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FINAL REPORT ON

SOCIO-ECONOMIC (FINANCIAL) SURVEY IN THE TARGET VILLAGES

FOR

SUSTAINABLE NATURAL RESOURCE MANAGEMENT PROJECT

Centre for People and Environment of the Central Highlands

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All queries should be addressed to:

Officer in Charge of Forestry Projects/ Programmes

JICA Viet Nam Office

11F Corner Stone Building, 16 Phan Chu Trinh, Hoan Kiem, Ha Noi, Viet Nam

Tel: +84-4-3831-5005

Fax: + 84-4-3831-5009

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ABBREVIATIONS

BNBNP	Bidoup-Nui Ba National Park
CBET	Community-Based Ecotourism
CM	Collaborative Management
COPE	Centre for People and Environment of the Central Highlands
CPC	Commune People's Committee
DNWPFMB	Da Nhim Watershed Protection Forest Management Board
DSAF	Department of Social Agro-forestry and Forestry
DPC	District People's Committee
EFLO	Ecologically-Friendly Livelihood Options
JICA	Japan International Cooperation Agency
LURC	Land Use Right Certificate
NTFPs	Non-timber Forest Products
MARD	Ministry of Agriculture and Rural Development
PFES	Payments for Forest Environmental Services
PRA	Participatory Rural Appraisal
SNRM	Sustainable Natural Resource Management Project
SWOT	Strengths, Weaknesses, Opportunities, and Threat
TOR	Terms Of Reference
PC	People's committee
VR	Village regulations
VDF	Village Deveopment Fund

SUMMARY

The Center of People and Environment of the Central Highlands (COPE) has conducted a detailed survey in seven target villages in Langbiang Biosphere Reserve in order to provide basic information for the establishment of planning and monitoring activities for JICA project. To achieve the designed objectives, the survey team has used the most common PRA tools in all the target villages and households in the survey area.

The result findings are as follows: (1) The official and unofficial organizations based in and outside of the villages are important as well as influential on the development of the villages and their communities. In particular, the Farmers' Union, Women's Union, Banks, JICA, Village Management Board, and the CPC are considered to have a more positive impact on communities and households. (2) There are four household economy groups in each village (poor, near poor, medium and better off). In the four classified groups, the better off household group really excels others in land area and the average household income, including income from agricultural production and from non-agricultural activities; the poor and near-poor household groups have fewer sources for primary incomes and no income source from husbandry, trade and service provision; nearly half of these households still depend on natural forests. (3) The prevalent livelihood activities of the groups focus on cultivation of coffee plants and vegetables, apart from hired labor and contractual forest protection (PFES). The livelihood activities related to crops as commodity products vary in each geographical region; e.g., in Lac Duong area, the main incomes are based on vegetable and coffee cultivation, while in Da Nhim and Da Chais areas, the main incomes are from coffee cultivation. (4) Land use efficiency for agricultural purpose is very high, over 80% of the total cultivation area is used for coffee cultivation. Access to land resources of the poor household groups and better off household group is distinctly different. In land use, land for cultivation of vegetables and other crops has the highest rate of land ownership, followed by coffee cultivation land and finally fallow land. (5) Among other activities related to livelihood, exchange of production materials and agricultural products has generated an "internal" exchange market between households and shop owners in each area. Under this relationship, household farmers get into a bind having to use their products to settle the previously "agreed" lending/borrowing.

From the results, the report also discusses to clarify 7 issues that are considered to be directly related to the livelihoods of households and communities. The 7 issues includes: (i) Differentiation between household economy groups; (ii) The percentage of households having Red Books is disproportionate to the percentage of land area with Red Books; (iii) The area of cultivation land away from the villages cannot be controlled; (iv) The livelihoods of poor households are much dependent on forests; (v) The livelihoods of household groups are too dependent on coffee plants; (vi) Coffee bean market depends heavily on shops, and (vii) Households have to borrow from shops under the condition of both in cash and in-kind payment. Six groups of solutions are thereby proposed for implementation in the near future.

1.   INTRODUCTION

1.1.   Basis of village surveys

Japan International Cooperation Agency (JICA) and the Ministry of Agriculture and Rural Development (MARD) execute the Project "Sustainable Natural Resource Management" (SNRM) to enhance the sustainable management capacity of the forestry sector in Vietnam. The project has four components, in which component 3 "Biodiversity conservation" is implemented at the newly established Langbiang Biosphere Reserve in Lam Dong Province. The main objective of the project is to establish an integrated system of ecosystem management and cooperation for the conservation and sustainable management for the Langbiang Biosphere Reserve.

Activities of Component 3 have been being conducted in seven villages, including Bnor B and Bon Dung I (Lac Duong town), Da Ra Hoa, Da Blah and Da Tro (Da Nhim commune), Klong Klanh and Dung K'si (Da Chais commune). Based on the project's objectives, a detailed survey on target villages is conducted to provide basic information for the establishment of action plans and supervision of the project's activities. The survey is implemented by COPE. This report presents the integrated results of survey activities in seven villages of Langbiang Biosphere Reserve[1] in the framework of cooperation between JICA, Bidoup-Nui Ba National Park (BNBNP) and COPE

1.2.   Survey objectives

General objectives:

The main objective of the survey phase of target villages is to collect necessary data and information as the basis to establish and improve the Cooperative Management Mechanism, which is implemented in phase 1, support and determine potential options for livelihood improvement. In addition, the collected data and information will serve as a foundation for monitoring and evaluating the effectiveness of livelihood improvement and forest resources protection activities.

Specific objectives:

- To collect overall information on natural and socio-economic conditions of 7 target villages in Da Nhim commune, Da Chais commune and Lac Duong town within Langbiang Biosphere Reserve;

- To survey the existing situation, usage and management of forest and agricultural resources in the village, including access to and legal and practical ownership of the resources;

- To classify and assess current status of households according to their income, livelihoods and forest access; focusing on groups at risk, vulnerable groups and groups with differences in production management, access to finance and market and livelihoods development.

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[1] Detailed analysis information of 7 villages are presented in a separate report on each village

- To preliminarily survey people's evaluations of the activities supported by the stakeholders, including the activities of the 1st phase of JICA project, together with BNBNP and the local government;

- To evaluate the difficulties and problems of the village in general and each household group in particular as well as potential activities for livelihood development and management efficiency enhancement of village forest protection.

2.   IMPLEMENTATION METHODOLOGY

Village data survey was implemented by experienced researchers from COPE. Besides, a number of local people and staff members of BNBNP are also recruited to help the research team during the investigation and data collection. Implementation methodology and major sources of collected information are as below.

2.1.   Secondary information collection

In preliminary village survey, the research team collects related secondary data, including documents, reports and maps from different stakeholders such as Division for Natural resources and Environment, Division for Ethnic Affairs of Lac Duong District, BNBNP, Da Nhim Watershed Forest Protection Management Board (DNWPFMB), People's Committee of Da Nhim Commune (Da Nhim CPC), Da Chais Commune (Da Chais CPC) and some relevant unions in the commune and village. Secondary information and its sources include:

- Information on demographics of the villages (number of households, population and population structure, ethnicity) provided by the Division for Ethnic Affairs of Lac Duong District, Statistical Office of Lac Duong District (Annual Abstracts of Statistics, Lac Duong, 2014).

- List of poor households and poverty rate (number of households below the poverty threshold): poor, near poor (in accordance with Decision No. 59/2015/QD-TTg) provided by the Division for Ethnic Affairs of Lac Duong District.

- Information on current status of village land use (agricultural land area classified in terms of growing crops, forest land, pasture and others) Da Nhim CPC, Division for Natural Resources and Environment of Lac Duong District, Division for Ethnic Affairs of Lac Duong District.

- Information on major agricultural production (crop area, major harvested farm products, yields and average productivity of major farm produces, annual income) provided by Da Nhim CPC, Statistical Office of Lac Duong District (Annual Abstracts of Statistics, Lac Duong, 2014).

- Data of forest protection contracts (or PFES contract) (the number of households participating in forest protection contracts from 2011 to 2015, forest area managed by forest owners (BNBNP and DNWPFMB), or payment level provided by the Sub-departments of Forest Protection of BNBNP and DNWPFMB.

- Results of village surveys of 3 villages in Da Nhim commune (Da Blah, Da Tro, Da Ra Hoa) assessed by DSAF research team of Nong Lam University in 2010.

2.2.   Primary information collection

The research team consists of 15 members (7 researchers and 8 supporting students). They are divided into groups of 3 people to work simultaneously at different locations in the village. The students are responsible for interviewing each household under the supervision of team leaders. The two students of each group work individually to interview each household separately. Local people are usually absent or busy during the daytime so the groups sleep in the village to work overtime at night to ensure a sufficient number of households and adequate information collected.

Most groups conducted the surveys are supported by local people as guides and interpreters when in need. After each working day, all groups meet, discuss the problems and solutions, and check the information. After each survey, data input is done right at the village. Vague contents or unclear information is asked again directly, indirectly or via the telephone.

2.2.1.   Village data survey

Survey and information collection of the entire area was conducted using PRA tools. Specific contents and PRA tools are presented in Table 2.1.

Table 2.1 Logical framework of the contents and methods of secondary information collection.

No.	Survey objectives	Specific survey contents	PRA tools used	Participants, number of participants
1	To collect information on natural and economic-social conditions	Village history	Historical time-line Semi-structured interview	Research team (3 members) Group of local people (8 -10 people)
		Stakeholders involved in socio-economic activities of the village	Venn diagram Semi-structured interview	
2	To survey current status, usage and management of agricultural and forest resources	Cropland area and allocation	Resource map Trend analysis	Research team (3 members) Group of local people (8 -10 people) Interview group (1-2 students)
		Land ownership status	Resource map Household interview	
		Access to resources of the household groups	Group discussion Household interview	
		Forest protection management	Group discussion Household interview	

No.	Survey objectives	Specific survey contents	PRA tools used	Participants, number of participants
3	To classify and assess current status and livelihood development of household groups	Village household groups	Household wealth ranking	Research team (3 members)
		Livelihoods of Household groups (agricultural and non-agricultural activities)	Group discussion Household interview Group discussion by gender	Group of local people (8 -12 people) Interview group (1-2 students)
		Time allocation for activities of household groups	Seasonal calendar Household interview Group discussion by gender	
		Market access method	Group discussion Household interview	
4	To survey evaluations of local people on activities supported by stakeholders	Local organizations	Group discussion Household interview	Research team (3 members) Interview group (1-2 students)
		JICA components	Group discussion Household interview	Group of local people (7- 9 people)
5	To evaluate difficulties and problems of the village in general and each household group in particular as well as potential activities	Difficulties and problems of the village	Group discussion Semi-structured interview	Research team (3 members) Group of local people (7- 9 people)
		Difficulties and problems of the household groups	Group discussion Semi-structured interview	Interview group (1-2 students)

The time to carry out fieldwork is divided into 2 phases. Phase 1 from 4 June 2016 to 10 June 2016 (7 days). Work plan for each day us described in the Inception report, May 2016.

Location of surveyed villages in Lam Dong is presented in Figure 2.1
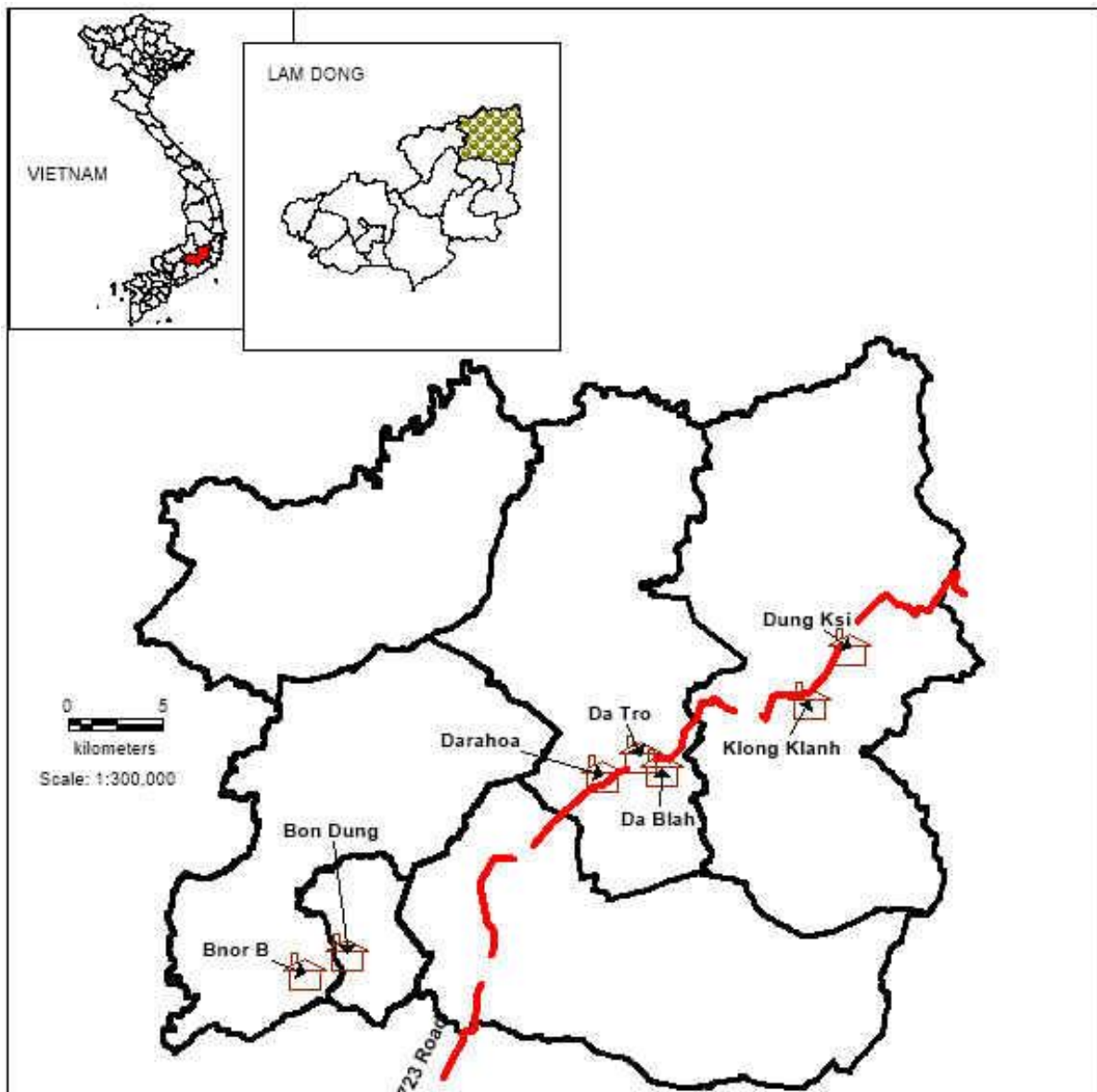
Figure 2.1. Location of surveyed villages

The research team (or working group) is divided into 2 small groups of 3 people. The aim is to diversify collected information and to compare information between the two groups if necessary. The working group conducted semi-structured interviews in combination with PRA tools. Community members included the Village Management Board, the village elders, representatives of groups participating in different components of the first phase of JICA project, groups of forest protection contractors, women's union, farmers' union. With regard to survey contents such as wealth ranking and seasonal calendar, female and male interviewees are interviewed separately because they might have had different points of view, and for the research team to compare information between the two groups.

Performing procedures of a number of major PRA tools are as follows:

(1) Resource mapping

The research team refer to the latest land use map as the basis for fieldwork (village transect walk) with a GPS device. To facilitate this process, a participatory resource map is depicted on an A0 paper sheet by a group of knowledgeable villagers of both genders. Based on the information on the PRA map combined with the locations determined on Google map, the village resource map is established. On that basis, the group also collects additional information in several locations that are the agricultural land inside and outside the village, land with or without Red Books, as well as the usage of existing resources (areas, allocation, number of farming households, main crops, etc.).

(2) Semi-structured interview and information analysis tools

PRA tools such as semi-structured interview, household wealth ranking (according to the criteria of the village community), SWOT analysis, institutional analysis (Venn diagram), trend analysis, seasonal calendar were all used to collect information on socio-economic problems as well as the livelihoods of the target villages.

With regards to the semi-structured interview tool, the research team invited groups of 5-8 people with good understandings of the village's socio-economic conditions (the village elders, village head, Village management board , house group leaders, team leaders) to collect basic information about the village, how to access to resources, forest protection and management activities, participation and implementation results of JICA activities, and problems of the village from development process and solutions.

Similarly, with regard to other tools such as household wealth ranking, SWOT analysis, stakeholder analysis, trend analysis, the research group also work with small groups of between 7- and 12 people (depending on topics and time) from all sectors of the village (positions, gender and age). However, group members vary across the groups depending on their knowledge. One or two tools are performed by each group in one discussion session according to the schedule previously announced.

(3) Group discussions by topic

Group discussions are made about issues of natural resources and livelihoods, rural financial services, customary law of natural resources uses, and identifications of problems and solutions. The research team organizes groups of maximum about eight people, and clearly explains the objectives to be achieved. During group discussions, female and male members are divided into separate groups to encourage the participation of women, and diversify people's observation.

In all interviews and group discussions for information collection, open questions to serve village information collection are prepared with PRA tools (Inception Report for Socio-economic survey, May 2016)

2.2.2.   *Household data survey*

Household survey aimed at collecting specific information that survey tools at village level failed to collect and at serving the establishment of a village database. The process and method of household surveys are carried out as follows:

- Content determination, questionnaire preparation: The questionnaire is prepared one month ahead of the proposed point of time to conduct the survey (May 2016). Firstly, based on the survey objectives defined in TOR, the research team built the topic / content lists. After that, the team classifies questions for each topic. The questions consist of many small ideas arranged in tables of logical sequence for the interview. All the questions are coded with answer options like 1, 2, 3, etc. For some open questions that do not determine all the alternatives then, the option "other" is added. Questions for cognitive assessment have additional options "do not know" or "no answer".

- Training interview groups: Right before official implementation of household interviews, the research team, consisting of eight supporting students, is trained in questionnaire use and household survey methods. The two training steps include: (i) instructions for reading and understanding the questions in the available questionnaire, (ii) instructions how to interview each household. All students' queries about the questionnaire or possible situations they might encounter in real interviews are discussed and answered.

- Checking and completing the interview questionnaire: this phase is done in two steps: (i) conducting trial interviews with some village HHs, (iii) reviewing the interview questionnaire and revising in consideration of answer ability of villagers. The review is made by all supporting students, research team members and one from JICA consultant team. The content, wording and orders of the questionnaire are later revised. The questionnaire is finalized and included in Annex 3 of the Inception Report.

- Determining the number of households and planning the interviews: the survey targeted all households in the village. The number of households in the village is identified through secondary documents (provided by the People's Committee of Lac Duong District, 2015) and updated by the village heads. The research team develops a plan to interview the household with 3-5 day duration. In case any of the households are not present at the time of the interview, interviewer(s) noted the households' names and the reason(s) of the failures.

2.3. Information analysis methods

2.3.1. Data analysis methods for the village

Village survey data are stored in the files of the village. Collected Information was sorted by the pre-defined topics (presented in Inception Report, June, 2016). Collected information consisted of two categories: information collected through group discussions with PRA tools and interview information synthesized from household surveys. The variable data (qualitative and quantitative) are entered into a previously encrypted file run on Excel. The Statgraphics software is used to process information. The digital images of the village are stored in its own folder. Some images that described the content of issues are selected for inclusion in the survey reports.

2.3.2. Data analysis methods for household groups

Statgraphics software is a supporting tool used for processing and analyzing the data collected from household surveys. The entire household interview data are entered into a spreadsheet

(Excel) in rows and columns, where rows are households and columns are variable indicators. The entered data are the codes in corresponding with the pre-defined levels in the questionnaires. The codes come from two main sources of data in the form of number (but different in nature), i.e.:

- The qualitative data such as ethnicity, occupation, type of livelihood, etc. will be nominated in accordance with codes such as 1, 2, 3 ... 9, and previously designed in the questionnaire.

- The quantitative data such as area, productivity, incomes, etc. are entered in their original values, and then will be hierarchically encrypted 1, 2, 3, depending on the requirements of the calculation.

Methods of processing and analyzing the data provided in two main forms: frequency count with the qualitative variables and mean value calculation of quantitative indicators (see details in Annex 2). Specifically as follows:

- After encryption of qualitative data such as ethnicity, occupation, type and of a number of quantitative indicators such as size, income, frequency is calculated according to the number of households. The displayed results were the frequency count of households (households) and the percentage of households (%) by each considered indicator.

- The quantitative data such as area, output, income, expenses, etc, will be calculated for the average value by households (average / household), the units of the household group, depending on the requirements of the analysis, for example the average of poor households, PFES-signing householders, 1st phase's JICA project participating householders and so on. Thus, there will be two kinds of average values: *the average number of households* based on the real household number of the considered indicator and *the average value of the village* based on the entire surveyed number of existing households in village.

- Outputs, incomes, and expenses of the livelihood activities are calculated on *household unit* (million VND/ household). Income is the earning in money of households from any livelihood activities, irrespective of commodity product or non-commodity products. The total expense of household includes domestic expenses and investment costs for production. Within each type of income or expense, there are sub-components.

- Among the components of a considered indicator, if necessary, calculation can be carried out to determine the structure of each component in relation to key indicators, called pure arithmetic structural relationship. Determination of structural relationship by calculating the percentage (%) of the components of the total. Thus, there will be two kinds of value expressing relative ratio (%) in this report: one is *the percentage (%) based on the number of households* and the other is *the percentage (%) on the value of the considered indicator.*

- Among the considered indicators, when necessary, calculation can be carried out to determine the influence relationship or interaction relationship with one another. The relationships can be between HH group with indicators (e.g. the relationship between

HH group and income), or between the indicators (e.g., the relationship between or income and yield or income and expense, etc.). These relationships can be determined by calculating the average of the considered indicators on the level of subset analysis.

- To compare and distinguish the components of the same indicator or the relationship between the indicators considered together, charts and graphs are set up for easy identification (mainly for village reports). Excel is used to support this presentation.

In summary, there are two sources of primary data for report preparation. One is from group discussions and the other household interviews; also, two consecutive steps are performed, which are collection methods and analytical methods. Although the source of data supply and the methods of implementation are separate, in reality, information from the two sources as well as two performed steps complement and clarified each other. Therefore, during report preparation, the analysis, synthesis and assessment of survey results are coordinated by both data sources and performing methodologies.

2.3.3. Method of preparation of final report

Each village has a detailed report on the obtained results of the village. The village reports follow a common format for the content, methodology, and presentation. Interpretation and analysis of the detailed data for the causes can be different for each village. The joint report is compiled from village reports. Based on the results from villages reports, the overall report will probably contain comparisons between 7 target villages or between 3 regions(Lac Duong town, Da Chais commune, and Da Nhim commune), or between the economic HH groups depending on the requirements during analyzing. Thus, this final report does not repeat the detailed data of each village report (Figure 2.2).
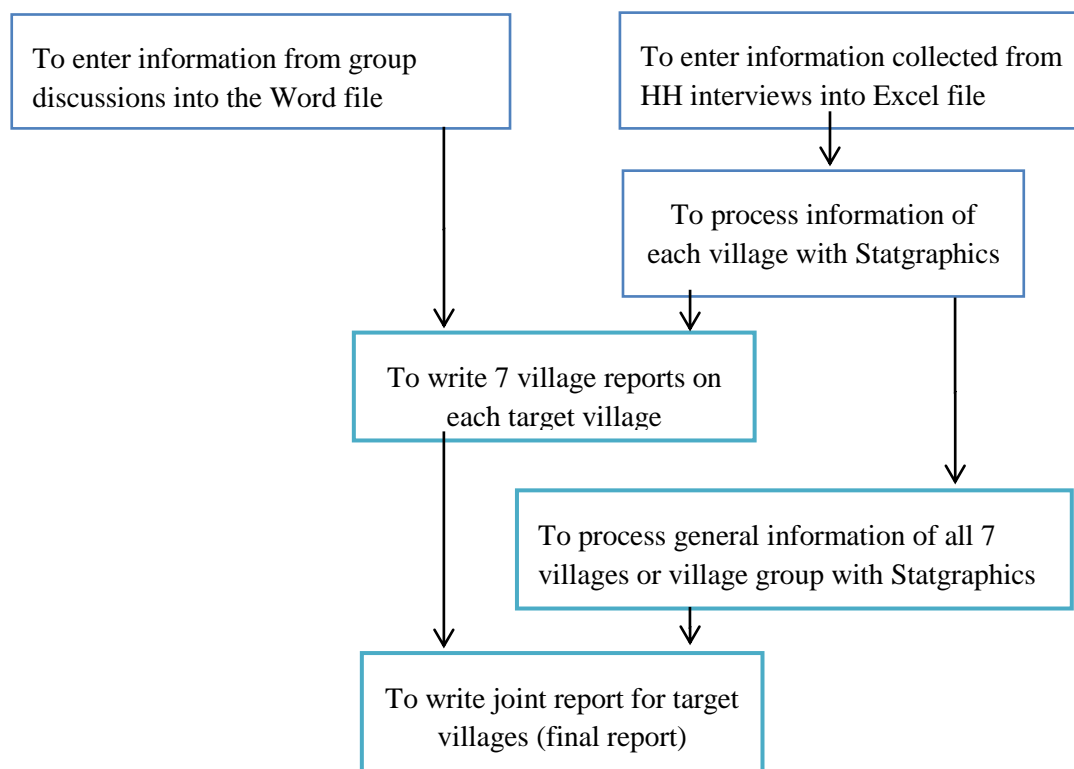
Figure 2.2. Diagram of establishment of report on results of village survey

3.   RESULTS

3.1.   History of Village development

Lac Duong District was officially established in 1979[2]. To date (2014), the district has six administrative units consisting of five communes and one town (Lac Duong Statistical Office, 2014). Out of the seven surveyed target villages under this project, 3 villages are under Da Nhim commune, 2 villages under Da Chais commune, and 2 villages under Lac Duong town. Therefore, 3 out of 6 administrative units have their villages in the survey area.

The milestones of the development of the socio-economic conditions of the entire survey area are as follows:

- From the late nineteen seventies to early nineteen eighties the Chil people had sedentary lifestyle but still lived on shifting cultivation with the previously settled Lach people. Both people were later settled to the current places and lived there ever since. However, their production (agricultural products) was mainly subsistence agriculture. Therefore, their main crops were local food crops.

- During the 80s, coffee cultivation was initiated in many places in Lac Duong region, starting from Lat commune (currently Lac Duong Town), spreading to Da Nhim commune in early 90s and then to Da Chais commune. It can be said that coffee cultivation in intensive cultivation practice was associated with sedentary lifestyle of the people at that time. However, not all coffee cultivation area applied intensive cultivation practice.

- Coffee cultivation area continued to increase especially after the renovation of the inter-provincial highway 723 (2003), with focus on the two communes located along the road, i.e. Da Nhim and Da Chais. The introduction of new crops (coffee, fruit trees) in the decade 1980-1990 also contributed to the change of wet rice cultivation habits, from subsistence economy towards cash crop production. In addition, from this period, forest protection contracting to household groups of the communes in the region started to be implemented by forest owners (BNBNP and DNWSPFMB).

- From the beginning of the 2000s, cultivation of vegetables and flowers in hi-tech style infiltrated into Lac Duong District, starting from Lac Duong town, then spreading to Lat (existing) area, and finally expanding to Da Nhim commune in the 2010 decade. However, while coffee cultivation was spread by the local households, hi-tech vegetable cultivation was often started by private companies having technical advantages and capitals. Households either employed or self-employed in this hi-tech sector rapidly changed their incomes.

- However, the above changes in each area took place differently in accordance with its geographical characteristics. As Dalat City is the commercial center of the region, all product supplying activities depended on this market. The closer to Dalat City the area is, the faster the development becomes. Accordingly, three administrative units

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[2] Lac Duong District was established on 14/03/1979 under Decision No. 116 of the Council of Ministers

covered in this report also correspond to three regions of different historical development. The area that developed fastest is Lac Duong town, the next Da Nhim commune and the last Da Chais commune. Accordingly, the final report will focus its analyses into 3 regions thereof.

In summary, there are four important milestones directly related to the socio-economic situation of the villages in the area. These points of time are associated with changes in farming practices (from shifting cultivation of the Chil to specialized farming), from short term crops such as rice, corn, etc. to perennial crops such as coffee and fruits, consumer product categories (local self-consumption to commodity products to the market). However, the points of time when the changes took place are associated with geographical location of each area. Thus, the development of areas as well as each village is accompanied by the changes of cultivation practice forms, consumptions of crops in accordance with each specific period of each geographical area.

3.2.   Living conditions and activities

According to the statistics of the district (Table 3.1a), in the 7 target villages there are 1,253 households with 5,539 members; 4.4 members / household on average , among which 196 households are Kinh and 1,057 ethnic minority (accounting for 84.4% of all households) (DPC of Lac Duong, 2015).

Table 3.1. Population and ethnicity according to statistic figures and to surveyed data

Table 3.1a. Population and ethnicity according to statistic figures of Lac Duong DPC

	Lac Duong		Da Nhim			Da Chais	
	Bnor B	**Bon Dung**	**Da Ra Hoa**	**Da Blah**	**Da Tro**	**Klong Klanh**	**Dung Ksi**
No. of HHs	230	270	152	134	162	212	93
No. of ethnic minority (HHs)	178	246	135	112	136	165	85
No. of HH members	979	1107	767	577	878	882	349
No. of ethnic minority (members)	809	978	706	503	767	722	315
No. of members/HH	4.3	4.1	5.0	4.3	5.4	4.2	3.8

Notes: *The number of HHs in the Table is the actual survey number accounting for 90% of that in village head's list. Number of ethnic HHs refers to indigenous ethnic peoples, excluding others*

According to survey interviews data (June, 2016), in the 7 target villages there are 1,173 households (1,049 households participated in direct survey, 124 households fail to participate

in the survey because of many different reasons). The total number of members of 1,049 households is 4,766 persons, 4.5 members / household on average

Table 3.1b. Population and ethnicity according to survey data of the project

	Lac Duong		Da Nhim			Da Chais	
	Bnor B	**Bon Dung**	**Da Ra Hoa**	**Da Blah**	**Da Tro**	**Klong Klanh**	**Dung Ksi**
No. of HHs	190	153	185	111	152	180	78
No. of ethnic minority (HHs)	163	137	165	99	129	146	70
No. of members	757	648	911	536	800	790	324
No. of ethnic minority (members)	643	584	833	484	715	658	287
No. of members/HH	4.0	4.2	4.9	4.8	5.3	4.4	4.1

When the result is compared with list of household provided by village head, about 89% of total households is surveyed. When it is compared with the list by DPC, 84% is surveyed. Only 1 village (Da Ra Hoa) has more households surveyed than the one listed. The other 6 villages have less.

Based on the report on socio-economic situations of the communes in the region and report on the natural and social conditions of the DNWPFMB (DNWPFMB, 2015), a number of points regarding the living conditions of the people in 3 communes (Lac Duong, Da Nhim and Da Chais) are:

- Housing: Thanks to supports from governmental programs such as 134, 135, 167 from the 1990s, housing conditions in the village positively changes. The majority of households in the village own brick houses with roofs of metal sheets. Overall, the best housings are in Lac Duong Town, next in Da Nhim commune and, finally Da Chais commune

- Electricity: The existing national power grid covers all the villages in 3 regions, which served production and domestic activities. A communication network also covers all the villages (wireless telephone network, TV, etc.).

- Transportation: The inter-provincial highway 723 stretches all the length of Lac Duong District connecting Dalat City with Khanh Hoa Province. Being the main route connecting the communes of the district, it is very convenient for travel and exchange of local goods. In addition, inter-village roads are filled with crushed aggregate base course, which facilitated traveling and transportation of agricultural products and commodities. However, the forest road system serving forest protection patrol is still dirt roads, which make travel difficult in rainy season.

- Education: Da Nhim and Da Chais commune have primary and secondary schools with rather food facilities and Lac Duong Town has high school, which meet the learning needs of students of the right age range. All the children are going to school.

- Health: Clinics with sufficient medicine for common disease are located in the center of the commune. Health insurance is granted to all the HHs of ethnic minority groups in the village. Therefore, most of the inhabitants in the village have access to these health care facilities. Local authorities give warning about clean agricultural production (not to abuse plant protection chemicals on vegetables, and to limit the use of herbicides).

- Water access: The local authority invest in a gravity clean water system for the local people. The supply water network, however, cannot cover all of the population groups. A small number of scattered HHs still has to take water from natural springs and wells. Public water meets the demand for clean running water as daily use.

- Except Lac Duong Town, Da Nhim and Da Chais communes do not have neither main markets nor fairs. There are only small shops alongside inter-provincial highway 723 supplying food, drinks, and small repairs. Within these communes, there are no bank branches, ATMs, agricultural extension stations. However, regarding forestry, there are forest protection stations working under the DNWSFMB and BNBNP. The purchase or exchange of goods, materials, instruments of the local people with external markets are normally through the "shops" in each village or commune.

In short, the infrastructure has been built and developed in the recent past years. Consequently, the basic needs for "electricity, roads, schools and health clinic" are adequately met, which gradually contributed to the improvement of the living standards of the people in villages as well as throughout Lac Duong District. However, a number of important services for livelihoods as banks, agricultural extension centers have not appeared or otherwise meet the local people's requirements.

3.3.   Structures, operations and importance organizations to the village

3.3.1.   General information about organizations

With discussion tool (Venn diagram), groups of people discussed the roles of relevant organizations and listed the major organizations and individuals as follows:

- Governmental organizations consisting of the CPC, the commune People's council, the Village Management Board (village head, village police), the Farmers' Union, the Women's Union, Youth Union, etc.

- State organizations including banks, the Sub-departments of Forest Protection, BNBNP, DNWPFMB, Lac Duong District Agricultural Office, District Agriculture Extension Station, etc.

- State or private companies (producing, trading in goods or materials)

- Organizations, non-state institutions: and related individuals: restaurants and shops, village elders, priests (from local churches).

- Projects of International organizations on site: JICA projects, UNREDD projects

In order to have a consensus of the results of the analysis into the relationships between organizations and village development, the report focuses on two main concepts: the *importance* and *influence* of the organization. The results of discussions on the roles and functions as well as the influence of the organizations on the livelihoods of the communities of the villages included:

The *importance* is considered from the perspective of capacity, functions of the organizations or individuals to influence the socio-economic condition of the villages and households; for example, banks have the function to lend money, agriculture and forest extension stations transferred technology or supported materials for agricultural production. With regard to *influence*, it is the range of operations, unification and what the organizations or individuals can do to change work or activities of the people and community; e.g. the sub-department of forest protection forces people not to cut trees in the forest, shops help people buy the goods, products in a rapid and convenient way.

The similarities among villages are that the people all consider organizations such as People's Committees, Village Management Boards, banks, JICA project important to the development of villages. Organizations such as restaurants, shops, villagers' associations all influence the material and spiritual lives of the people in each village. Organizations or individuals who carry out specific activities to the people are always considered to have high level of influence, i.e. shops (purchasing or borrowing occurred on a daily basis), the bank (lending money), JICA project (EFLO activities etc.), Farmers' Union and the Women's Union (promoting activities to each household). However, distinguishing clearly the importance and influence of any organization on the development of the villages are also difficult and varied among villages.

Highlights of some of the organizations in Venn diagrams of 2 regions are summarized as below:

Table 3.2 Highlights of some organizations in the Venn diagram in areas

Areas	Importance of Organizations	Influence of Organizations
Lac Duong	1) PC of the town: that carried out administrative procedures, 2) Banks that offers loans to the people, 3) Sub-departments of forest protection of BNBNP and JICA project, 4) Village Management Board, churches and associations (Women's Union and Farmers' union), and 5) Churches and Village elders.	1) Shops and middlemen: that lend money, sell fertilizer on credit, respond the needs of people anywhere and anytime, 2) Associations such as women's union or farmers' union, 3) Bank for social policies, commercial banks, and 4) JICA project

Areas	Importance of Organizations	Influence of Organizations
Da Nhim and Da Chais	1) CPC and the Village Management Board are important, 2) Organizations such as the Farmers' union, the Women's Union: many people in the village get involved.	1) The shops 2) Farmers' union, Women's Union, the Bank (commercial banks and Banks for social policies). 3) The Village Management Board.

3.3.2.   The roles, functions and influence of local organizations

The following section analyzes the role and influence of the two organization groups which have different functions but the same influence on the households of each village: (i) the local organizations, and (ii) components of JICA project.

Three state organizations directly relate to the operation of the project and contribute to the livelihoods of the people to each target village. Assessment results according to group discussions (through Venn diagrams) the three state organizations are ranked in order of importance and influence: (i) DNWSFMB, (ii) BNBNP, (iii) the CPC.

The results of assessments of the three organizations only by households (through interviews) based on a 5-point scale (1 = lowest, 5 = highest, besides some households do not know or have no answer) are presented in Table 3.3.

Table 3.3. Assessment of the people's satisfaction (%) with the support of organizations

Organizations/Area	Point 1	Point 2	Point 3	Point 4	Point 5	"Did not know" "No answers"
DNWSFMB	0.12	0.83	1.89	7.80	5.44	78.7
Lac Duong	0.00	0.29	0.88	0.29	0.29	98.2
Da Nhim	1.81	3.17	14.0	10.2	9.73	61.1
Da Chais	0.00	1.56	1.56	0.00	0.00	96.9
BNBNP	1.56	4.59	7.82	14.8	15.2	56.1
Lac Duong	0.88	5.29	4.41	5.88	4.12	79.4
Da Nhim	1.59	2.96	10.3	12.1	8.66	64.5
Da Chais	2.46	6.56	8.20	32.0	42.6	8.20
CPC	13.0	12.6	21.4	20.1	19.0	14.0
Lac Duong	21.8	19.8	26.8	14.4	8.26	8.85
Da Nhim	12.3	9.84	21.3	15.4	17.0	24.2
Da Chais	2.71	7.75	14.3	35.7	36.4	3.10

Observations:

The percentage of households who do not know / have no answer is the highest to the DNWSFMB (78.7%), then to BNBNP and to the CPC. The cause of the difference is due to

the location and functions of each organization and how people access to these organizations, specifically as follows:

With regard to DNWSFMB , the number of households who "do not know / have no answer" in the villages of Da Chais commune and Lac Duong town reaches up to 100% of the total households because they do not have any connection with this organization in terms of executing PFES contracts. While the households in Da Nhim commune sign forest protection contracts with both DNWSFMB and BNBNP, therefore, their assessments are different. The scores ranged from 3 to 5 in which 3 point answers are the most.

Regarding BNBNP, over half of the households do not know or have no answer. The rate of the households with no answer is higher in two villages of Lac Duong Town; the rate of households with answer is the highest in 2 villages of Da Chais commune. Both have a common cause, which is only about 1/4 to 1/3 of the households in the region of Lac Duong Town entered into contracts (with BNBNP), while in Da Chais all of the contract forest area are from BNBNP. Assessment points range between 3 and 5 but concentrations of values varied, between 3 and 4 points (in Lac Duong Town), 4 (Da Nhim commune) and 5 (Da Chais commune).

With regard to the PC of the communes, although the percentage of households who have no answer account for only 14%, but even those who scored, their points very much fluctuate ranging from 1 to 5 points in which the discrepancy percentage between the most scored point (3) and the least (1-2) is 8% of the households.

In short, the CPC holds power of law enforcement by the local people, which is not only administrative procedures but also their material and living issues. Therefore, the percentage of households who know of it is higher. However, the assessment results are very fluctuating from the lowest to highest levels. BNBNP is ranked the second as all the 3 communes are more or less involved in its forest protection contracting. In addition, 5 out of 7 villages get involved in livelihood activities to improve household incomes. Regarding the DNWSFMB, as the direct relationship through forest protection contracts is less, the assessment results are also lower. Thus, it is not the management of forest protection contracting but the number of households directly involved in it that makes the difference.

3.4. Important groups of householders

3.4.1. Basis for classification of household groups by income

According to the figures of Lac Duong DPC, the average per capita income actually achieves 29.9 million / year (2015) (DPC, 2015). This figure is much higher than that of the data of direct survey from household interviews.

Below is the average income per household of three communal regions of Lac Duong District (in 2015, unit: million/ household/year)

Table 3.4. Allocation of the number of households (%) by the value of average income

Regions	Below 24 million/hh	24-50 million/hh	50-100 million/hh	100-200 million/hh	200-360 million/hh	Over360 million/hh
Lac Duong town	13.7	24.5	32.9	19.2	5.8	3.8
Da Nhim Commune	36.4	37.3	19.2	6.3	0.9	/
Da Chais Commune	38.7	38.8	15.1	6.2	1.1	/
Average	29.6	33.5	22.7	10.4	2.6	1.2
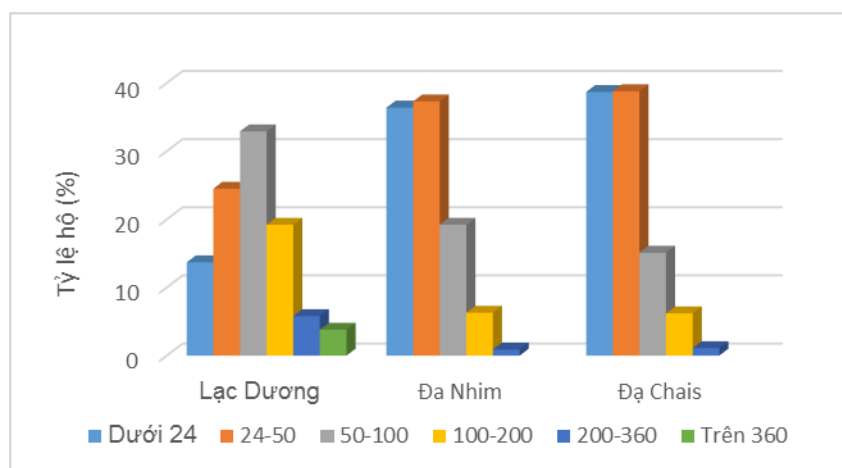
Figure 3.1. Allocation of households (%) by level of income in regions

According to the results of Table 3.4 and Figure 3.1, it is visible that 3 distinct different levels in corresponding to 3 regions: relatively high income households are in Lac Duong Town, average income in Da Nhim commune and low income in Da Chais commune. The difference in incomes between Da Nhim and Da Chais is not significant, but as compared to Lac Duong Town, the gap is obvious at all income levels. Thus, average income / households (based on the average value / household) are declining from Lac Duong, to Da Nhim and to Da Chais.

Households that generated incomes below 24 million VND/year equivalent to about 2 million / month accounted for 29,6% of the number of households of the villages. The percentage of households is highest in Da Chais commune, lower in Da Nhim commune and lowest in Lac Duong town. Based on income / person / month of the national poverty standards (2011-2015)[3], the majority of households below this level will be classified as poor. In addition, the number of households with incomes above 200 million in Da Nhim and Da Chais communes accounted for approximately 1% of household number. Only in Lac Duong Town are there some households that generated over 360 million / year income accounting for 3.8% of the households.

If only income is taken into account, according to the results in Table 3.4 the households can be classified into 3 types of groups: group I is poor and near-poor households with incomes

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[3] According to Decision 09/2011 / TTg on promulgating the poor and near poor standards applicable to 2011-2015

below 24 million / year, accounting for 29.6% of the total households; groups II the medium with income from 24 to 100 million / year, 56.1% and; group III the better-off with income above 100 million / year, 14.3%. However, this is for reference only. The specific household grouping results are presented in section 3.4.2 below.

3.4.2.   *Classification of household groups by economic status*

The classification of household economy, if based on their incomes, may be inaccurate and extreme when only one year's income is taken into account. Therefore, the survey team decides that combination of multiple criteria available from using PRA tools (household interview and group discussion for wealth ranking) will be the basis for household classification.

Figure 3.2. Group discussion for household classification of the Chil in Da Ra Hoa

In group discussions, people put forward some basic characteristics of three types of households (poor, near poor and medium + better off). The causes contributing to different household economic statuses of households in the village can be (the results of the household group discussion): (i) household land area under cultivation; (ii) existing human resources (labor, health, experience, education) of the households; (iii) the ability of the households to accumulate capital with income and to repay loans.

On the basis of the above-mentioned criteria, the research team compares the results and collated them with the data collected from household interview survey (3 household groups) to determine the economic groups of households. The results are noted as in Table 3.5.

Table 3.5. Allocation of households (%) by economic status in 7 target villages

HH levels	Lac Duong		Da Nhim			Da Chais	
	Bnor B	**Bon Dung**	**Da Ra Hoa**	**Da Blah**	**Da Tro**	**Klong Klanh**	**Dung Ksi**
Poor	9.0	6.5	13.5	22.5	11.1	25.6	23.1
Near poor	31.0	22.2	27.6	30.6	27.0	28.9	28.2
Medium	38.4	54.3	50.3	36.9	43.5	38.3	43.6
Better off	21.6	17.0	8.7	10.0	18.4	7.2	5.1

Based on the results of household grouping of the 7 villages, the average percentages of household groups in general for the whole area (7 villages) are: poor households accounting for 15.1 %; the near poor 27.9 %; the medium 43.8%; and the better off 13.2 %. Thus, the percentage of the poor and near poor households in the region increases to 43.0%. According to the same results, the poor and near-poor concentrate more largely on two villages in Da Chais commune, on the contrary, the better-off in two villages of Lac Duong Town.

Checking with some important indicators as per the results of structured interviews with each household, it is clear that these household groups have some characteristics as follows:

Table 3.6. Indicators of economic groups classified by project.

HH groups	HH number (%)	HH members (person)	Laborers (person)	Land area (ha)	Income from crops (Million/hh)	Total income (million/hh)
Poor	15.1	5.0	2.4	0.47	4.39	19.84
Near poor	27.9	4.5	2.3	0.58	11.78	35.54
Medium	43.8	4.5	2.5	0.74	25.11	53.51
Better off	13.2	4.4	2.6	1.33	111.2	175.7
Total	100.0	4.5	2.4	0.73	29.76	59.61

According to the data in Table 3.6, the wealthier the household group is, the higher the rate of income from crops in relation to the total household income became, for example, in the better off household group income from crops accounted for 64% of total household income. However, as compared to the two adjacent household groups, the discrepancy between the medium household and near poor households group is significantly less than that between the medium and the better off household group. Consequently, the medium households can fall back to the near poor level easier than becoming better off households.

The poor households have the following characteristics: They account for 15.1% of the household number of the area. Their average number of household members /household is highest (5 persons /household). Total income on average is about 20 million/ year, in which income from crops accounts for 25% only; the rest 75% come from hired labor.

The near-poor households have the following characteristics: They account for 27.9% of the households number in the area; the number of their household members and labors / household is equivalent to the general average; their land area is 2/3 of the general average,

but their income from crops as well as total income is only between 40 to 50% of the average number of the area.

The medium household group is the most numerous (43.8% of the household number) and both their income from crops and total income value is equivalent to the average values of the household groups of the entire area (land area is 0.74 ha while the average is 0.73 ha; total income is 53.51 million/year while the average is 59.61 million/year).

The better off household group have the smallest number of household (accounting for 13.2% of the household number) concentrating mainly in two villages of Lac Duong Town. It actually surpasses others in terms of cultivating land area (surpassing by 82% as compared to the general average land area). And household income is 2.5 times as much as that of the medium household group.

The observations are that the ranking of wealth according to the household economic level is, of course, based on the factor of household income, but the threshold put forward by each village has been purely comparatively relative of each village. For example, a household in Da Chais commune that generated an income of over 100 million / year can belong to the better off household group, while in the Lac Duong Town it is just a medium household. Thus, distinguishing thresholds for household income is just peculiar for individual village, and the wealth ratio of household groups is correct for each village, not an average figure of all the 7 villages.

According to the specific characteristics of each area, this report analyzes and compares household groups by 3 units with geographical administrative peculiarities: Lac Duong, Da Nhim, and Da Chais.

Table 3.7. Indicators of economic groups classified by project.

HH groups	HH No (%)	No. of HH members (Persons)	Land area (ha)	Income from crops (Million/HH)	Non-agricultural income (Million/HH)	Total income (million/HH)
Lac Duong town						
Poor	7.9	4.03	0.25	4.71	22.42	22.03
Near poor	27.1	3.84	0.32	12.94	42.35	51.30
Medium	45.5	4.27	0.52	34.21	41.74	74.40
Better off	19.5	4.07	1.15	163.4	89.23	242.5
Da Nhim commune						
Poor	14.9	5.25	0.51	5.09	7.39	15.18
Near poor	28.2	5.17	0.82	13.50	12.84	28.29
Medium	44.6	4.89	0.88	21.88	17.61	40.66
Better off	12.3	5.84	1.46	63.71	55.19	107.9
Da Chais commune						
Poor	24.8	5.12	0.54	3.53	8.02	23.78

HH groups	HH No (%)	No. of HH members (Persons)	Land area (ha)	Income from crops (Million/HH)	Non-agricultural income (Million/HH)	Total income (million/HH)
Near poor	28.7	4.08	0.53	7.39	8.64	28.09
Medium	39.9	4.03	0.81	17.39	23.00	46.81
Better off	6.6	4.06	1.61	44.86	87.19	131.8

Some outstanding features of the households in each region:

Lac Duong town: the poor household group account for a very low percentage (7.9% of total households). The better off household group surpasses in total income and especially income from crops. Group discussions show that the main difference between the household groups is the shortage of productive land and labor. In which, the shortage of labor is believed by the people to have the greatest impact on household income.

Da Nhim commune: The percentage of the poor households is approximately equal to that of better off households. Differences in indicators between the two, medium and near poor household groups, is not clear. However, the better household group is clearly different from all other groups in land area / household and income / household. The incomes of households from crops are higher than those from non-agricultural activities, but the difference between the two income sources is not large, both contributed equally to the total household income.

Da Chais commune: The better off households account for the lowest percentage (6.6% of the household number). The poor and near poor household groups are similar in many peculiar indicators (number of household members, land area, non-agricultural income). The results of household ranking showed that there are no Kinh people in the poor and near poor household groups. Meanwhile, as many as 75% of the total households are ethnic groups and nearly 53% of Chil household belong to the poor and near-poor groups.

In all three areas, the better off household group always surpass others in income as compared to the average group, specifically from 2.5 times as much (in Da Nhim commune) to 3 times (in Lac Duong town and Da Chais commune). In other words, the better off households in the whole surveyed areas confirm their outstanding incomes in comparison to the other groups in the same community.

3.4.3. Extendable groups

In addition to the groups of households classified in terms of poverty and wealth, the survey team also groups the households by other expendabilities. The purpose is to review and evaluate the ability of the groups to access to natural resources for household livelihoods, and possibly to interpret a number of relevant issues of livelihood analysis by household groups.

+ *The household groups participating in JICA project*

Apart from the household groups classified in terms of economic status, since the execution of the components of JICA project in 2011 in the buffer zone of the Biosphere Reserve, approximately one third of the households in the villages have participated in at least one of the components of JICA. Details of the household group that participated in any of JICA

project activities (referred to as JICA participating) and household group that did not participate in activities (non-JICA participating) of the whole area as well as separate area are recorded in Table 3.8. (Only 2/3 of surveyed communes, which are Lac Duong town and Da Nhim commune, participated in JICA activities.

Table 3.8. Participation in JICA by total households and by economic status

Participation in JICA projects	Percent of total HHs (%)	In which:			
		Poor (%)	Near poor (%)	Medium HH (%)	Better off HH (%)
Entire area					
Non-JICA	54.6	17.2	27.3	41.9	13.6
JICA participating	45.4	10.9	29.3	47.3	12.5
Lac Duong					
Non-JICA	60.4	8.7	29.9	40.6	20.8
JICA participating	39.6	6.6	22.8	52.9	17.7
Da Nhim					
Non-JICA	50.2	16.4	23.1	45.3	15.1
JICA participating	49.8	13.5	33.2	43.9	9.4

+ The household groups participating in forest protection contract

In the surveyed area, there are two forest owners, i.e. DNWSFMB and BNBNP. The majority of households in Da Chais commune sign PFES contracts with only BNBNP, while the village households in the Da Nhim commune and Lac Duong Town can contract with either of forest owners. The results of the types of households involved in forest protection at both areas are shown in Table 3.9

Table 3.9. Participation in PFES contract by total households and by economic status

Participation in forest protection	HH percentage (%)	In which:			
		Poor (%)	Near poor (%)	Medium (%)	Better off (%)
Entire area					
Non-contractor	39.4	10.2	24.0	41.9	23.9
Contractor	60.6	18.3	30.6	44.9	6.3
Lac Duong Town					
Non-contractor	79.6	7.7	27.1	43.6	21.6
Contractor	20.4	8.6	27.1	52.9	11.4
Da Nhim area					
Non-contractor	22.6	18.8	21.8	33.7	25.7
Contractor	77.4	13.9	30.1	47.7	8.4
Da Chais area					

Non-contractor	15.1	5.1	7.7	51.3	35.9
Contractor	84.9	28.3	42.4	37.9	1.4

According to Table 3.9, the group participating in forest protection contract was dominant with 60.6 % of the household number and the remaining non-contractor group accounts for 39.4%. Between these two groups, the ratios of medium households are similar (41.9% versus 44.9%), but the difference is in the remaining groups: The percentage of the poor and near poor household of the participating group involved in contractual forest protection is higher than the better off group. Thus, the majority of the poor and near-poor households (according to the classification of households above) belong to the PFES-contractor group.

The difference in forest protection contracting among the areas is that in Lac Duong town is that about 20% of households get involved in contractual forest protection, while in Da Chais and Da Nhim communes, between 75 and 85%. The average contracted area / household in Da Chais commune is larger than that in Da Nhim commune and in Lac Duong Town. The underlying cause of the difference is that the natural forest area and distance in Da Chais is more favorable than that in Lac Duong Town and Da Nhim area.

+ *Groups of households classified by ethnicity*

One of the characteristics of the villages in Lac Duong town is the clear-cut differences in livelihoods and lifestyles between the Kinh and the local ethnic people (the Chil and the Lach). The results of the survey interviews showed that there are 140 Kinh and other ethnic households, 622 Chil households and the rest of 287 Lach households. In the surveyed area, the distribution of indigenous people is associated with the distribution of administrative cluster. Accordingly, the households are classified into three groups in this report for consideration of the rich and poor relationships between the ethnic groups in areas.

According to Table 3.10, the Kinh group accounts for only 13.3% of the household number of the villages, but up to 43% of this household group is better-off. On the contrary, only 5.3% of the households out of the total 622 Chil households and 16% of the households out of the total 287 Lach households are better-off . The percentage of better off Lach people is higher than the Chill because of geography related factor. (most of the Lach people are distributed near Lac Duong town).

Table 3.10. Percentage of ethnicity by total household and by economic status

Areas/HH groups	HH percentage (%)	In which:			
		Poor (%)	Near poor (%)	Medium (%)	Better off (%)
Lac Duong		7.87	27.1	45.5	19.5
Kinh+Other	12.5	2.33	13.9	39.5	44.2
Chil	3.79	15.4	38.5	30.8	15.4
Lach	83.7	8.36	28.6	47.0	16.0
Da Nhim		14.9	28.1	44.6	12.3
Kinh+other	12.3	5.45	7.27	40.0	47.3
Chil	87.7	16.3	31.0	45.3	7.38
Da Chais		24.8	28.7	39.9	6.59
Kinh+other	16.3	4.76	4.76	54.8	35.7
Chil	83.7	28.7	33.3	37.0	0.93

In short, up to 87% of the Kinh households are in the medium or better-off area, while nearly 50% of the Chil and Lach households are in poor and near poor. These results will interpret some issues in analyzing the livelihoods of household groups (Section 3.5).

The difference between the areas is that almost only the Lach people lived in Lac Duong town, while all Chil people lived in the area Da Chais and Da Nhim areas. Kinh households in these areas are all immigrants and settle there mainly after 1975.

3.5.   Livelihoods of household groups

3.5.1. General information

+ *Income structure of sources and levels of income*

Through household interview survey, based on the number of households and proportion of contribution to household incomes (above 5%), incomes can be divided into four main sources: (i) from agricultural and forestry production; (Ii) from contractual forest protection, (iii) from salaries and hired labor, and (iv) from trading, service providing and other non-agricultural sources. In summary, regarding livelihoods based on land resources, there were 2 groups of income sources: (1) from agricultural and forestry production, (2) from non-agricultural activities. Percentage of households with income source from agricultural and forestry production in the area accounted for 80.5% of total households, the rest was non-agricultural.

In the structure of income source from agricultural and forestry production, incomes are from crops: coffee, vegetables and flowers, fruit trees, livestock, and from contractual forest protection (including collection of NTFPs). In the structure of income source from non-agriculture, incomes came from salaries + hired labor, from trading, service, and handicraft sectors. This is the existing status of average income of 2015. The difference between geographical areas or among groups of households is due to the number of types of income source and percentage of each income source.

Regarding income levels, this report divides incomes into 6 levels with allocation of household numbers by level as in table 3.11

Table 3.11. Allocation of number of HH by values of average incomes (million/HH / year)

Regions/ Income value	Lac Duong		Da Nhim		Da Chais	
	HH	**%**	**HH**	**%**	**HH**	**%**
Below 24 million	47	13.7	163	36.4	100	38.8
From 24 – 50 million	84	24.5	167	37.3	100	38.8
From 50 – 100 million	113	32.9	86	19.2	39	15.1
From 100 – 200 million	66	19.2	28	6.25	16	6.20
From 200 – 360 million	20	5.83	4	0.89	3	1.16
Over 360 million	13	3.79	//	//	//	//

According to Table 3.11, approximately 30% of households with incomes equivalent to 2 million / household / month (or 24 million / household / year) can be classified as poor households. Only 5% of households with incomes above 16 million / household / month (over 200 million / household / year) can be referred to as better off households. However, only in Lac Duong live households with incomes more than 30 million/ household/ month (over 360 million/ household/ year).

+ *The overview of activities to generate livelihoods*

The situation where the number of households in target villages participated in the activities generating livelihoods (2015) is listed in Table 3.12

Table 3.12. Number of HHs (%) participating in activities for their main livelihoods

Regions/ Activities	Coffee cultivation	Other crops	Husbandry	Hired labor	Trading + service	NTFPs collection	PFES contract
Lac Duong	77.0	0.4	25.4	78.7	11.1	34.7	20.4
Da Nhim	91.7	14.3	15.2	54.0	9.6	34.6	77.2
Da Chais	97.7	/	15.9	54.3	7.4	68.6	84.9
Average	88.4	4.9	19.7	62.2	9.5	43.0	60.5

Note: Percentage of HH number calculated on the total actually surveyed HHs of each area
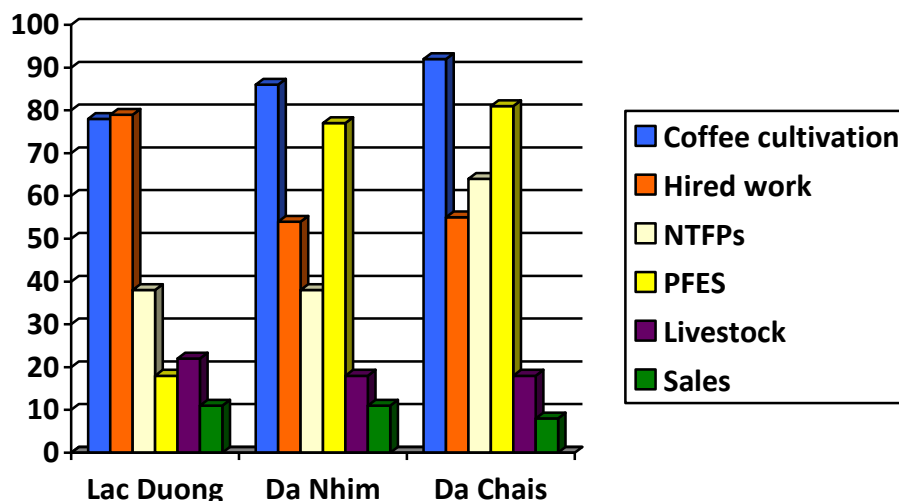
Figure 3.3. Allocation of households (%) by livelihoods in regions

Through interview results in Table 3.12 and Figure 3.2, the most popular and highest income generating activities for households are from coffee cultivation (accounting for 88.4% of total households in the villages), next is hired labor (62.2%), and forest protection contracts (60.5% s). They are also three types of activities with decisive contributions to the household incomes. The activities that involve many households but do not generate incomes or significant incomes are husbandry (with 19.7% of the total household number, of which only 23.7% generated incomes in 2015) and NTFPs collection (only 36.4% of the involved households generated incomes, others collected NTFPs for domestic consumption). Apart from these activities, very few households engage in trading and vegetables and crops cultivation, which can generate high incomes (Trading 9.5% of the household number, and vegetables and crops cultivation 4.9%).

With regard to products from livelihood activities, there are 3 main kinds: (i) Only coffee is the complete commodity product; (ii) Animal husbandry provide products both for market products (pigs, cattle, buffaloes) and for domestic consumption (poultry); (iii) The collection of NTFPs is mostly for domestic consumption (36.4% of the households sold NTFPs to the market). The activities that generate product in cash include forest protection contracts execution and hired labor. Income from PFES contracts is relatively stable because of unchanged price and forest area year after year, which is about 10 million/ household / year. Income from hired labor varied by gender, crop seasons, and types of work, the existing widespread payment is 120,000 VND/ day/ person for female and 150,000 VND/day/ person for male.

The similarities and differences in livelihood activities among surveyed villages are:

- All villages have coffee based livelihoods. The number of HHs that engage in this livelihood on average accounted for 88.4% of the total number of households. The village that have the lowest percentage is Bon Dung 1 (below 50%), and 2 villages that have the highest percentage are in Da Chais commune (almost 100% of the household number).

- Two villages of Lac Duong town also cultivate subsidiary crops apart from coffee plants; in Bon Dung 1 crop farming even accounts for over 50% of the household number and income value (larger than coffee cultivation).

- In all the villages, there are incomes from hired labor, which is also one of three types of livelihoods that generate decisive contribution to household incomes. Non-agricultural incomes generate from handicraft account for a minor proportion, which is less than 5% of the overall income of the households.

In short, activities that generate livelihoods in the areas are mainly agricultural and forestry production consisting of: (i) coffee cultivation, (ii) cultivating crops (vegetables and fruit trees); (iii) animal husbandry. There are also incomes from hired labor and forest protection contract. Pure non-agricultural activities include trading and services, which involve very few households (Kinh households).

3.5.2. *Analysis of livelihoods of HH groups*

In according to wealth ranking, the livelihoods of HH groups in the survey area have some common features as follows:

Table 3.13. Main livelihood activities of HH groups in the entire area.

HH group	Crop production		Non-agricultural activities		NTFPs collection + PFES contracts	
	HH No. (HH)	Incomes (Million)	HH No. (HH)	Incomes (Million)	HH No. (HH)	Incomes (Million)
Poor	157	4.39	88	10.69	120	12.49
Near poor	293	11.78	183	24.91	202	11.82
Medium	452	25.11	328	28.72	294	11.49
Better off	134	111.1	111	77.21	42	10.05
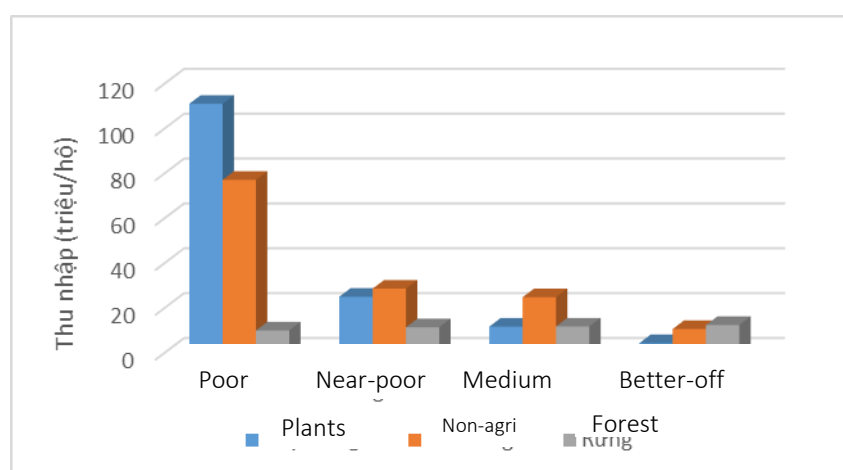
Figure 3.4. Income (Million Dong/ households) from cultivation/ collection of products of different groups

Firstly, although villages are different from one another in geography and ethnicity, they had the same main sources of livelihood, including: crop production (coffee, other crops), non-

agricultural activities such as hired labor (inside and outside the village) and other activities (trading, services, leasing), forestry (collection of NTFPs and PFES contract). In which, income from crops is particularly high in the better off groups and very low in poor household groups.

Secondly, the difference between the groups in income sources results in income discrepancy of households. In poor and near-poor household groups, the source of income is primarily hired labor and contractual forest protection (very little or no incomes from livestock and subsidiary crops). In the medium household group, their income come mainly from coffee cultivation, hired labor, and additional husbandry. In the better off households, the main income is from subsidiary crops, coffee cultivation, and hired labor. The special feature about all the groups is that they all engage in hired labor and that their rates of engagement are without distinction between the better off or the poor.

Thirdly, the differences in livelihood between the groups are in their ways to get access to natural asset for household livelihoods, which indicated by the number of HH members (households) of each HH groups that engage in livelihood activities: In poor household groups, the number of households that enter forests to collect NTFPs for their daily livings are always the largest. In the medium households, the number of HH that engage in coffee cultivation accounted for the highest rate. And in the better off households, the number of households engage in vegetable farming, (accounting for the largest proportion as in Lac Duong Town) in trading (Kinh households) or in livestock husbandry (households in Da Nhim commune).

Fourthly, the livelihoods of the households whose main income is from coffee hugely depend on the "shops" inside or outside their villages. Their dependence on shops is not only for coffee beans consumption but also for fertilizers, which meant for both "input" and "output" involved in coffee cultivation. The dependence occurs not only at a point of time or to a number of households but over a long period lasting from year after year and to most households, especially the poor, near poor and medium households.

+ Differences in the livelihoods of household groups in regional areas:

Lac Duong town: There are four sources of main incomes, but not similar among the household groups. Collection of NTFPs alone is not significant contribution to household incomes. In the better off households, apart from incomes from crops, hired labor and forest protection contract, there is additional incomes from husbandry. In the poor households, as incomes from coffee cultivation and hired labor are low, the proportion of income from forest protection contract increased. In the group of medium households, their incomes relied mainly on coffee cultivation.

Da Nhim commune: There are 4 main livelihood groups including crop cultivation, non-agriculture activities, contractual forest protection and collection of NTFPs, which can generate household incomes. The characteristics of the poor and near-poor households related to their incomes and household livelihoods indicated in the following aspects (i) Only 3 main sources of incomes for the households without non-agricultural activities and animal husbandry; (ii) The main income is based on the coffee cultivation, hired labor and

contractual forest protection. In the better off and medium households, the highest proportion is from crops and non-agricultural activities. Hired labor generated the highest income source for all household groups in the area.

Da Chais commune: All 4 household group earned income from non-agricultural activities but with different nature. For the poor and near-poor groups, the main non-agricultural income is hired labor and contractual forest protection. While, for the better off and medium household groups, this income source included income source from trading and service. The better off household group mostly does not engage in collection of NTFPs. In the income structure of the four household groups, the proportion of income source from crops is lowest in the poor households group but highest in the better of household group.

Figure 3.5. Encroachment for agricultural cultivation in Da Chais commune

3.6.   Situation of local people's access to natural resources

3.6.1. General information

In the whole region (7 target villages), land area used for crop cultivation accounts for 96.5% of the total land area of the households.

The particular land areas for each area are presented in Table 3.14.

Table 3.14. Number of HHs and average land area per household by each regional area.

Regions	Total (HH)	Land area (ha/HH)	HH number (HH)	Land area (ha/HH)
Lac Duong Town	343	0.56	291	0.66
Da Nhim Commune	448	0.86	418	0.92
Da Chais Commune	258	0.71	255	0.72
Total	1049 [(*)]	0.73	964 [(**)]	0.79

Note: ^(*) *total HH number through interview,* ^(**) *Actual number of HH with agricultural land*

According to analysis results in Table 3.14: If the average land area per household for all the households (surveyed) in the area is calculated, the land area is 0.73 ha/ household; The largest land area is in Da Nhim commune 0.86 ha / household, next in Da Chais commune 0.71 ha/ household, and the lowest in the town of Lac Duong 0.56 ha household. The largest area per household is 4.0 ha in Da Chais commune, 7.0 ha in Da Nhim commune and 10.0 hectares in the town of Lac Duong. In contrast, there are 85 households (accounting for 8.1% of total households) possessing no land due to many different reasons, the largest number of households without land is in the town of Lac Duong (52 households) and the smallest number in Da Chais commune (3 households). Accordingly, the average area per household that actually owned land is 0.79 ha (964 households out of the total 1,049 households).

Table 3.15. Number of HHs and average land area perhousehold by type of land

Regions/ Indicators	Lac Duong HH/ ha/HH	Da Nhim HH/ ha/HH	Da Chais HH/ ha/HH	Total HH/ ha/HH
Coffee land	264/ 0.54	411/ 0.74	252/ 0.56	927/ 0.63
Annual land	48/ 0.69	13/ 0.42	4/ 0.23	65/ 0.61
Fallows	4/ 0.78	211/ 0.30	138/ 0.31	353/ 0.31
Other	46/ 0.27	217/ 0.34	123/ 0.31	386/ 0.32

Note: numerators show the number of land owning HH(HH), denominators show average land area per land owning HH (ha/HH)

a) Land owning   b) Avearge land ha/household
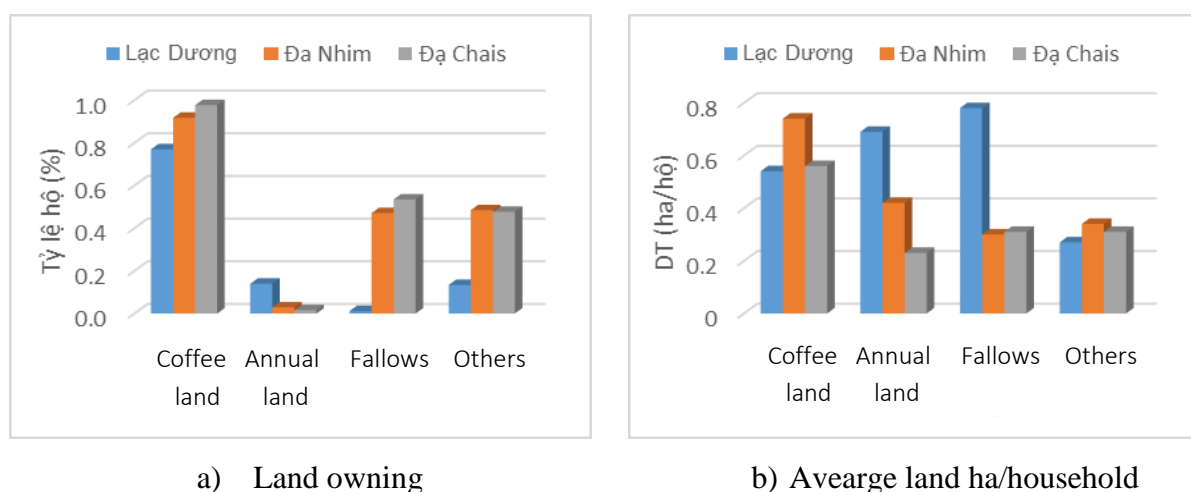
**Figure 3.6. Allocation of household (%) by land owning
and average area (ha/household) for each types of land**

The area of agricultural land by function consisted of: coffee land, annual land, fallows, and other types of land (including paddy land). Coffee land distributed in all areas; the difference in land area / household is from 0.54 to 0.74 ha (the largest is in Da Nhim commune). Annual land distributed mainly in the town of Lac Duong, 0.42 ha on average / household. Fallows distribute widely in Da Nhim commune and Da Chais, 0.31 ha on average / household, mainly for short-day crops. Other land includes the remaining plants, 0.32 ha on average/ HH, also

distribute mainly in two communes of Da Nhim and Da Chais, of which water paddy rice land account for only 2.9 ha (in Da Nhim commune).

+ Some outstanding features of the access to agriculture land resources in the areas are:

Lac Duong town: The area of land put into cultivation consisted of: coffee land, existing fallows, annual land and other crop plant types. (i) Bnor B Village, with 73% of agricultural land for coffee cultivation, 18% for annual land, 6% for fruit trees and other crops. The area of fallows accounted for 3% of agricultural land, where coffee plants and other crops are cultivated. (ii) Bon Dung 1 village, with land area of 0.4 hectare on average/ household. Agricultural land included coffee land and annual land normally for subsidiary crops. In addition, some households rented land for farming, 0.26 ha on average / household, accounting for 24% of the structure of land area of the village.

Da Nhim commune: (i)Da Ra Hoa: Land area of 0.79 ha on average / households, with up to 98.6% of the land area is for cultivation of crops. The area of agricultural land consisted of: coffee land 81.9%, existing fallows 15.2%, and other types of land. There is no water paddy rice land, while land for fruit trees and other crops accounted for a very small proportion (only 2.9%). (ii) Da Blah village: coffee cultivation area account for 82.5% of the total area of agricultural land, next is fallows area accounting for 12.5%, the rest is other land types and annual land (2.9 ha).

Da Chais commune: (i) the percentage of agricultural land of Klong Klanh village is 91.3% of the total land area. In the structure of agricultural land, Coffee land accounts for 77%, fallows account for 22%, the remaining types accounted for only 1%. (ii) Dung Ksi Village: Among 78 surveyed households, only 77 households possess agricultural land, in which 76 households own coffee land, 47 households own fallows. The number of households of people whose land is located in 11 areas of agricultural land in the land area of BNBNP

The common feature of the access to forest land resources and agricultural land in the areas is a "free access" way of the people. Although now, this approach is limited by the state management authorities, but the nature of this action remains intrinsic, namely "free" for encroaching for coffee cultivation. The main reason is the traditional habit in the lives of people still remained and the control of forest owners cannot cover every geographic location as well as each of the people entering the forest

3.6.2. Issues related to land allocation, use and ownership

+ *Location and allocation of agricultural land area*

Through group discussions with the people, locations and distributions of agricultural land in the local areas can briefly be described as follows [4]:

Lac Duong town: Village Bnor B has 5 places of agricultural land covering from several ha to about 30 ha. Thon Bon 1 had up to 11 places of agricultural land outside the village, but each place covered less than 10 ha.

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[4] See detailed maps of distribution of agricultural locations of the village (Village survey report)

Da Nhim commune: Da Ra Hoa has 8 places of agricultural land outside the village; some place covered up to 50 ha. Da Blah village had 10 places of agricultural land, the largest area covered 15 ha. Da Tro had 9 places of agricultural land outside the village.

Da Chais commune: Klong Klanh village has up to 21 places of agricultural land, the largest place now covers 40 ha. Dung K'si has 11 places of agricultural land outside the village, the largest place covered 20 ha.

Through group discussions, the following can be also noticed:

All villagers have coffee growing lands located away from the village where they are living (in the land of BNBNP and DNWSFMB). Each small coffee land might belong to villagers from either the same village or several different villages. Some cover only a few ha, others up to a few dozen ha. According to group discussions, those are the land that were cleared and cultivated by households long before, but very little land in those areas are granted land use right certificates (Red Book). Therefore, many of the households do not declare them in their actual total cultivated land areas.

Comparing the cultivation land area of households through direct interviews and group discussions, it is found out immediately that the villagers' lands outside of their village really existed and lasted for many years. All those lands (existing land or from additional recent encroachment) are not usually informed during household interviews (because according to group discussions on the allocation of agricultural land, the estimate of average land area in many locations can be over 1 ha / household, but in the interviews most land area is informed to be less than 1 ha / household). Therefore, this report is not able to identify the actual area of coffee land of households outside their villages.

In short, coffee cultivation areas of the villages are not only situated in residential areas in the villages but also scattered in many different places in the forest. Most of these areas are not granted the land use ownership. This also means that the state is unable to control the area of cultivation land of the people away from residential areas.
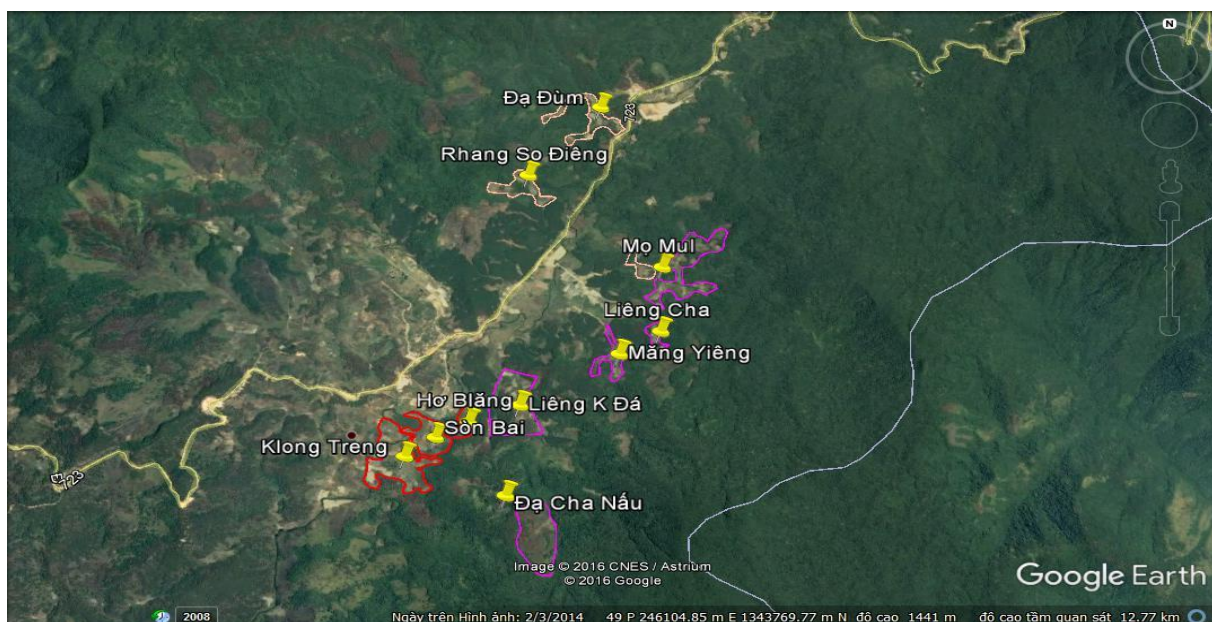
Figure 3.7. Traditional cultivated areas in Da Chais Commune

+ *Forest land/ Forest resource*

Most of the natural land of the communes is part of the land area of BNBNP and DNWSFMB. Therefore, communal forest land for PFES contract belongs to these two forest owners. Besides, toward the people, forest is classified into two main types: pine forest and mixed forest. Pine forests are distributed in the area around the villages, which provide almost no products. Mixed forests provide mushrooms, wild vegetables, orchids and several other NTFPs, including fishes. All mixed forests are far away from residential areas.

Accordingly, people access to forest resources with 3 main activities: (i) patrolling and protecting forests in the PFES-contracted area which is a regular and compulsory activity of contracted households. (ii) Cultivating fallows with mainly coffee plant growing/ caring and short-term crops growing (corn) which are the activities of HH whose land has long been cultivated in the forest. (iii) Collecting NTFPs for domestic use or for extra income. This is the activity of the majority of the poor or medium households who want some additional income from the sale of forestry commodities.

The way people access to natural resources to "till the fallows" is still customary practice. First, they look for a relatively flat forest land, slash forest trees and plants, clear the land and grow short-term plants (mainly corn). When coffee price is high, people start to encroach upwards forest land (which involved cutting down timber trees) for coffee cultivation. This encroaching practice leads to two possibilities: (a) forest owners pay little attention to villagers' activities on forest land cultivated years before, (b) forest owners remove well-established coffee plants and demarcate the border between allowed land and no-encroachment areas. In both ways, no Red Book is granted for most of the lands.

+ *Status of land ownership and disputes*

Land types and status of land ownership in survey area (Table 3.16):

Regarding the 4 main land types listed in Table 3.16, other land (including paddy rice, fruit trees and other trees) has the highest rates of land ownership (77.3%), but the total land area is only with 22.3 ha. The second highest land ownership rate is annual land accounting for 57.5% of the total 39.7 ha. The land types that covers the largest area but has the lowest ownership percentage is coffee land with 587.9 ha only 35.9% which have official ownership.

Table 3.16. Land area and percentage of land with Red Book of each type

Regions/ Indicators	**Lac Duong**	**Da Nhim**	**Da Chais**	**Total**
Coffee land	142/ 54.2	305/ 36.7	140/ 16.4	588/ 35.9
Annual land	33 / 63.6	5.4 / 29.6	0.9 / 11.1	39.7/ 57.5
Fallows	3.1 / 0.0	64 / 26.6	43 / 8.1	109/ 19.3
Other	15 / 76.7	6.9 / 85.5	0.4 / 0.0	22.3 / 77.3

Note: numerators show land area (ha), denominators show land area with LURC (%)

By area, it is easy to notice that in Lac Duong town over 50% of the land area has land ownership (except fallows). In Da Nhim commune, the average percentage of owned land is below 50%, in which only 36.7 % of coffee land, the largest area among 3 communes/town,

has land ownership. In Da Chais commune, the land type with the highest ownership which is coffee land, reaches only 16.4%.

In summary, by land type, the largest lands in the areas, such as coffee land and fallows accounted for the lowest ownership rates. By area, Lac Duong Town has the highest rates of land ownership, next is Da Nhim commune and the lowest rate is in Da Chais commune. 411 out of 964 households have Red Book (partly of or entirely), accounting for 42.6% of total households.

+ The outstanding features related to status of land ownership in survey:

Lac Duong area: (i) In Bnor B village, land types other than coffee land have the highest land ownership rate (75.4%). However, this land type covers only 7.33 ha. While coffee land and vegetable land has almost the same ownership rates (53.87% and 54.01% of the total area). (ii) Through survey of the status of land types and the rate of land with ownership in Bon Dung 1 shows that the percentage of the annual land granted with Red Book is fairly high, accounting for 83% of the land area. Regarding coffee land, the percentage of land area with Red book accounts for about 54% of the total land area the households are using. In Bon Dung 1, the local government granted land to newly split households and the households that owned no land.

Da Nhim commune: (i) In Da Ra Hoa village, subsidiary land and other crop land has the highest percentage of land ownership (72.7% of the area), next is coffee land, 37.3% and finally fallows, 26.0% of land area. (ii) In Da Blah village, coffee land area with Red book accounts for nearly 45% of land area under cultivation, next is the area of other crops. In the opinion of the people, the local authority limited the grant of Red book to the people to avoid the situation where they sell land to Kinh people and then will continue to encroach forest land for cultivation.

Da Nhim commune: In general, the rate of land area granted with Red book in the whole area is low. Reasoning for this situation is that only small land area alongside the villages or the inter-provincial highway 723 has been planned by the government for agricultural production (Da Chais land is forest land) Accordingly, the local governments are considering granting Red books for the people for fear that people continue to sell, transfer land and go on encroaching forest land[5].

HH group discussion explains the causes contributing to different rates of household land tenure among the three areas. In the area of Lac Duong town, land has been used for vegetable cultivation for a long time. In addition, the local government takes the initiative to grant land to newly split households or households that have no land. Therefore, the rate of households that are granted with Red Books is relatively high. In Da Chais and Da Nhim communes, planned land is mainly forestland, the conversion of forest to agricultural land is subject to land policy. In fact, the more red books are granted to newly allocated land, the more favorable it is to transfer. Therefore, the local government has to consider granting lands together with Red Books

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[5] Article 11 of the Law on land (2003)   classified land into 6 types. Agricultural land and forestland are two of the six types

+ General points related to land dispute situation in the whole area:

A problem related to land ownership status is the intervention of locally operating companies in land ownership of the local people. The companies in the area include Ngoc Mai Trang, Thanh Nam, Khanh Van, Vinaco, Vingroup (including subsidiary companies: Cat Khanh Hoang Lan, Hoa Hong Vang), Kinh Nong, Nam Tien, Thien Thai, (apart from them, Tai Tin company went bankrupt and had to return the land to the people). These companies are purchasing land from villagers to establish vegetable production companies (Ngoc Mai Tran, In-group) or to carry out sand mining or exploiting certain minerals (Kinh Nona, Nam Tine), which results in soil erosion on cultivated lands.

In addition to the interference of private companies, there is the situations where land disputes between households and forest owners, i.e. BNBNP and DNWSFMB, occurred. The situations where villagers expand their lands for the expansion of coffee cultivation is the most common. The situations happen and last for many years. Of course, land encroachment is illegal, which resulted in "plant removal" by forest owners. However, the clearing operation is not carried out continuously for many years. In addition, there is no consensus on how to solve the issue between forest owners, and even between sections of the same forest owners (time for clearance, full clearance or partial clearance). That can lead to a state of "lucky or unlucky" in the psychology of the people who perform acts of "encroachment" of forest lands. However, during the recent past years, as forest owners have executed drastic clearance right at the outsets, forest land encroachments do not recur.

The causes that contribute to disputes between households and companies or villagers and forest owners are the asymmetry of information related to the land use right and sale of land between objects. Information asymmetry indicates following points: (i) Difference in determination of the value of the land (land price); people normally do not know the land value due to lack of information or information update, while the companies actively searched land prices in each location or at current point of time, which resulted in disputes over land prices. (ii) Reception and understandings of legal information about land (the laws, policies and regulations related to land use rights and ownership of land resources); people normally are not aware of such information as the local people did not have access to information and the relevant authorities failed to keep the people informed. (iii) the material interests of the people and the responsibilities of land resource managers: The people want to have agricultural land in order to increase their material benefits, while the managers protect the land resources because of the common responsibilities and follow "directive guidance" from their superior levels.

3.7.   Agricultural production

3.7.1.   Main agricultural production activities

Agricultural production in target villages include two main activities, i.e. plant cultivation and animal husbandry.

+ *Plant cultivation*

Plant cultivation situation in the surveyed area has the following characteristics: (Table 3.17 to 3.20)

Table 3.17. Allocation of numbers of HHs by the average cultivation land area

Regions/ Area values	Lac Duong		Da Nhim		Da Chais	
	HH	**%**	**HH**	**%**	**HH**	**%**
Under 0.5 ha	231	67.4	191	42.6	139	53.5
From 0.5 to 1.0 ha	77	22.5	136	30.4	79	30.6
From 1.0 to 2.0 ha	25	7.29	95	21.2	31	12.0
From 2.0 to 3.0 ha	7	2.04	17	3.79	7	2.71
From 3.0 to 5.0 ha	1	0.29	8	1.79	2	0.78
Above 5.0 ha	2	0.58	1	0.22	//	//
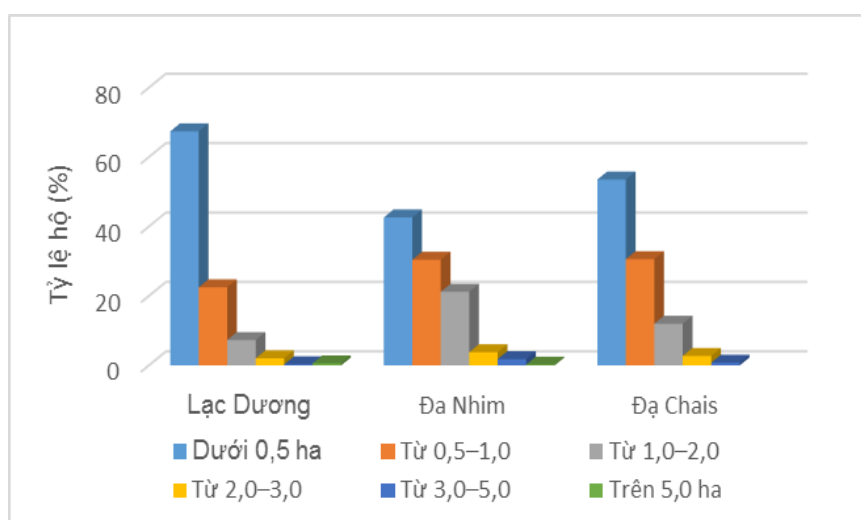
Figure 3.8. Distribution of households (%) by cultivated land areas in regions

Firstly, cultivated areas of HHs: Allocation of the number of HHs (%) by crop area corresponds to the each of the percentage of HHs categorized by land area. According to Table 3.17, up to 55% of total HHs have less than 0.5 ha (given that 85 HHs have no land, section 3.6.1), and over 95% of the HHs have less than 2.0 ha/ HH. Only 1% has more than 3 ha. These areas are collected through HH interviews, during which many HHs do not include areas for coffee farms "far away' from their homes due to "no Red Book" (3.6.2).

Table 3.18. Number of households categorized by major plants

Regions	Coffee		Vegetables		Other crops	
	No. of HHs (HHs)	**Land area (ha/HH)**	**No. of HHs (HHs)**	**Land area (ha/HH)**	**No. of HHs (HHs)**	**Land area (ha/HH)**
Lac Duong	264	0.54	48	0.69	46	0.27
Da Nhim	411	0.74	13	0.42	217	0.34
Da Chais	252	0.56	4	0.22	123	0.31
Total/ Average	927	0.63	65	0.61	386	0.32

Secondly, with regard to the structure of households and land area by region (Table 3.18). Out of the total 927 coffee cultivation households, the number of households in Da Nhim

commune accounts for the highest proportion (44.3% of households), next are the households in Lac Duong Town and Da Chais Commune. By crop, 88.4% of the households engage in coffee cultivation, 4.9% vegetable farming and 36.8% other types of crops (mainly corn and fruit trees of all kinds). Coffee plants are found in all the villages of 3 communes and vegetables almost only in Lac Duong Town, while food crops (corn) and fruit trees are dispersed in Da Nhim and Da Chais communes. Overall, the average cultivation area per household among areas is not so different from one another. Except Coffee and vegetable cultivation that is subject to specialized farming, fruit tree cultivation is under mixed farming style or intercropped with coffee plants

Table 3.19. Income of households categorized by major plants

Regions	Coffee		Vegetables		Other plants	
	Income (million VND/HH)	Expense (million VND/ HH)	Income (million VND/HH)	Expense (million VND/HH)	Income (million VND/HH)	Expense (million VND/HH)
Lac Duong	28.6	20.5	142.0	75.6	94.5	46.2
Da Nhim	21.8	13.9	95.0	17.0	7.5	1.9
Da Chais	13.7	14.3	/	/	5.0	0.8
Average	21.7	15.9	140.1	73.3	64.9	10.2

Thirdly, regarding income and expenses from crop plants (Table 3.19): Comparing the overall incomes and expenses of the three groups of crop plants shows that: (i) the average income from coffee cultivation is higher than investment, the total expense on average accounts for 73.3% of income (given that coffee price dropped in 2015). (ii) Income from vegetables surpasses expenses, total expenses on average accounts for 52.3%. (iii) Other kinds of crop plants also generate income much higher than expense; The average expense accounts for 10.7% of income, which is very low as fruit trees are the major crop plants (sometimes fruit trees still generate incomes without expense).

Based on the structure of cultivated areas and income ratio from crop plants compared to total income of households in the whole areas, coffee can be considered the mono-cultivated plants in terms of areas and decisive total income value of HHs in the entire areas. However, higher profits or benefit-cost ratio had to be from vegetables and other fruit trees. Therefore, agricultural production in 7 target villages eventually focused on activities of growing, caring and harvesting coffee plants.

Next, with regard to food security situation which involved land area reserved for agriculture production, only 2.9 ha of land out of the cultivated area of all the 7 villages are devoted to paddy rice cultivation, which means rice cultivation almost disappeared in this area. Accordingly, the local food security situation in "subsistence" agriculture is not guaranteed. Local people had to borrow food for their own lives (percentage of households subject to food borrowing is over 50% of total households of the village. The highest percentage is in Da Nhim and Da Chais, section 3.11.2).

+ Summary of some features of crop plant cultivation in the areas:

Lac Duong town: In crop cultivation, the benefits to cost ratios from all crop types are higher than 1, with distinctly superior ratios (from 1.9 to 2.0) being from vegetables and other crop plants, while the benefit to cost ratio of coffee plants is 1.4. However, only 11.7% of households in the region engages in vegetable cultivation. The number of vegetable farming households in Bon Dung 1 is larger than that in Bnor B village, and economic efficiency of vegetable cultivation in Bon Dung 1 is also higher;

Da Nhim Commune: Economic efficiency expressed with the benefit to cost ratios of the crop types are very high (from 1.6 of coffee plants to 5.5 of vegetables). However, only 4 out of 13 vegetable cultivating households earns incomes (as a results, the average income per household is very high. Accordingly, agricultural production in the region Da Nhim, after all, focuses on coffee trees;

Da Chais Commune: As compared to the two above-mentioned areas, the distinct difference in Da Chais is that all households possessing cultivation land engage in coffee cultivation and that the benefit to cost ratio of coffee plants in this area is lower than 1 (the benefit to cost ratio is 0.96). In addition, 4 households do not produce commodity products from their land of short-term crops.

In summary, comparison of the current status of crop plant cultivation among the 3 regions shows that: (i) In Lac Duong town, the rate of cultivation land area / household is the lowest, and the local cultivation is multi-crop farming style including high-tech vegetables, which results in larger incomes and higher economic efficiency. (ii) In Da Chais area, the percentage of coffee cultivation household is the highest. Coffee cultivation area/ household is also the largest, but the local coffee cultivation is of an "extensive style" which leads to lower productivity. With regard to Da Nhim area, cultivation land area / household is equivalent to that in Da Chais, but the local economic efficiency is still lower than that in Lac Duong.

+ *Animal husbandry:*

In the total livestock and poultry raised in the surveyed area the quantity of poultry (chickens and ducks) are larger. However, main income is attributed to cattle (buffaloes, cows, and pigs). Other animals (goats and horses) and farm fish are not available. Buffaloes and cows are raised as free range animal in the wooded pasture. However, there are still some people watching them and collecting manure. Buffaloes, cows and pigs are raised for meat for sales, poultry for family use. Very few HHs in Lac Duong sell poultry to restaurants and shops.

Table 3.20. Animal husbandry situation

Regions	Cattle			Poultry		
	No. of HHs (HHs)	Income (million / HH)	Expense (million / HH)	No. of HHs (HHs)	Income (million / HH)	Expense (million / HH)
Lac Duong	10 / 11	33.4	10.5	41	1.5	3.3
Da Nhim	16 / 86	26.4	9.5	32	0.6	1.4
Da Chais	6 / 34	3.7	2.5	11	1.0	1.3
Average	32 / 131	24.5	7.8	84	2.2	2.3

Note: 32/131: the numerator represents the number of HHs with income and the denominator indicates the total number of HHs with animal husbandry.

According to Table 3.20, due to differences between areas in free range husbandry conditions, the number of HHs raising cattle (pigs, buffaloes and cows) and poultry (chickens and ducks) is also different among areas. The largest number of HHs with animal husbandry is in Da Nhim, and the second largest is in Da Chais. In Lac Duong Town, the number of households that raised poultry is larger than those in two other areas, probably due to higher demands from restaurants and shops (for selling to tourists).

The two different groups of animal husbandry corresponded with two completely different products; while cattle raising provides meat for the market as a commodity product (with income), poultry meat supply is almost for family use. Therefore, income from husbandry raising is negligible (income value if any is only calculated for HHs with products sold out of the total animal raising HHs, table 3.20).

However, it must be noted that animal husbandry data is analyzed at the point of time of the survey is carried out (2015). There might be many animal raising HHs with expenses on animals but most of them earned no income (because they had not been sold yet). Therefore, the values of income and expenses are only for reference or comparison between the HH groups. They do not represent the economic efficiency of animal husbandry as livelihoods. Accordingly, a number of tables of livelihood analysis in this report will not calculate economic efficiency when they relate to raised animals.

3.7.2.   Agricultural production of poor and wealthy HH groups

The situation of agricultural production with three main activities by each HH economic groups is summarized in Table 3.21.

Table 3.21. Main agricultural production activities by economic groups in the whole area

	Coffee cultivation		Vegetable cultivation		Other plant types	
HH groups	No. of HHs (HHs)	Income (million)	No. of HHs (HHs)	Income (million)	No. of HHs (HHs)	Income (million)
Poor	135 / 143	4.96	1 / 1	20.0	0 / 21	/
Near poor	253 / 263	12.8	5 / 6	27.0	9 / 50	5.8
Medium	400 / 406	23.4	19 / 21	54.6	25 / 73	29.7
Better off	104 / 105	58.8	23 / 23	240.4	22 / 37	129.3
Total	892 / 917	21.7	48 / 51	140.1	56 / 181	64.9

Note: the numerator represents the number of households with income and the denominator indicates the total number of HHs with cultivation activities in 2015.

According to results in Table 3.21, this report makes the following observations:

Firstly, regarding coffee cultivation, the ratio of HHs with incomes to coffee cultivating HH is the highest (97.3% of total HHs). Next, 94.1% vegetable growing HHs earned income. Regarding other crop plants (corns, bananas and fruit trees) the ratio of HHs with income is lowest (30.9% of total growing HHs) Also, according to the above mentioned results the

highest income per HH belonged to vegetable growing, followed by some other plants, and lastly coffee cultivation, but the number of coffee cultivation HHs is the largest, then other plants and lastly vegetables.

Secondly, the similarity among economic HH groups is that all engage in coffee cultivation with very high ratios. However, due to different cultivation areas on average per HH (3.6.3) and different investment ability for plants (3.7.3), income per HH is different. Income difference in incomes from coffee cultivation between medium HH group and poor HH group is 4.7 times, between better off and medium HH groups 2.5 times. In short, income from coffee cultivation depends not only on cultivated area but also on long-term investment and care over several years.

Thirdly, the difference between economic HH groups is in "non-coffee" production activities. The poor had almost no cultivation of vegetables and other plant types. The near poor rarely engage in vegetable cultivation. The better off HH earned surpassing income mainly from vegetables and other plant types. According to the results in Table 3.21, it can be said that vegetable growing generated decisive income for the better of HH groups.

Among all the local clusters, vegetable cultivation generated high income but cannot be a common livelihood for all households. Natural, financial, technical, and marketing conditions decided the development of cultivation area of these plant types. In particular, Lac Duong town had advantages over other areas such as Da Nhim and Da Chais communes mainly because of its natural conditions (flat land), cultivation techniques (many high-tech vegetable companies), and market (easy product exchanging or trading).

3.8.   Non-agricultural livelihood activities

3.8.1. General information

Non-agricultural activities in the villages are classified into four specific activities (interview questionnaire) including: trading and services, salaries and hired labor, handicraft and other possible activities (renting land, allowance, and social welfare). Through discussion, there are very few handicraft activities in the villages, small trading and services are limited to a few HHs, and income from salaries (government and private companies) is of little value. Therefore, in this report, these activities are referred to as trading + services + others. Hired labor is quite popular. Results are in Table 3.22 and Figure 3.9.

Table 3.22. Non-agricultural activities of households

Regions	Salaries and hired labor		Trading and services		Total of non-agricultural activities	
	No. of HHs (HHs)	Income (million / HH)	No. of HHs (HHs)	Income (million / HH)	No. of HHs (HHs)	Income (million / HH)
Lac Duong	270	44.5	38	62.1	289	49.8
Da Nhim	242	16.6	43	36.0	270	20.6
Da Chais	140	20.9	19	34.8	151	23.4
Total	652	28.9	100	45.7	710	33.1
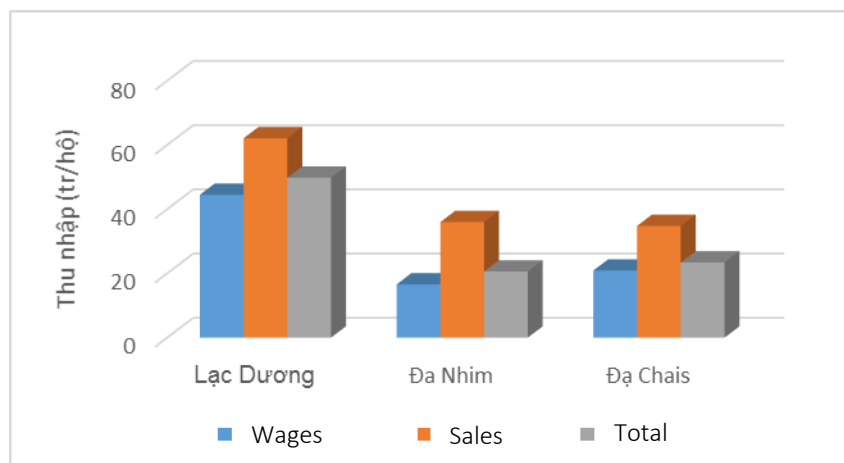
Figure 3.9. Income (Million Dong/ household) from non-agriculture in regions

Based on the number of participating households and kinds of non-agricultural activities (Table 3.22 and Figure 3.9), livelihoods from non-agricultural activities can be clearly distinguished by area. In Lac Duong town, the number of participating households is higher and the average income per household is twice as high as that in Da Nhim and Da Chais communes. Accordingly, payment for workday in town area is higher than in Da Nhim and Da Chais communes.

652 out of 710 HHs get income from salary and hired labor as non-agricultural activities (91.8% of total HHs). However, income from salaries (for commune, village officers) is insignificant. Hence, it is possible to conclude that 90% of total HH number had non-agricultural activities or 62 % of total HH of the villages earned incomes from hired labor. Through discussion results, only few HHs worked as hired laborers for private enterprises in the local area (in Lac Duong Town) and most villagers worked for HHs that had large coffee cultivation area (inside and outside of their village). Income from hired labor varied depending on tasks and genders, commonly at the rate of 100,000 – 120,000 VND for female and 150,000 – 200,000 VND for male. The highest income earning HH in 7 villages from hired labor had 240 million VND/ year, and the lowest 0.2 million VND / year.

Around 100 HHs engage in trading and services and other activities, mainly small trading within their village (selling food, daily supplies and working as middlemen for trading of coffee beans). The highest income earned by HH is 360 million VND per year from these activities. Other non-agricultural activities that also generate incomes include renting land and houses, mining tin, joining ecotourism and receiving social welfare (poor HHs assistance and war-invalid pension). Except one HH that trades in coffee bean and rents their land, other HHs earn very low and unstable income from this type of activities.

In short, non-agricultural activities that generate income for HHs are simple in the area. Villagers simply work as hired laborers on others' coffee farms. Other non-agricultural activities generate very fluctuating incomes, depending on the type of work and labor types among households.

3.8.2. *Non-agricultural livelihoods of economic HH groups*

Non agrilcultural livelihoods of households are classified in two main groups: from wages /paid work and others. Numbers of households and their average income is summarized in Table 3.23 and demonstrated in Figure 3.10.

Table 3.23. Non-agricultural production activities of economic groups in the whole area

| HH groups | Salary and hired labor | | Trading, services and others | | Total of non-agricultural activities | |
	No. of HHs (HHs)	Income (million)	No. of HHs (HHs)	Income (million)	No. of HHs (HHs)	Income (million)
Poor	89	10.6	2	3.75	89	10.7
Near poor	175	23.4	12	38.8	183	24.9
Medium	295	26.5	48	33.1	328	28.7
Better off	93	64.5	38	65.9	111	77.2
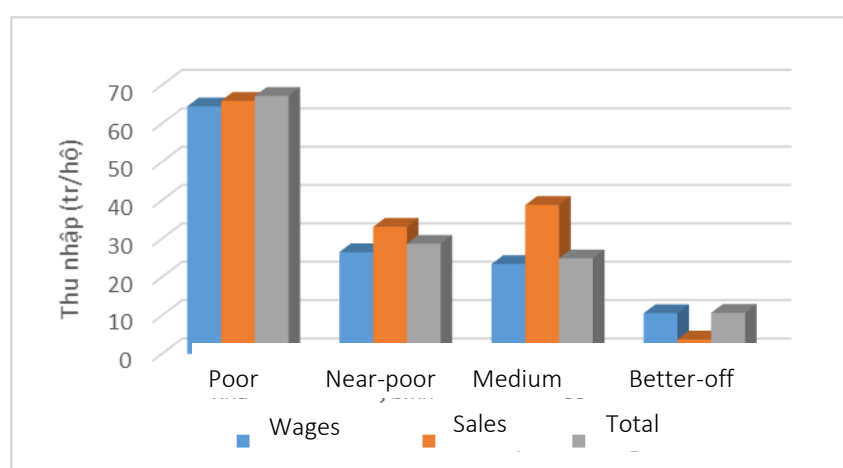
Figure 3.10. Income (Million Dong/ household) from non-agriculture by groups

Non-agricultural livelihoods of economic HH groups (Table 3.23 and Figure 3.10) confirmed hired labor as that the decisive income contribution in comparison with other non-agricultural activities in terms of number of HHs participating (652 HHs/ 100 HHs). However, average income per HH from trading and services is higher than that of hired labor (45.7 million VND/ HH versus 28.9 million VND / HH).

Comparison of incomes between wealthy and poor HH groups even confirmed hired labor as the only income source of the poor. Besides, the better off HH group surpasses the medium and near poor groups in income because of other non-agricultural income sources from not only hired labor (2.4 times) but also other sources (twice).

In short, economic HH groups are different but they all had non-agricultural activities for HH income. However, income source from non-agricultural activities (trading, services and rending) makes income of the better off HH group different from other groups.

3.8.3. Non-agricultural activities of ethnic HHs

Livelihood survey results between wealthy and poor households discovered that Kinh people get involved in trading more than other ethnic groups. This report reviews the livelihoods of the ethnic groups to clarify this observation. The results are shown in Table 3.24.

Similar to wealthy and poor HH groups, in the ethnic HH group, the number of HH that earned income from hired labor accounted for a very high proportion of the total HH that had income from non-agricultural activities (91.8% of the total number of HH). The Kinh HH group has the lowest number of HHs participating in non-agricultural activities but their average income / HH is always the highest in all the two groups that engage in non-agricultural activities. Comparison of the two groups of the K'ho people also showed that, the Lach also had higher non-agricultural income / HH than the Chil group. In connection with the current status of population distribution (3.8.1), income difference between the two groups depended on geographical and administrative factors in surveyed area.

Table 3.24. Non-agricultural activities of ethnic HHs in the whole area

HH groups	Salary and hired labor		Trading + services + others		Total of non-agricultural activities	
	No. of HHs (HHs)	Income (million)	No. of HHs (HHs)	Income (million)	No. of HHs (HHs)	Income (million)
Kinh	85	57.3	59	56.6	123	66.7
Chil	340	14.0	19	16.9	349	14.5
Lach	227	40.7	22	41.3	238	42.6

Note: Some ethnic households other than indigenous households are merged with the Kinh group.

Thus, comparison of the total income of the Kinh group (115.4 million VND/ HH) to that of ethnic group (80.5 million VND / HH of the Lach group and 37.4 million VND/ HH of the Chil group) shows that the difference between the two groups is significant. However, the difference is not only in total income but also in the sources of income among these HH groups. In the Lach group, income source from non-agricultural activities accounts for 53.0% of total income; the Chil group 38.8%; and the Kinh group the highest, up to 58.0%. This result demonstrates the dynamism of the majority of the Kinh group in some non-agricultural activities and that the Chil group is still very loyal to their traditional agricultural production way.

3.9.   Forest management and protection

3.9.1.   General information

In the surveyed areas, the natural forest under PFES contract is located in both DNWSFMB and BNBNP. According to geographical position and forest resources conditions of each area, contracted households in Da Nhim Commune signed with BNBNP and DNWSFMB. Contracted households in Da Chais Commune and Lac Duong District are mostly under contract with BNBNP (some households signed contract with other forest owners).

Currently, payment rate of forest protection contract in BNBNP is 350,000 VND/ha and in DNWSFMB is 450,000 VND/ha including PFES rate[6]. The payment from an owner is the same for every household; therefore, the amount of money the households receive depends on the area under contract. However, the amount also varies in different household groups, their forest area under contract, and the owners' capacity to sign contract with the permission of the government[7].

Table 3.25. Average income from the contract in comparison to total income of households

Regions	Income from PFES contract		Total income	
	Number of HH (HH)	Income (million/HH/year)	Number of HH (HH)	Income (million/HH/year)
Lac Duong	70/343[(*)]	9.46	343	96.8
Da Nhim	346/448	8.89	448	41.6
Da Chais	219/258	15.2	258	41.3
Total	635/1049	11.1	1049	59.6

Note: [(*)] Number of households under contract/total households surveyed (2015)irrespective of BNBNP or DNWSFMB

(**) average income is calculated upon the rate of 350,000 VND/ ha and 450,000 VND/ ha applied for 2015

Table 3.25 shows that the average proportion of households under PFES contract in the area is 60.9%; the area with the lowest percentage is Lac Duong with 20.4% and the highest is Da Chais with 84.9% households.

The average income from PFES contract (data from interviewing households in 7 villages) is 11.1 million/HH/year. The average income of Lac Duong Town and Da Nhim Commune is about 9 million/year, and Da Chais Commune is 15-16 million/year. The highest income from the contract is 21 million/HH (Da Chais Commune). Because 60.9% household in the villages are contractors, the average income from the contract (11.1 million/year) accounts for 18.6% of the total income (59.6 million/year). However, the total average income of the households under contract (42.4 million/HH) is lower than that of the households not under the contract (86.2 million/HH). The main reason is that the low income households are prioritized to be contractors according to the policy of the government.

Even though local people suggest limited advantages from PFES contract during the group discussion, most of the households expect to sign the contract as 465 out of 589 interviewed households (78.9%) do. The area with highest rate of households with the expectation to sign contract is Da Nhim (89.3% of total households), followed by Da Chais (84.6%) and the lowest rate is Lac Duong town (67.5%).

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[6] Maximum PFES price in 2013-2015 is 450,000VND/ha/year, from 2016 is 500,.000 VND/ha/year (Lam Dong PPC, 2016).

[7] The decree of Ministry of Agriculture and Rural Development allows a household to contract a maximum forest area of 30 ha.

3.9.2. PFES issues

A discussion with villagers about PFES contract reflects two issues for further analysis: (a) Whether the PFES contractors have more coffee plantation in the forest; (b) Whether households collecting NTFPs are also contracted households and if the collection is conducted in the contracted land or outside the contracted land.

First of all, to begin with the income of contracted households from main sources of income, the purpose is to examine the differences between the contracted households and non-contracted households. The results are indicated Table 3.26.

Table 3.26. Incomes from PFEs contract and from other livelihood activities

HH group areas	Incomes from PFES contract		Incomes from crops		Incomes from non –agricultural	
	Number of HH (HH)	Income (Million)	Number of HH (HH)	Income (Million)	Number of HH (HH)	Income (Million)
Lac Duong	70	9.46	343	51.3	289	49.7
Contracted	70	9.46	70	38.0	52	39.4
Non-contracted	//	//	273	54.8	237	52.0
Da Nhim	346	8.89	434	21.7	269	20.5
Contracted	346	8.89	344	22.7	190	14.2
Non-contracted	//	//	90	18.3	79	35.7
Da Chais	219	15.2	258	12.9	151	23.2
Contracted	219	15.2	219	9.9	117	13.0
Non-contracted	//	//	39	29.6	34	58.5

Firstly, the most obvious discrepancy in income is from contractual forest protection, the contracted households receive and additional average income of 11.1 million/HH/year, while the non-contractors earn nothing. Secondly, the income from crops of contracted households is lower, with an average gap of 2.51 times. Third, the income from non-agricultural sources in general of the contracted households is lower by 2.84 times. Therefore, the contracted households have lower income in all main livelihoods.

Table 3.27. Related activities of PFES contractors and non-contractors in the whole area

HH groups	Coffee plantation 1		Coffee plantation 2		NTFPs collection	
	Number of HH (HH)	Area (ha/HH)	Number of HH (HH)	Area (ha/HH)	Number of HH (HH)	Quantity (kg)
Contracted	604	0.51	168	0.48	329	35.4
Non-contracted	307	0.47	70	0.52	116	20.5

The results in Table 3.27 demonstrated the area of coffee cultivation 1 (near villagers' houses) and Coffee 2 (far from villagers' houses) between the two groups is slightly different (the discrepancy of 0.4 ha/HH). Moreover, the contracted households are concurrent NTFPs collectors. The answers in the interview indicate that 329 households out of 637 contracted households (51.8%) collect NTFPs; however, only 141 households sell their collected products, which yields 4.0 million/HH/year. Among 414 non-contracted households, 116 households collect NTFPs (28%) and 19 of them sell their collected products. Overall, the number of contracted households collecting NTFPs almost doubles the number of non-contracted households doing the same.

It is concluded that more than half of the contracted households live on income from payment of contractual forest protection. They also collect non-timber products directly from the forest for their daily needs

+ The features related to contractual forest protection by geographical areas:

Lac Duong town: The number of contracted households is limited due to the small contracted area, 22-23 ha/HH on average. The lowest income is 6 million/HH/year and the highest income is 12 million/HH. The PFES-contracted areas are located in BNBNP under 3 forest protection stations, i.e., Lat, Nui Ba and Cong Troi. The livelihoods of the contracted households rely on both crops and non-agricultural sources. Payment from contractual forest protection is an additional income; moreover, NTFPs collection is primarily for daily needs.

Da Nhim commune: 80% of the households sign PFES contracts; therefore, the total income from contractual forest protection of the commune ranks third only after coffee cultivation and hired labor. The livelihood of the contracted households depends on both crop cultivation and contract payment. They also collect NTFPs for their daily needs. The contracted households are mostly from near-poor and medium groups. Better-off households rarely participate in forest protection as their main livelihoods are non-agriculture and crop cultivation.

Da Chais commune: The households mostly sign the contract with BNBNP. The percentage of contracted household is 85% of the investigated households and the average income is 15 million VND/HH. Besides PFES, there is no difference between the contracted and non-contracted households in using forest resources. The income from forest management and protection is an important source of income for the poor and the near-poor. The contracted households are mostly medium households.

3.10.   Activity schedule calendar of HHs

3.10.1. General calendar

The results in the report on the villages showed that the seasonality of the local livelihoods depends on the cultivation schedule of main crops (coffee, and vegetables). In other words, the seasonal characteristic of coffee and vegetables affects the livelihoods in Lac Duong town and the seasonal characteristic of coffee affects the livelihoods in Da Nhim and Da Chais communes.

Table 3.28. Schedule calendar of a number of crop plants and non-agriculture calendar

Activities	1	2	3	4	5	6	7	8	9	10	11	12
Coffee				Pruning, fertilizer application						Harvesting		
Vegetables	Vegetable crop 1			Vegetable crop 2				Vegetable crop 3				Crop 1
Hired labor				Weeding, Pruning, fertilizer application for coffee plants						Coffee harvesting		
Cash				Purchasing fertilizer						Coffee bean selling		

The main characteristics of coffee's schedule calendar:

- The workload is lightest in the first few months of a year (Western calendar). It is the time of dry season and no harvested products. Therefore, the workload is lightest and the income is lowest in a year.

- The heaviest workload for coffee cultivation is during rainy season (from April to September) (including fertilizing, pruning, weeding). Fertilizing is the highest cost, so this is the time when coffee growing households need most labors and money in a year

- Coffee harvest is from October to December and it is the time the households earn income from coffee harvest, and is also the time for repayment and shopping equipment for the family (Christmas and Lunar New Year). The money from coffee is a large amount; therefore, this is the time when the households have abundant cash in a year

The main characteristics of subsidiary crop cultivation:

- Strawberry cultivation: cultivation starts in July, August, caring from November until harvest in December for every two days. The procedure continues and repeats for 2-3 years. Labor is required for not only harvesting but also periodical fertilizing, leaf trimming.

- Generally, strawberry and vegetable cultivation is year round activities, appropriate for available labors of the family. The seasonal features of strawberry and vegetable cultivation is not significant.

- During the time of soil preparation, planning and caring (fertilizing), fertilizing requires the most cash. For vegetable, the season is every 2 or 3 months so money is needed almost every month of the year.

- The main characteristics of non-agricultural activities' schedule calendar:
- Hired labor activities of the households is relative to the cultivation. The households without coffee cultivation work for the ones with the coffee cultivation, so their schedule is similar to the schedule of coffee.
- 5 months from March is a difficult time financially for many households, especially the poor, due to lack of agricultural products. Moreover, the expense for cultivation during this period is higher because of the demand for production materials.

- From September to December, the demand for hired labors is relatively higher than during other months.
- NTFPs collection mostly takes place during dry season, even though the activity is generally year round like hired labor.
- The end of June (for vegetables), November and December (for coffee) is the time when the income of households increases from agricultural harvest, so the workload for hired labors raises along.

3.10.2. HHs' activities schedule

An analysis of the schedule calendar of two kinds of crops shows the infeasibility to clearly distinguish livelihood activity schedule of the household groups. The detailed schedule of the household groups depends mostly on different sources of income. The schedule of the groups in the coffee cultivation coincides with forest management and protection. In short, by income of households, it is possible to divide: (i) schedule by crops (coffee and subsidiary crops), (ii) schedule by PFES activities and NTFPs collection.

Other activities are classified into two groups: (a) poor households, near-poor households and medium households; and (b) better-off households. The better-off households are separated because their income is clearly different from other households'.

(a) Poor, near-poor and medium households: Besides the common schedule as other groups, this group grows food crops (corn) for their livelihood. Usually, corn is grown at the beginning of rainy season and lasts for about 3-4 months. Moreover, this group usually collects NTFPs for food (wild vegetables, bamboo shoots, mushrooms) mostly in rainy season. In addition, other households work as hired labors.

(b) Better-off households: Based on the conclusions from the discussion, a significant number of the better-off households are Kinh. Besides coffee cultivation, some households do trading or work as hired labors. Trading activities (coffee beans, supplies, fertilizer and procurement of NTFPs) take place all year round. In terms of intensity, coffee fertilizing (from April to September) and coffee harvest (from October to December) are when the better-off households work harder.

3.11. Cash flow, management and access to finance

3.11.1. General information

In this report, gross income is the total amount of money the households earn from any sources (inflows), and total income is the amount of money earned from different livelihood activities. The total cost is the amount of money spent for any living and producing activities (outflows) including investment costs for production, food cost, costs for education and health care, etc.

The average income of a household, regardless of their group, is 110.7 million a year. This amount of money is from one of these two sources: (i) loan, such as from banks or private lenders, accounts for 46.1% of the total inflow of the family. (ii) Money from every livelihood activity of the households is the total income of the households every year, accounting for 53.9% of the inflow. Remarkably, the average loan of each household accounts for a half of

the amount of money the household use for expenses, accordingly luck plays an important role in the household's finance.

Then, the average cost is 63.6 million VND. The cost includes: (i) cost for production (cultivation, animal husbandry, trade) accounts for 33% of the total cost, (ii) the remaining 67% is for consumption and living expenses.

However, the money circulation of households is different between regions (Table 3.30) and between household groups (Table 3.29).

+ Inflow and outflow of households according to regions

According to Table 3.29, in 3 surveyed regions, Lac Duong town always has the highest average value/HH in all indicators (loan, income, cost for production and cost for consumption). The remaining money after spending is positive, so the loans from banks and private lenders after being spent for different purposes are left for savings. In contrast, in Da Nhim and Da Chais communes, the difference between income and cost is negative; therefore, the loans from banks and private lenders are to compensate the costs of the households.

Table 3.29. Average inflow and outflow of household by regions

Areas	Inflow		Outflow			Differences between income & cost (million)
	Loan (million/HH)	Income (million/HH)	Production (million/HH)	Consumption (million/HH)	Total cost (million/HH)	
Lac Duong	67.8	96.8	32.2	59.5	91.7	+5.1
Da Nhim	49.6	41.6	16.3	34.3	50.6	-9.0
Da Chais	24.9	41.3	14.3	34.4	48.7	-7.4
Total	51.1	59.6	21.0	42.5	63.6	-4.0

The results in Table 3.29 and Figure 3.11 indicates the income and the cost of households in Da Nhim and Da Chais are lower than that average of the three areas. Through the analysis of components and structure of income, it is found that income from coffee almost outstands other income in these two communes. Hence, once coffee bean price drops, issues arise, including the cost as one of the most obvious indicators. Because the total cost is higher than the total income, some households have to borrow money for production activities and living expenses.
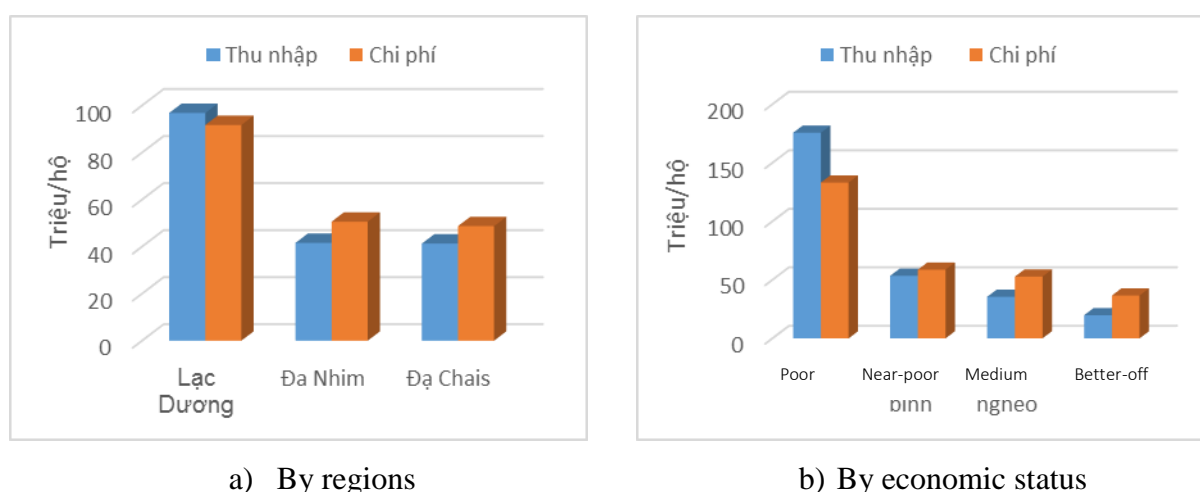
| a) By regions | b) By economic status |

Figure 3.11. Benefit-cost ration (million/ household) by regions and by groups

+ *Inflows and outflows of households according to household groups*

Table 3.30. Average inflow and outflow of households by economic status

HH groups	Inflow			Outflow		Differences between income and cost (million)
	Loan (million/HH)	Income (million/HH)	Production (million/HH)	Consum ption (million/ HH)	Total cost (million/HH)	
Poor	28.3	19.8	6.24	30.4	36.6	-16.8
Near-poor	45.8	35.5	13.0	39.8	52.8	-17.3
Medium	49.6	53.5	19.0	39.6	58.7	-5.2
Better-off	94.3	175.7	61.4	71.7	133.1	+42.6

The results from Table 3.30 and Figure 3.11 shows that the poorer the household, the lower the cost for production (plants, animals). The clearest difference is between the poor and the near-poor with 2 times discrepancy, and between the medium and the better-off with 3 times. Meanwhile, the consumption cost is less different. Between the 3 economic groups of poor, near-poor, and medium, the cost is equivalent, except for the outstanding of the better-off (2 times). Besides, the less difference in consumption cost between groups leads to the higher consumption cost/production cost rate on the part of the poor. Income and cost is balanced in all 4 aforementioned groups, while for the better-off group, the total cost is lower than total income, which means that the group has annual savings after deducting cost.

In summary, income and cost are significantly different between household groups, especially the poor and the better-off in comparison to other groups. The most obvious discrepancy is the income/HH, followed by the cost for production. The correlation between income and cost is positive, but only the median has annual savings.

3.11.2. Loan status of HHs

+ *The number of borrowers, the loan amount:*

To compensate for the cost, many households have to borrow money from different sources, in multiple levels, and in different forms. It can be examined that loan is a familiar "practice" of the local, "loan for every household, loan for every person". The detailed statistics through household interview is demonstrated in Table 3.31.

Table 3.31. Number of borrowers and average loan amount of households by regions

Regions	Commercial Banks		Social Policy Banks		Private Lenders	
	Number of HH (HH)	Loan amount (million/HH)	Number of HH (HH)	Loan amount (million/HH)	Number of HH (HH)	Loan amount (million/HH)
Lac Duong	132	85.2	189	27.4	81	19.0
Da Nhim	91	58.3	265	29.7	203	26.8
Da Chais	3	110.0	126	21.9	39	17.7
Total	226	74.7	580	27.3	323	23.8

- 226 households borrow money from commercial banks, 580 households from Social Policy Banks, and 323 households from private lenders. The number of households borrow money from commercial banks is higher than from commercial banks by 2.6 times. Overall, 695 borrowing households in the area borrowed money from banks (66.3% HH), one bank or both. Overall, 788 households borrow money (75.1%) from at least the three mentioned sources.

- The average amount of loan (on the real loan only) from the commercial banks is highest (74.7 million/HH) with the term of about 18 months, followed by Social Policy Bank (27.3 million/HH) with about 30 months, and finally is the private lenders (23.8 million/HH) with different terms in different households and seasons.

- The number of households and the loan amount from banks (695 and 67 million/HH) is higher than from private lenders (323 HH and 23.8 million/HH). The number of household is higher by 2.1 times and the loan amount is higher by 2.8 times.

A discussion with the people suggests that:

- For commercial banks (BIDV, AGRIBANK): The conditions for loan are to have ownership of Red Book, and ID of the householder. Land for mortgage must be within the management of the district. Loan applications must be certified by the CPC. The current customers who pay the interest and the principal sum can borrow more the next time with the interest rate of 7-8%/year, and the borrowing term of 1-2 year, which can be extended.

- For Social Policy Bank: With unsecured loan by a community, every household can borrow, but the priority is given to the poor and the near-poor (0.5% interest), and the medium (0.65%). The loan amount is 30-40 million VND/HH for the near-poor, and

40-50 million VND/HH for the poor to encourage poverty escape. Borrowing term: 4 years.

- For private lenders (shops): They are Kinh trading coffee beans in the village and the area. The majority of households borrowed money in advance to buy fertilizers, medicines, and even to buy food or for household living expenses. The lenders keep record of the debit and charge the interest rate depending on the amount and borrowing term. The amount varies from several millions to hundreds of millions, with the common interest of 4%/month (30-40 thousand/month of interest for every 1 million borrowed).

- For the local people, loan from private lenders is both an advantage due to the simple and quick procedure, and a "must" for repayment (borrow when growing coffee, and repay when harvesting coffee). There are times when the loan cannot be completely repaid leading to the constant loan from year to year. The feature of loan in the area may potentially become an intractable "problem".

+ *The loan status of economic household groups*

People can borrow money from banks (commercial or policy) or private lenders (shops, neighbors). The loan status of the household groups classified by economic status is demonstrated in Table 3.32

Table 3.32. Number of borrowers and average loan amount of households by economic status

HH groups	Commercial Banks		Social Policy		Private Lenders	
	HH	Million/HH	HH	Million/HH	HH	Million/HH
Poor	13	41.4	82	22.6	40	17.3
Near-poor	52	63.8	166	27.2	106	24.0
Medium	112	63.5	267	27.7	143	21.2
Better-off	51	119.5	63	29.4	33	39.1

Some comments from the results in Table 3.32:

- A comparison between the groups borrowing money showed that the poor and near-poor households tend to borrow money from banks for social policy and private lenders; the medium households tend to borrow from Social Policy Bank, and the better-off tend to borrow from commercial banks to get a larger amount of loan.
- The statistics of the rate of households with loan (from both banks and private lenders) classified by household groups pointed out: the poor's is 69%, the near-poor's is 77.5%, the medium's is 77.1%, and the better-off's is 70.5%. In general, there is almost no difference in the number of households borrowing money between the household groups.
- The statistics of the rate of loan amount (average/HH) classified by household groups pointed out: the poor borrow 28.3 million, the near-poor borrow 45.8 million, the medium borrow 49.6 million and the better-off borrow 94.3 million.

Thus, the difference in loan amount between household groups is remarkable. The richer households tend to borrow more, as can be seen specifically from the double amount borrowed by the better-off in comparison to the average.

The reason for the households to borrow money, as concluded from the discussion, is that the repayment cannot pay off the previous loan. The results from the survey indicated that in the surveyed area only 19.3% household paid off the loan on time, 41.1% repaid partially and 39.6% did not repay. In summary, about 60.4% of the households in the area applied for new loan with the concurrent old loan.

3.11.3. Financial management of household groups

The financial management of household groups is demonstrated in Table 3.33.

Table 3.33. Percentage of households (%) corresponding to financial management indicators

Planning	None	Seasonal	Annual	Unknown
	82.7	10.5	6.1	0.7
Record	No record	Record	Unknown	Unknown
	87.7	11.9	0.1	0.3
Money keeper	Wife	Husband	Both	Other
	56.2	12.3	28.2	3.3
Methods of keeping	Home	Bank	Both	Other
	97.8	1.6	0.1	0.5

Firstly, the status of planning for the production is none for most households in the area (82.7%). The rest of the households (10.5%) either plan seasonally or annually (6.1%).

Secondly, in correspondence to no plan for the production is no record for cost and income of the household (87.8%). In the discussion, the people said that only some trading households keep records of the money flow (11.9%).

Thirdly, in all household groups, the wife is more often the one to keep money (56.2%), followed by both as keepers (28.2%). The information collected in the discussion showed that the role as a money keeper of the wife is a tradition of the ethnic minorities (matrilineal groups)

Fourthly, it can be assumed that almost all households in the area keep money at home, even the better-off households keep money both at home and at the banks. The data also indicated that keeping money at home is a habit of the local people, but it can also be due to the lack of banks in the communes for the convenient exchange of the local.

Table 3.34. Percentage of households corresponding to household's desire indicators

Being able to manage household finance (%)	Desire	No desire	Unknown
	56.5	35.6	7.9
Being able to use microcredit (%)	Desire	No desire	Unknown
	33.5	55.8	10.7

Regarding the financial management needs (Table 3.34), approximately 56.5% of the households have a desire to be able to manage household finance. The opposite is the proportion of households without the desire. However, 7.9% is unknown or empty answer. A comparison to the fact that most people do not keep record of money flow suggested that the ratio of households with a desire to know about financial management is relatively high.

The results in Table 3.34 pointed out: 33.5% households know about or have need for microcredit. The discussion reflects that the better the economic status of the household, the higher the lack of desire to have credit. The reason is that the more money the people have, the higher their expectation for money to be kept in the house (in relation to Table 3.33)

In summary, the financial management of the household in the villages is mostly based on the traditional habit of the ethnic minority from a long time ago. The habit is that the wife is the one to keep money, and cash of almost all households is kept at home. Approximately half of the households have a desire to know more about financial management, even though more than half of the household do not want to have microcredit.

3.12. Market and market access

3.12.1. General information

From the information about the products, the income from production and life activities of the local people primarily belong to one of these two kinds: one is the provision of materials and equipment for growing coffee; the other one is the consumption of coffee beans.

Table 3.35. Percentage of households corresponding to coffee trading indicators

Regions	Types of coffee for trading		Bound to trade		Buyers	
	Cherry	Others	Yes	No	Others	In the village
Lac Duong Town	97.2	2.8	37.0	63.0	37.6	62.4
Da Nhim Commune	97.4	2.6	59.1	40.9	36.1	63.9
Da Chais Commune	96.7	2.3	45.3	56.7	16.5	83.5
Total/Average	97.1	2.9	48.5	51.5	30.0	70.0

Firstly, the market supplies material and equipment for planting, caring and harvesting coffee, including fertilizers, plant protection products, veterinary medicines, transportations, caring and harvesting coffee beans. Other materials include seedlings, and varieties are mostly self-produced by the local people. However, more than 90% of the cost for producing coffee is for buying fertilizers (Section 3.11.1). Among the fertilizers, inorganic fertilizer NPK is the

majority and rarely any households use manure as an additional. Inorganic fertilizer is provided by the company to the dealer and is transported to the villages. The local people only need to carry the fertilizers from their house to the plantation.

Secondly, the results from Table 3.35 indicated: The kind of coffee traded to the middlemen is cherry, accounting for 67.1% of all households in the area. This percentage is almost the same for all places, meaning the cherry as traded product is currently "common rule". The reasons concluded from the discussion with the local people are: (i) the lack of space for sun drying the products and storage; (ii) private lenders as buyers of cherry because they are creditors; (iii) the immediate trading after harvest due to the concern of the people about devaluation.

Thirdly, in terms of coffee bean market consumption (Table 3.35): Coffee beans is usually purchased by companies through private middlemen as mediators. The purchase is conducted directly at the villages (shops) with the participation of averagely 70% households. According to Table 3.35, the remoter the area is from the center (Dalat) the more the households are bound to the middlemen. The middlemen directly and quickly buy at the households' crops. The price is determined by general agreement of both parties; however, the sellers are also owner of loans so the buyers may conduct price squeeze on the sellers. 48.5% of the households answered they are completely or partially bound to the buyers.

3.12.2. People's market access

+ Market for trading equipment, materials, tools, and consumer goods in the regions

People usually know the places in which they can sell agricultural materials other than the shops in the village (mostly in Dalat City). However, the access to these places runs into difficulty because the locations are far from the living and working area of the local people. On the other hand, according to the people, the prices of materials at these places is lower than in their village, but the payment has to be made by cash at once. It is difficult to purchase them at the places due to the habit and the financial capability of the local people who are accustomed to buy on credit at shops in the villages or purchase by coffee after harvest. The interest rate for buying on credit is 25-30% with the term of 10-12 months.

Most households growing coffee in the villages buy agricultural materials on credit, but do not know the market price of these materials. Unsecured "loan" is an advantage of this form. Some households even think that this is a form of "investment" and the households "invested" have the responsibility to sell the product to the shops/agents that sold the materials.

Because the households growing coffee are bound by the commitment to pay off the credit after coffee harvest, most of them have to sell the products to the agents/shops they borrowed money/fertilizer. The purchase price of coffee by these agents/shops is usually lower than the average by 100-200 VND/kg. After loan deduction, the purchase price can be raised. The investment loans for coffee have to be paid by coffee beans. The loan for living expenses can be paid by cash.

+ Status of in-kind exchange, and borrowing of the households

Table 3.36. The average in-kind loan of the household groups in the whole area

HH groups	Food loan		Fertilizer loan		Method of
	(HH)	**(kg/HH)**	**(HH)**	**(kg/HH)**	
Poor	110	260	75	465	Coffee beans
Near-poor	159	360	105	690	Coffee beans
Medium	202	330	158	1110	Coffee beans
Better-off	23	510	37	1180	Coffee beans
Total/Average	495	330	375	935	//

In fact, many households make loan for various purposes from different shops on various amounts of money and properties whenever necessary. People reported that some shops lend a small amount without any condition and a large amount based on the ability to repay, which is mostly tied to the areas of coffee cultivated land.

Some comments on the status of in-kind exchange and borrowing of households by economic status in the regions are demonstrated by the results in Table 3.36:

- The number of households borrowing food (rice) is higher than that of borrowing materials (fertilizer). 47.2% on average of the households borrow food and 35.7% borrow fertilizer. In sum, 50% of the households in the villages have property loan (both food and fertilizer).

- The food loan proportions of the poor, the near-poor, the medium, and the better-off are 69.6%, 54.3%, 44.1%, and 16.5%, respectively. As can be seen, the poorer the economic status, the higher the percentage of household with food loan, and the better the economic status, the higher the average amount/HH. For fertilizer, most of the borrowers are the near-poor and the medium. The poor and the better-off less borrow fertilizer, and the medium and the better-off borrow larger quantity. 100% of the poor have property loan (either/both food or/and fertilizer).

- With either food or fertilizer, the payment of the borrowers to the loan owners is converted to coffee beans. Food loans are repaid after one to three months (if cash is available), fertilizer loans are repaid after six months to one year (from the time of borrowing to coffee harvest). Upon coffee bean harvest, loan amount (after adding interest) is converted to a volume of coffee beans. After the loan is paid off or almost paid off, the local people can immediately request for more loan.

In summary, the market for materials, agricultural equipment and commodity products (coffee beans) is the shops in the villages. They take control of the 1/3 of households in the villages in terms of the quantity of goods exchanged. All economic groups are bound to the shops to a certain extent; however, the poor, near-poor and medium are bound more heavily in both number of households and the quantity of property exchanged.

4.   DISCUSSION

4.1.   Significant indicators

This section is intended to present a summary of important information about the villages, including 2 main indicators: (i) the number of households (the number of actual households with income corresponding to the reported indicators), (ii) average income/household (average of the corresponding indicator on the number of actual households at the time of the survey).

Table 4.1. Summary of some important information of all villages in the whole area

Item	Da Nhim			Lac Duong		Da Chais	
	Da Ra Hoa	Da Blah	Da Tro	Bnor B	Bon Dung	Klong Klanh	Dung K'si
No. of HH surveyed	185	111	152	190	153	180	78
No. of HH in the village	194	121	164	212	186	207	89
HH member/HH (person)	4.9	4.8	5.3	4.0	4.2	4.4	4.2
HH with agricultural land	175	106	137	168	123	178	77
Land area (ha/HH)	0.84	1.10	0.87	0.75	0.55	0.75	0.66
HH with Red Book	75	49	65	93	90	33	8
Area in Red Book (ha/HH)	0.71	0.88	0.64	0.73	0.46	0.65	0.68
HH with income from coffee	170	106	135	156	112	169	67
Area of coffee (ha/HH)	0.70	0.87	0.65	0.59	0.45	0.57	0.45
Income from coffee (million/HH)	20.9	25.5	19.8	34.6	20.4	15.0	10.7
HH with legal coffee land	72	44	60	78	72	31	8
Area of legal coffee land (ha/HH)	0.62	0.77	0.54	0.64	0.37	0.61	0.54
HH with income from annual plants	0	0	4	21	27	0	0
Area of annual plants (ha/HH)	0	0	0.52	1.10	0.38	0	0
Income from vegetable (million/HH)	0	0	95.0	167.5	122.4	0	0
HH with income from animal husbandry	5	5	7	11	15	2	4
Income from animal husbandry (million/HH)	11.6	11.1	44.3	24.4	13.9	4.3	6.4
HH with income from hired laboring	97	57	88	149	121	95	45
Income from hired laboring	14.5	20.6	16.3	45.1	43.7	23.4	13.6

Item	Da Nhim			Lac Duong		Da Chais	
	Da Ra Hoa	Da Blah	Da Tro	Bnor B	Bon Dung	Klong Klanh	Dung K'si
(million/HH)							
HH with non-agricultural income	105	63	102	154	135	105	46
Non-agricultural income (million/HH)	17.1	24.9	21.5	49.5	50.1	26.3	16.1
Contracted households	146	91	109	45	25	148	71
Income from contract (million/HH)	9.1	8.7	8.7	9.9	8.8	15.2	15.3
HH collecting NTFPs	60	16	79	54	65	115	58
Quantity of products (kg/HH)	36.4	37.3	47.3	20.9	9.4	33.1	26.0
HH with income from NTFPs	3	6	24	6	5	73	45
Income from NTFPs (million/HH)	1.1	10.9	3.8	2.2	4.6	3.6	3.9
JICA HH	86	71	49	73	40	//	//
Total income (million/HH)	38.5	47.5	41.2	103.9	88.1	44.3	34.6
Agricultural production cost (million/HH)	16.6	18.6	14.3	38.0	25.0	17.4	7.3
Living expenses (million/HH)	29.8	41.4	34.5	65.0	52.7	35.0	28.3
Total cost (million/HH)	46.4	59.9	48.8	103.0	77.7	54.4	35.6
HH with bank loan	148	83	94	134	108	82	46
Loan amount (million/HH)	37.4	49.1	37.9	64.4	72.1	26.1	20.7
HH with loan from private lenders	97	50	56	53	28	23	15
Loan amount (million/HH)	23.6	40.3	20.4	22.5	12.2	14.7	16.1
Total no. of HH subject to loan	164	97	114	147	118	96	52
Total loan (million/HH)	47.7	62.8	41.3	66.9	68.9	25.9	23.0
HH with food loan	81	38	70	67	39	137	63
Amount of food loan (kg/HH)	259	293	287	588	416	273	317
HH with fertilizer loan	25	25	24	93	48	111	49
Amount of fertilizer loan (kg/HH)	828	1114	683	1495	1248	577	462

4.2.   Discussion of some issues

First of all, the report identifies some issues related to the production and life of people in the surveyed area. To cope with the objective of the project, these issues focus on the livelihood of the households.

One, there is a difference between economic groups, especially between the better-off and other groups in average income/HH.

Income from farming of the better-off is 111.2 million/HH, while the same income of the poor is 4.4 million/HH and of the near-poor and the medium is 11.8 to 25.1 million/HH; the total income of the better off is 175.7 million/HH, while the statistics of the poor is 19.8 million/HH and of the near-poor and the medium is from 35.5 to 53.5 million/HH; the fact suggests that the difference between two adjacent groups (the better-off and the medium) is 3.3 times.

The reason for the difference between the better-off and other groups is not the number of members and the number of labors of the households but the agricultural land (1.33 ha/HH in comparison to 0.47 to 0.74 ha/HH of other groups) and the methods to earn income (sources of income, the capital for production). The discrepancy is most obvious in Lac Duong town (the difference of the total income between the better-off and the medium is 3.3 times), followed by Da Nhim and Da Chais communes (2.8 times difference).

The discrepancy between the better-off and other groups leads to a consequence that the poor, the near-poor, and the medium work as hired labors for the better-off, and the better-off works for each other. The more obvious the discrepancy, the higher the rate of hired labor (for earning income), specifically the rates are 78.7% in Lac Duong, and 54% in Da Nhim and Da Chais. The motivation to work as hired labors of the poor and the near-poor is to meet the basic life demands (barely enough for living), and the motivation of the better-off is to have more income (for savings).

Two, none Red Book land accounts for a large area; however, the percentage of Red Book granting is high

964 out of 1049 surveyed households have land for production (762.1 ha), averagely 0.79ha/HH, in which 411 households possess land and have land use right certificate (LURC or Red Book) partially or completely with an area of 273.8 ha. Thus, 42.6% of the households have Red Book of the land and the percentage of land with LURC is 35.9% of the total average land area (of three areas). The status is different in three areas: Lac Duong town has the highest rate of households with LURC (62.2%), followed by Da Nhim commune (45.2%) and finally is Da Chais Commune (16.1%). The situation leads to two contradictory tendencies (according to the conclusions from group discussion):

- Granting Red Books to the households makes them the real owners of their land and feel safe in production. LURC gives them the chance to have unsecured book for large amount of loan at commercial banks. The fact that households in Lac Duong town can borrow and borrowed more money than households in two other areas is an obvious evidence.

- However, LURC is also a preliminary condition to sell their land, because the land buyers want to buy from households with LURC. The land selling status of the ethnic minorities to Kinh ethnic people is previously popular in Lac Duong town and now spreads to Da

Sar, Da Nhim and Da Chais communes, so the government has to consider granting LURC to minority ethic households. A discussion in Da Nhim and Da Chais leads to the consequence of "no more Red Book granted because it enables the people to sell their land".

Thus, the solution for the conflict cannot be reviewed from one side (neither the people nor the government). The issue is whether or not to grant the LURC to remaining lands for the households.

Three, agricultural area in the remote area cannot be controlled

The average agricultural area/HH is 0.77 ha, in which the area for growing coffee in or near the villages is about 0.63 ha. The agricultural lands are either LURC granted or no LURC granted. The income from coffee in this area may not be enough for the annual cost (because the average income from coffee is 21.7 million/HH, an equivalent of 0.63 ha/HH). The above situation urges the people to find lands for agriculture (coffee and food) in different locations, even far from the living area. In the group discussion about the distribution of agricultural land in the areas remote from the villages, every village confirms the existence of different agriculture locations (for example, Klong Klanh village has 21 different locations). These areas are either not reported in the survey, or reported but the statistics is incorrect. The issue leads to:

- The vague information about the agricultural land area of each household in a certain location and the total area of different locations in the area of each village, each household.
- The calculation of agricultural area of the households in the villages is incorrect and insufficient, which brings about the inaccurate total average income of the households in a year.

However, the problem is that the control of a household's agricultural area in different locations does not necessarily suggest the control of the household's income. Once agricultural plants provide products for the market or for the households, the welcome by both market and households is a positive sign, while the reverse is a challenge. More agricultural land cannot assure a better economic status.

Four, the poor households depend too much on the forest

In the surveyed areas, the poor and near-poor are the households with limited land, either lack of labors or have labors whose health is too poor for production. In the surveyed area, the main income is from PFES and NTFPs collection. PFES contract brings about a stable income (11-15 million/HH/year) and accounts for a large proportion in the total income of the poor (60%) and the near poor (35%), especially in Da Nhim commune and Da Chais commune. The positive aspect of the income from PFES contract is that it helps the local people to have a stable income all year round. The poor households with no land or limited land in the area have great expectation for this source of income and think of it as the easiest income. The fact leads to:

- The poor households rely on the PFES every quarter of the year, and willing to borrow money/ materials from shops, which will be repaid by PFES. Therefore, the local people lack motivation for production (cultivation and animal husbandry).

- The poor households with PFES contract are also those to collect NTFPs most. The income or food from the forest is by chance because this resource cannot be controlled (due to natural conditions, labor and health).

Thus, the issue is to reduce the dependence of the poor and the near-poor on collecting NTFPs.

Five, the livelihoods of the household groups depend too much on coffee

The coffee cultivation in Da Nhim and Da Chais communes is conducted in the form of monoculture. Coffee is the only major source of income for many households. As a result, the cultivation of coffee is the major production activity of most households in the areas. The advantages and disadvantages of agricultural production with coffee need to be examined in two aspects:

- First, the monoculture of coffee enhances the farming intensity of the plant and lead to an increase of land use coefficient and economic efficiency of the plant. In Lac Duong District in general and Da Nhim and Da Chais, two communes living on coffee, in particular, the economic status of many households has been improved thanks to coffee. This is a positive aspect of intensive crop of coffee.

- Second, for the current coffee trees, the seedlings remain unchanged, the applied techniques are almost unsuitable for cash crop, the investment for producing coffee is limited in poor households (for example, insufficient fertilizer). These issues lead to the reduction and difference between household groups in coffee yield. For instance, the gap in income from coffee between the medium and the near-poor, and between the better-off and the medium is two times.

Besides, in addition to failures due to hail, drought, pest and disease, in three recent years (2013-2015)[8] the price of coffee beans has dropped, which results in the lack of economical motivation of the farmer to grow new coffee trees or even to remove coffee trees to grow technological vegetables. The removal of the trees is a waste, and the transfer to technological vegetables can be spread to the poor and the near-poor households. The depressed prices of coffee beans in an area with 88.4% of households having land for coffee and coffee as main source of income are a serious problem.

The farmer-field-school (FFS) method from EFLO model has been experimented in 5 villages in the area. Even though the method is assessed to be economically efficient, the extension of the techniques taught to the participants in the EFLO to every household and in every location is not an easy task. Therefore, coffee yield is not high due to not only natural conditions (soil, slope), but also the issues raised within the coffee grower community (applied technique, capital).

Six, the market for coffee bean depends too much on shops

Many activities such as buying, selling, materials, goods, and money exchange are mostly done at shops in the villages. The advantages of these shops that were admitted by the people are: convenient for the households, easy procedure, quick and on time, and proper for every

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[8] The coffee price in Lac Duong increased to 118.1% in 2013, but decreased to 91.2% in 2014 compared to 2010 (Annual Abstract of Statistics, Lac Duong District, 2014)

household. The disadvantages are: bound to sell products (coffee) to the shops, leading to price squeeze, and increase in loan interest. Thus, it is important to reduce the dependence on the shops and escape price squeeze when selling coffee.

However, for people in Da Nhim and Da Chais, price depends on middlemen as they collect coffee and sell to large companies. They take initiative to lend the households money, properties (food, fertilizer) and bind the household to payment by selling coffee to lenders; therefore, people are completely dependent on them. This fact creates an enclosed market for materials and agricultural product exchange between the shops and the households. If villagers can access to financial resources, fertilizer and direct sales to companies, dependence on shops shall reduce.

Next, selling cherry products is due to lack of space for sun drying or equipment to dry coffee. However, a sole focus on the production of drying equipment is not enough for a success because of: (i) coffee yield of a village or an area is a large quantity, (ii) coffee yield is seasonal (mostly on October, November and December), while a large quantity cannot be dried in a short amount of time.

Seven, the households are too financially dependent on private lenders (shops) in both money and property borrowed, short term and long term, leading to the sale of coffee beans to shops.

Reason: the people do not have money or do not have cash, while the shops take one-way interest (beneficial for the shops, unbeneficial for the people). The loan contract is unclear which is beneficial for the lender and cause disadvantages for borrower.

- First, in comparison to borrowing from banks, the number of households and the loan amount from private lender is lower; however, the percentages of loan from private lenders of 36.2% (the near-poor) and 31.2% (the medium), which is equivalent to 24 million/HH and 21.2 million/HH respectively, is also a pressure for the households under loan during the time they own the loan.

- Second, the dependence to the shops is originated from previous property loan, not only food (47.2% of the HHs) but also fertilizer (35.7% of the HHs), not only the poor (70.2% of the HHs) but also the medium (44% of the HHs). The fact that more than 60% of the households cannot pay off the loan at the end of the term is a challenge for the now and the future.

To reduce the dependence, first the people have to pay off the loan. They cannot do that right away but gradually by planning "terms" or having a specific plan for each household. The key for this situation is to reduce the dependence on private lenders, to transfer from property loan to goods exchange, and to offer more options for local people.

The solutions for each issue will be addressed in Section 5.2.

5.   CONCLUSIONS AND RECOMMENDATIONS

5.1.   Conclusion

Some conclusions of information from section 3 and the survey in target villages:

- Some important organizations for the development of the villages and the communities include: CPC, Banks, JICA project, Farmers' union, Women's Union, village leading members. Some having a great influence on the village are Farmers' union, Women's Union, Bank, JICA project; village leading members, CPC.

- The better-off group earns higher income from agriculture and non-agricultural activities. The poor and near-poor make income mainly from coffee cultivation, hired work and PFES contract. These groups have small income from husbandry and services. Half of the poor and near-poor households depend on natural forests for daily food consumption.

- Livelihood activities share common characteristics: (i) agriculture production includes cultivation of coffee, subsidiary crops and animal husbandry. Among non-agricultural activities (including hired work, trading and services), hired work accounts for the highest percentage of participants. PFES contract and NTFPs collection are the main livelihood of the poor group. (ii) Main livelihood activities are different by areas: in Lac Duong town, main income is generated from vegetable, coffee cultivation and hired work. In Da Nhim and Da Chais commune, it is from coffee cultivation, hired work and PFES contract.

- The efficiency of using land for agriculture is very high, in which 80% of the total agricultural land area is used for coffee cultivation. Land for vegetables and other crops has the highest rate of land with Red Book, followed by coffee land and finally is ancestral land. Coffee plantation has been established in monoculture form at Da Nhim and Da Chais.

- Among the livelihood activities of the households, the cultivation of coffee and vegetables provide consumer goods and brings about high income for the households. Coffee beans and vegetables create an "internal" exchanging market between the households and the shops in each area. The local people are bound in terms of selling agricultural products to the shops due to the loan agreement.

5.2.   Recommendations

Based on the discussion on each issue (Section 4.2) and the conclusions (Section 5.1), the report suggests six recommendations corresponding to seven issued mentioned. These recommendations should be considered by both JICA project and the local government.

One, focusing on poverty reduction for the poor and the near-poor, and reducing the dependence on the forest

The effort of poverty reduction is the target of many policies of the state and local government. Therefore, the recommended solutions for the poor and the near-poor is to facilitate the policies. The reduction of the poor and the near-poor households on the forest is not the prevention of accessing the forest but to offer more jobs to reduce the risk from depending on food and income from the forest.

The suggested solutions for poverty reduction for the poor and the near-poor is specifically mentioned as follows:

- For the government: To implement agricultural land granting for the poor and the near-poor who do not have land. The prioritized households are the households with enough labor for production. Based on the ability to gain income from the land, the land area granted of about 1 ha/HH (4-5 people) is a preliminary condition for the households to have income from the farming in the land.

- For the project: Besides granted land by the government, the poor households usually do not have capital for production. The solution is that VDF is prioritized to the poor to borrow larger amount of money, instead of granting every household the right to borrow (a small amount) the money is now granted to the poor (a larger amount).

- These two solutions can be solidified by solutions to support villagers to control land and capital, which means to prevent them from selling their land or using capital for other purposes probably by keeping the Red Book and directly giving the materials for production (fertilizer). The implementation requires the involvement of the local government and agreement of the community.

- Next, to make the newly granted land households the ones earning from their land shortly afterward, the plantation should not begin from coffee only but from combining coffee crops with other plants. The recommendation is to grow coffee with food crops in at least two first years to solve the immediate food source, which is appropriate to the natural and social conditions of the area.

Two, granting LUR for the household

Da Nhim commune and Da Chais commune, two areas with lowest rates of household and land ownership, are prioritized to be granted LURC for agricultural lands. The methods are:

- Granting gradually for each household group, beginning from the poor to the near poor and the medium considering land as a foundation for generating or increasing income by crops on the land.

- Granting for each area of the households, restricting the simultaneous granting of LURC to different areas of a household. The main purpose is to restrict the thought of "having more, selling more" of the LURC owners.

- To retain people's land ownership, the commune authorities should require all transactions relating to land to be passed by the commune authorities. The prevention of selling land must be implemented by the authorities, not individual households.

Three, controlling the remote agricultural area by local authority

The identification of households' agricultural land must be done by some measures. The application of GIS as reported (Section 3.3) is only preliminary. GIS shows the agricultural land locations of each village with possibly defined total area, but undefined area of each household. Subsequent measures for implementation are:

- To identify gradually each area or each village. It is better to identify an area than a village because users of agricultural lands that are far away from the village may belong to several villages.

- Total area must be defined in person. The total area is estimated before identifying the number of households working on the area. If possible, measuring and calculating the total area of each household should be conducted before summing the total area of an area.

- Along with measuring the area is the task of collecting information about the area of the land, land use time, and existing crops to serve as basis for granting Red Book (if possible). The task can be done by face-to-face interview with land owners.

Four, reducing the dependence of the households on coffee

The solution for diversify the monoculture of coffee is not to take down coffee trees but to grow coffee in combination with other plants. Short-term trees are a temporary solution and perennial trees a long-term strategy for households. In this regard, there are to recommendations:

- Growing short-term plants (corn) in coffee farms or newly planted coffee farms (one to two years);

- Growing fruit trees in coffee garden, and replacing the removed coffee trees by fruit trees. From the experience concluded from combining trees (UNREDD project) in Da Chais, fruit trees should be passion fruit, and other kinds like mulberry or tea; jackfruit and grape fruits (orange, grapefruit) are considered to be less suitable to the area.

Because coffee is still the main source of income for the households, the solution to combine kinds of plants should only be carried out for the poor and the near-poor (at the same time with the first group of solutions)

Five, raising profits in coffee cultivation

This is the most difficult solution to be implemented in current situation and conditions of the area, because: (i) it involves other people (not households producing material goods), (ii) it involve most of the households, both poor and rich (more than 60% have unpaid property loan), and (iii) this is a long-term strategy and cannot be implemented in only a few days.

+ Some suggested solutions:

- Raising the price of each type of coffee bean based on its quality. The quality of coffee depends on the varieties, harvest and processing techniques. About the variety, people only grow one type of coffee, which is catimor, in the area. The requirements of the current market mostly base on "harvesting and processing". Local people can search for new species and improve cultivation, harvest and processing techniques to access market with higher values.

- Diversifying coffee consumption can be made by: (i) Gathering a group of ethnic households to buy coffee with the initial support from JICA (capital) or from local micro-finance organizations; (ii) Committing to buy products of local people and urging them not to sell the products to the shops; (iii) Implementing repeatedly in several years to gain trust from local people, and make the shops realize the competition to change their approach.

- To solve the price squeeze problem, the solution suggested by local people is to have a company purchasing and signing an output contract. The company also has the responsibility to provide initial materials and ensure the quality and the timeliness. The management board or the producing team of the villages is responsible for selling the agricultural products of the villages to the company and the price will be agreed upon market price.

  Six, reducing loan from private lenders, borrowing from other resources (banks, NGOs, micro-finance institutions if possible)

- The reduction of property loan for agricultural production (e.g. fertilizer loan) can be conducted by: (i) To have a fund that lend money for fertilizer managed by local government or producing group of the village, (ii) There must be contract between the seller and the buyer for loan with private lenders.

- - Accumulation of funds for long-term production of coffee. Because the local people have to pay the interest and the principal sum right after selling coffee, they do not have savings. The immediate radical solution for most households is that instead of repaying once (after harvest) with high interest, they can pay in installments with lower interest. Of course, households need to have detailed plan for long-term payment during years.

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