can earn US.$ 2,774.36 annually and spend US.$ 1,922.18. It means they can save around US.$ 800 as the asset.

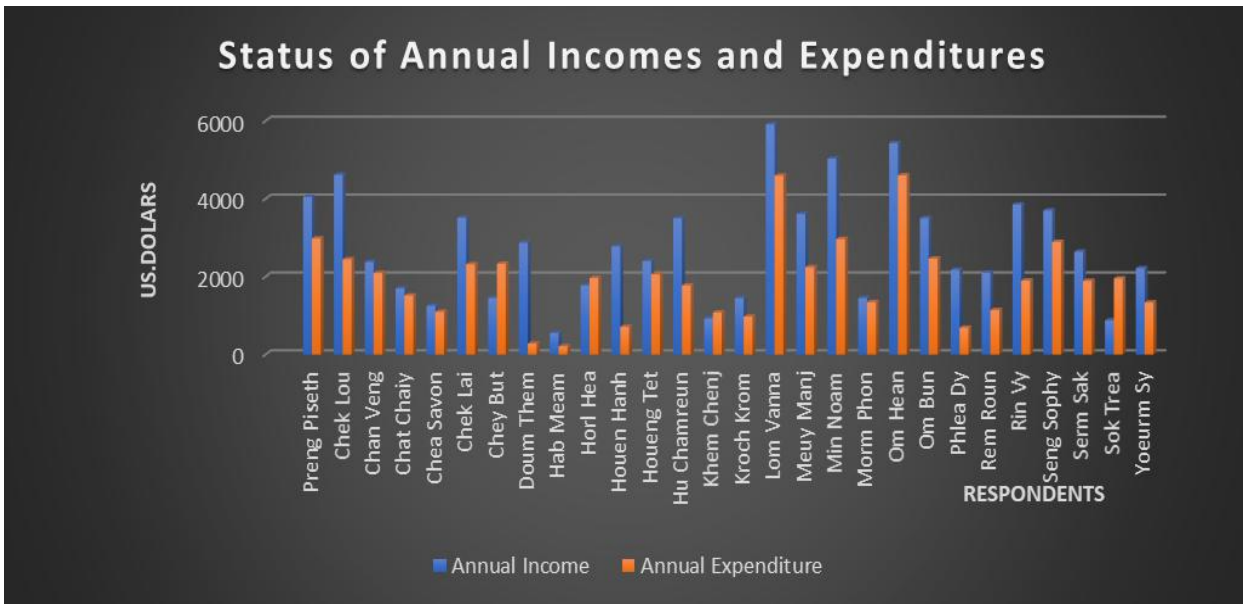

Figure 5. Status of Annual Income and Expenses of Respondents

4. Conclusions

The 82.14% of respondents are males and the head of household who know more information either family status and project information. Majority of them is age below 45 years old which is a productive age.

53 % are illiterate since they were born during the civil war and rural area where education was not widely distributed at that time. This also has its own impact on labor production and productivity

About 85% are pure farmer (working on rice and crop production), and a few are having extra job such as house constructor, vendor, village chief, and high school teacher.

The 89% of them have residential land including home-garden below one hectare, and the majority have agricultural land ranking from one to five hectares which can generate their incomes differently subjected to the size of the land.

According to the survey result, the biggest income sources of respondents is from labour fee which represents 67.71% of annual income. It is followed by rice production (19.14%) while very few incomes (6.50%) are from vegetable/crop production.

Respondents spent most on food consumption (32.39%) and followed by agricultural cultivation (20.59%). The rest is for education, health, transportation, electricity and so on.

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ANNEX

Annex I. Questionnaire

Tool 1: Interview Questionnaire

IDQ: _____

Date: _____

District	Commune	Village

1.0 General Information

1.1 Socioeconomic Profile

1.1.1 Name: _____ 1.1.2 Age _____

1.1.3 Sex _____ 1.1.4 Marital Status: _____ 1.1.5 Level of Education:

_____1.1.6 Occupation _____1.1.7 Members of Household:

_____

No.	Family Members	Sex	Age (yrs)	Relation in Family	Education	Marital Status	Occupation

1.2 Economic Resources and Equipment (Nos. and Date of Acquisition)

1.2.1 Land Resources (Area, Date, Kind What Are Planted, Tenure)

Type	Total Area	Ownership	Date Acquired/Bought
Residential			
Farming			

1.2.2 Equipment and Facilities

Equipment and Facilities	Quantity	Status/Condition	Source
House			
Solar Power System			
Water Tank			
TV			
Radio			
Car			
Motorcycle			
Bike cycle			
Tractors			
Walking tractor			
Animal			
Others			

1.2.3 What is your electricity source?

_____

1.3 Main Livelihood and Level of Income

Livelihood/Incoming sources	Option		Daily/Monthly/yearly incomes
	Yes	No	
Farming			
▪ Rice			
▪ Fruit Trees and Palms			
▪ Vegetables			
Poultry and Livestock			
▪ Piggery			

Livelihood/Incoming sources	Option		Daily/Monthly/yearly incomes
	Yes	No	
▪ Chicken			
▪ Ducks			
▪ Eggs			
▪ Cattle			
Employment/labours			
Fishing			
Forestry			
▪ NTFPs			
▪ Fuelwood/Charcoal			
▪ Wood			
▪ Hunting/Selling Wildlife			
Others			

1.4 Main Health Problems Commonly Experienced by the Household Last Month

Main Illness	Causes

1.5 Major Expenses

Items	Monthly Expenditure (Riles/month)
Farming and Livestock	
Food	
Health and Medication	
Education of Children	
Fuelwood	
Electricity	
Gasoline	

2.0 Support Received from the Project

2.1 Material Support Received from the Project (please be specific):

_____

2.2 Training

_____

3.0 Practice of the Technology

Farming Technology Being Practiced	Contribution of the Technology to Farm Production 1 = Limited 2 = Slightly Signiant 3 = Moderately Significant 4 = Highly Significant	Contribution of the Technology to HH Income 1 = Limited 2 = Slightly Signiant 3 = Moderately Significant 4 = Highly Significant

4.0 Trend of Production

	Production Trend: **1= Decreasing** **2= The Same** **3= Increasing**
Farming	
▪ Rice	
▪ Fruit Trees and Palms	
▪ Fruits from Annuals	
▪ Vegetables	
Poultry and Livestock	
▪ Piggery	
▪ Chicken	
▪ Ducks	
▪ Eggs	
▪ Cattle	

5.0 Impacts

5.1 What farming technology/skills have changed after you join the project?

_____

5.2 What did you learn from the project about forest conservation and restoration?

_____

5.3 In your opinion, since you participated in the project, what is the most significant change that happen to your family?

5.4 In your opinion, since the project was implemented, what is the most significant change that happened in your village/community.

Annex II. Dataset of Respondents

No	Names of Respondents	Sex	Age	Education	Occupation	Members HH	Residential (ha)	Farming (ha)	Income/Year $						Expenses/Year $						
									Rice	Vegetable	Livestock	Labour	Charcoal	Total	Farming	Food	Health	Education	Electricity	Gasoline	Total
1	Preng Piseth	M	43	Class 7	Farmer	7	0.63	2.00	250	0	200	1800	1800	4050	600	1200	100	360	120	600	2980
2	Chek Lou	M	43	Class 7	Farmer	6	0.75	2.00	1250	0	166	3200	0	4616	500	300	600	840	108	96	2444
3	Chan Veng	M	78	Class 8	Farmer	7	0.37	2.00	375	1400	0	600	0	2375	500	1200	75	120	48	150	2093
4	Chat Chaiy	M	47	No	Farmer	5	0.30	1.00	500	0	0	1200	0	1700	250	300	100	468	96	300	1514
5	Chea Savon	F	47	No	Farmer	4	0.30	1.00	750	0	0	500	0	1250	250	600	100	0	24	120	1094
6	Chek Lai	M	38	Calss3	Farmer	6	0.27	1.00	750	0	360	2400	0	3510	400	840	200	720	36	120	2316
7	Chey But	F	41	No	Farmer	7	0.90	2.00	250	0	0	1200	0	1450	250	840	100	600	60	480	2330
8	Doum Them	F	63	No	Farmer	3	0.32	1.00	370	100	0	2400	0	2870	100	150	0	0	0	30	280
9	Hab Meam	M	68	No	Farmer	2	0.45	0.00	0	300	0	250	0	550	60	120	30	0	0	0	210
10	Horl Hea	M	59	No	Farmer	7	0.60	5.00	875	0	300	600	0	1775	300	840	200	0	144	480	1964
11	Houen Hanh	M	31	Class5	Farmer	5	0.81	1.00	375	0	0	2400	0	2775	75	300	100	84	30	120	709
12	Houeng Tet	M	32	No	Farmer	6	0.64	0.00	0	0	0	2400	0	2400	200	300	1200	120		240	2060
13	Hu Chamreun	M	36	No	Farmer	4	0.31	2.00	500	0	0	3000	0	3500	375	900	50	300	30	120	1775
14	Khem Chenj	M	35	No	Farmer	7	0.60	0.40	375	50	0	500		925	300	360	60	180	0	180	1080
15	Kroch Krom	M	27	Class3	Farmer	3	0.06	0.38	250	0	0	1200	0	1450	500	300	50	0	0	120	970
16	Lom Vanna	M	47	Class5	Village Chife	5	1.50	4.00	1250	0	1060	3600	0	5910	1500	600	200	1800	132	360	4592
17	Meuy Manj	M	25	Class 12	Teacher	8	1.50	3.00	750	0	160	2700	0	3610	500	900	500	200	50	90	2240
18	Min Noam	M	51	Class 2	Farmer	5	0.87	4.00	1250	2000	100	1680		5030	1000	840	200	600	84	240	2964

19	Morm Phon	F	55	No	Farmer	4	0.88	0.16	250	0	0	1200	0	1450	70	840	300	0	14	120	1344
20	Om Hean	M	47	Class 5	Farmer	6	0.70	1.50	500	1200	130	3600		5430	500	840	200	2400	60	600	4600
21	Om Bun	M	56	No	Farmer	4	0.90	1.50	500	0	0	3000		3500	200	900	200	1044	24	96	2464
22	Phlea Dy	M	33	Class 3	Farmer	4	0.45	0.39	375	0	0	1800		2175	150	300	200	0	18	20	688
23	Rem Roun	M	27	No	Farmer	4	0.40	2.00	750	0	150	1200	0	2100	400	300	200	0	0	240	1140
24	Rin Vy	M	41	No	House construct or	7	0.41	1.00	250	0	0	3600		3850	500	600	200	240	0	360	1900
25	Seng Sophy	F	43	Class 5	Vandor	6	1.20	1.50	500	0	200	3000		3700	700	840	150	840	120	240	2890
26	Serm Sak	M	33	No	Farmer	5	0.40	0.00	0	0	240	2400		2640	300	1200	200	96	36	60	1892
27	Sok Trea	M	33	No	Farmer	4	0.03	0.50	375	0	0	500		875	1000	600	100	72	0	180	1952
28	Yoeurm Sy	M	51	Class 5	Farmer	5	0.72	5.00	1250	0	300	666		2216	700	120	120	0	36	360	1336