

**MINISTRY OF AGRICULTURE & RURAL DEVELOPMENT
LOW CARBON AGRICULTURAL SUPPORT PROJECT
L2968 - VIE (SF)**



CONSULTING REPORT
20TH PROCUREMENT PACKAGE:
**“NATIONAL CONSULTING ON CREDIT FOR
BIOGAS VALUE CHAINS”**

Hanoi, 2016

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LIST OF ABBREVIATIONS

ADB	Asian Development Bank
Agribank	Vietnam Bank for Agriculture and Rural Development
APMB	Agricultural Project Management Board
PMU	Project Management Unit
MARD	Ministry of Agriculture and Rural Development
CDM	Clean Development Mechanism
CoopBank	Cooperative Bank
CSAWMP	Climate Smart Agricultural Waste Management Practices
CPMU	Central Project Management Unit
FIs	Financial Institutions
NBP	National Biogas Program
VBSP	Vietnam Bank for Social Policies
LCASP	Low Carbon Agricultural Support Project
LIFSAP	Livestock Competitiveness and Food Safety Project
PFI	Provincial Financial institutions
PPMU	Provincial Project Management Unit
QSEAP	Quality and Safety Enhancement of Agricultural Products and Biogas Development Project

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1. RESEARCH OVERVIEW

1.1. INTRODUCTION ABOUT THE RESEARCH

1.1.1. Introduction about the LCASP

a. General information

- **Project title:** Low Carbon Agricultural Support Project (LCASP)
- **Sponsor:** Asian Development Bank (ADB)
- **Governing management agency:** Ministry of Agriculture and Rural Development (MARD)
- **Project provinces:** 10 provinces including Son La, Lao Cai, Phu Tho, Bac Giang, Nam Dinh, Ha Tinh, Binh Dinh, Tien Giang, Ben Tre and Soc Trang
- **Duration:** 6 years, from 2013 to 2019, account closed on June 30th 2019
- **Total budget:** 84 million USD, including 74 million USD borrowed from ADB, and corresponding capital from the Government of Socialist Republic of Vietnam is 3.7 million USD; and capital from financial institutions is 6.3 million USD.

b. Project objectives

❖ Overall objectives

Build an agricultural production industry that is sustainable, efficient and environmental friendly through the promotion of construction/ replication of research models and transfer of technology in agricultural production towards emission reduction of greenhouse gases and adaptation/ mitigation of climate change impact, efficient use of natural resources, agricultural by-products, effective management of processing activities, post-harvest preservation for agricultural products.

Minimize environmental pollution caused by agricultural waste through the expansion and development of the household biogas program, from small-scale to medium and large scale, to create clean energy sources; improve livelihoods and enhance the quality of life for rural people.

❖ Specific objectives

Improve livestock waste management and by-products management in biogas production step by step; reduce environmental pollution; contribute to the sustainable development of household husbandry and farming; generate clean energy sources; improve livelihoods and enhance the quality of life for rural people; generate revenues from the CDM projects.

Apply low-carbon agricultural production technology in aquaculture and cultivation, which has been confirmed effective in the world, tested in the conditions of Vietnam and selectively replicated in models of cultivation, livestock and aquaculture in order to enhance economic efficiency, respond/ mitigate the impact of climate change and reduce greenhouse gas emission.

c. Project contents

The project consists of 4 components:

- Component 1: Livestock waste management
- Component 2: Credit for the biogas value chain
- Component 3: Technology transfer in low-carbon agricultural production
- Component 4: Project management

Within the framework of the project, the project will provide technical and financial assistance for the construction of 36,000 small biogas plants, 40 mid-sized plants and 10 large plants. To achieve that goal, the project will boost the capacity of low-carbon agricultural development approach with credit funds through financial institutions and the support of the national policies, strategies and programs. The credit line for biogas value chain infrastructure will be through 02 state financial institutions including Vietnam Bank for Agriculture and Rural Development (Agribank) and Co-operative Bank (Co - op Bank).

1.1.2. An introduction to the component of credit for biogas value chains

In the component of credit for biogas value chain, the project will (i) provide credit through the financial institutions to support the expansion and improvement of infrastructure in managing biogas value chain until 2018; (ii) ensure that women will be given priority in borrowing and setting up bank accounts in financial institutions

until 2018; (iii) supervise the disbursement of the carbon market promotion for biogas basements completed by financial institutions till 2018. The credit will be provided through 2 financial institutions including Cooperative Bank (Co-op Bank) and the Vietnam Bank for Agriculture and Rural Development (Agribank) for farmers and agricultural enterprises to build biogas plants, including relevant items like the water supply systems, the gas pipelines, the gas using devices, the environmental remediation items, storing items, waste residue moving and processing into organic fertilizer, ... The expected credit sources of this component will be implemented in 10 provinces of Bac Giang, Son La, Phu Tho, Nam Dinh, Lao Cai, Ha Tinh, Binh Dinh, Ben Tre, Tien Giang, Soc Trang. The conditions and terms of the loan from the Ministry of Finance to the 2 financial institutions will be made in VND, with duration of 32 years and grace period of 8 years. ADB will finance 85% of the total funds for the construction of biogas projects; the financial institutions will fund the remaining 15%. Interest for loans from the Ministry of Finance to the 2 financial institutions will be equal to 85% of weighted average interest rate of 3, 6, 12 month - deposit of 5 state-owned commercial banks and the Cooperative banks, which are announced quarterly by the State Bank of Vietnam to the Ministry of Finance. Interest for re-loans from the 2 financial institutions to eligible borrowers is no more than 90% interest for normal agriculture loans at lending time, ensuring that appropriate borrowers are able to access and repay the financial sources for biogas value chain and necessary environmental items. About 36,050 additional loans for farmers and enterprises will be provided to construct biogas plants and apply clean agricultural production technology into cultivation, husbandry and other agricultural waste.

But after 02 years of project implementation, 02 financial institutions have disbursed credits for biogas value chain with a very little amount. Until now, the Bank for Agriculture and Rural Development has disbursed 3.374 billion from ADB's capital (Bac Giang disbursed 1.429 billion for 36 sites, Lao Cai disbursed 1.945 billion for 144 plants). With regards to the Co-op Bank, according to a newly provided information from the Central Co-op Bank, they have disbursed 2.5 billion VND at Binh Dinh branch.

1.1.3. Survey objectives

Overall objectives: To review credit demand for biogas value chain and the implementation of credit products of biogas value chain of the two financial institutions. Then determine the findings, proposals to adjust credit products to meet the needs of users and promote the progress of the project

Specific objectives:

- + Assess credit needs for biogas value chain among households and enterprises over 10 provinces.
- + Study the status of the 2nd component of the project in 02 banks and the difficulties in the disbursement of the 02 financial institutions
- + From the research results, the consultant will make recommendations to enhance the disbursement for financial institutions.

1.1.4. Work scope of the consultant

➤ **Task A:** Setting up plans to work with methodology and support approach with limited time, and specify the data that needs to be collected, as well as how this data is managed and evaluated. The work plan will provide a detailed sampling plan about the households in each province and provide some minimal samples of SMEs and commercial enterprises.

➤ **Task B:** Carrying out interviews with entities, financial institutions, enterprises; discussing with the National Biogas Program (NBP) and surveying the households that have searched or are searching ways to invest in biogas technology at 10 project provinces including Bac Giang, Ben Tre, Binh Dinh, Ha Tinh, Lao Cai, Nam Dinh, Phu Tho, Soc Trang, Tien Giang and Son La.

➤ **Task C:** Making reports on the findings about credit demand for the value chain technology, and the types of product meeting the needs recommended or preferred. The data must be presented and reported separately by province, by size of the technology and the number of people interviewed (households and enterprises) that have or do not have credit demand for biogas. For the case of households, the data

must include the number and characteristics of the households (e.g., separately by income and other social characteristics such as households owned by women).

➤ **Task D:** Completing a brief report about the position of PFI to the proposed level of demand and the ability to prioritize for credit products.

➤ **Task E:** Briefly presenting the report about the findings of the demand for credit in a seminar for APMB, CPMU, NBP, the provincial financial institutions, and making recommendations to adjust existing credit products within the framework of the LACSP project.

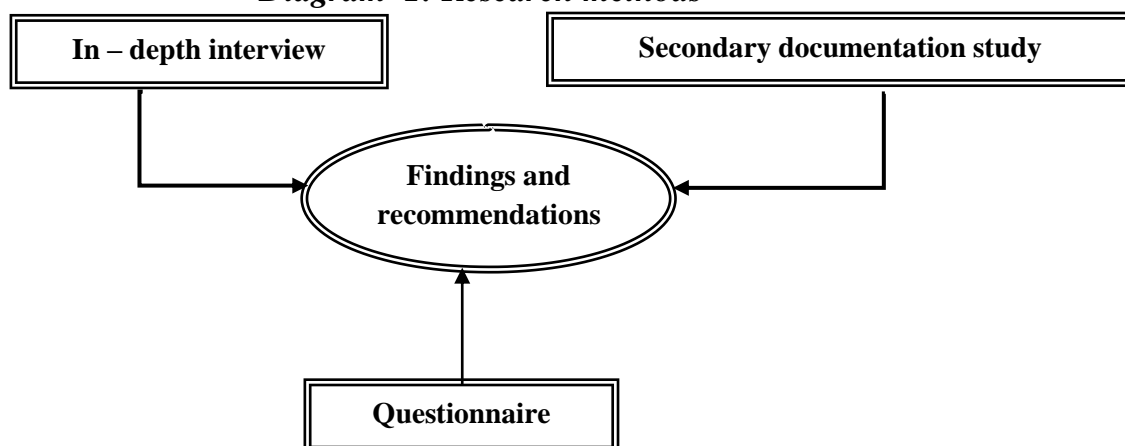
➤ **Task F:** Making reports presenting proposals to amend the existing credit products issued by the LCASP project.

1.2. RESEARCH METHOD

1.2.1. Methodology

To fulfill the research objectives, after studying the relevant documents of the project and the requirements of the terms of reference, the consultant determines to combine the following research methods: in-depth interviews, secondary document study and questionnaire survey. The data collected from those sources will be used for qualitative and quantitative analysis, of which the quantitative research plays an important role in making research results and recommendations for solutions.

Diagram 1: Research methods



1.2.1.1. Secondary document study

This approach was undertaken to collect information and secondary data serving the consulting. Secondary documentation sources were collected at various

different sources such as from the Central Project Management Unit (CPMU), the Provincial Project Management Unit (PPMU), from financial institutions ... The collection of secondary data is for 02 main purposes: (i) to learn the basics about the status of implementation of the biogas value chain in the project provinces, (ii) database, the legal basis that helps the consultants to complete the consulting report.

1.2.1.1. In-depth interviews

In-depth interviews were conducted with staff of the Central Project Management Unit (CPMU), the Provincial Project Management Unit (PPMU), the technical support board of the project, and the local technical staff... to learn about the general situation of the project implementation, the difficulties that local authorities encounter during the implementation of the project.

In-depth interviews were also conducted with the project managers of the 02 financial institutions including Vietnam Bank for Agriculture and Rural Development and Cooperative Bank of Vietnam. The in-depth interviewing of these 02 financial institutions will help the consultant to have an overview of the status of credit operations of the biogas value chain. Through in-depth interviews with financial institutions, the consultant deeply understands the difficulties and problems in the process of implementing credit activities in the local communities of the financial institutions.

On the other hand, to consider the possibility of participation of other financial institutions in the credit component of the project, the consultant will carry out in-depth interviews of potential financial institutions, microfinance programs or institutions operated over the region.

This method will also be used for small and medium enterprises, commercial enterprises to capture information about the credit needs of enterprises, as well as expectations about credit products at these enterprises.

In terms of content, the in-depth interviews will focus on judgment ideas and the recommendations of the interviewees. The questions are given in-depth interviews are open questions holding suggestions for interviewees.

1.2.1.2. Questionnaire survey

Questionnaire survey method is used for the purpose of collecting quantitative and qualitative information from households, small and medium enterprises and commercial enterprises. Within the scope of this consultation, the questionnaire was designed to carry out the survey through direct interviews.

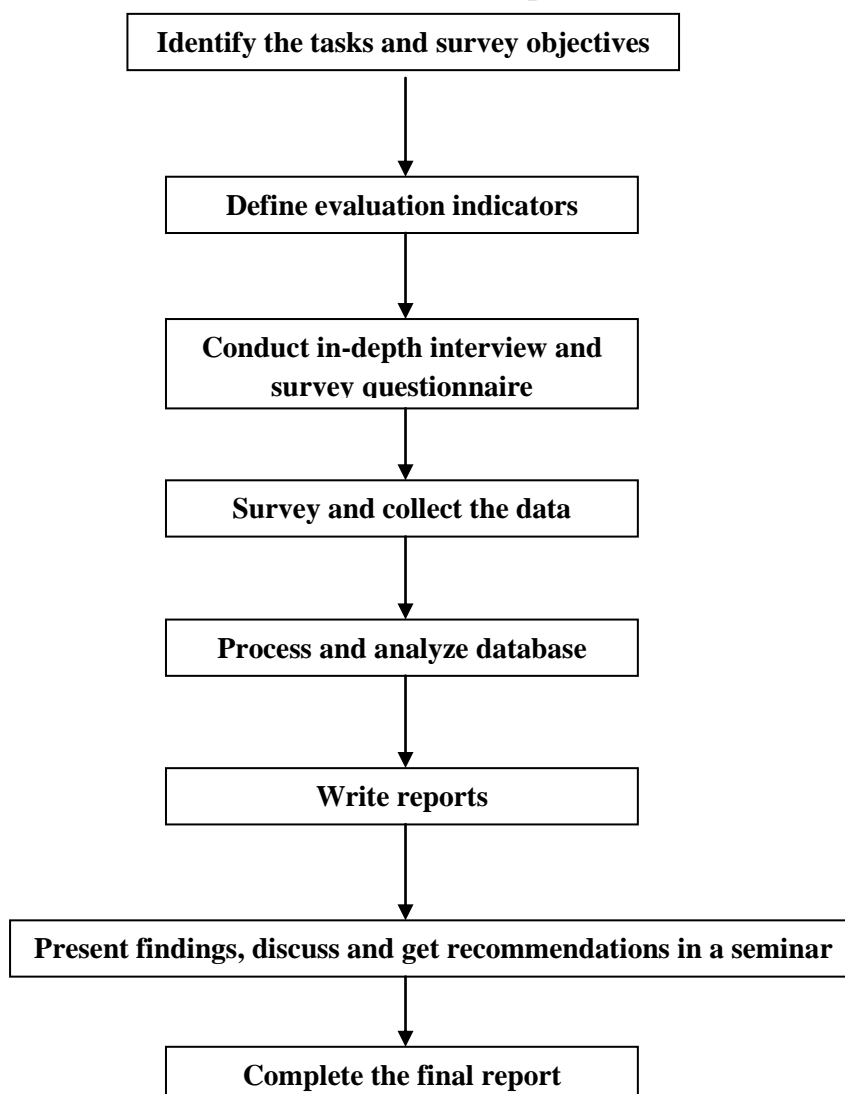
In the process of conducting surveys, the consultant along with support from the local project managers will conduct questionnaire surveys directly at households, farms and commercial enterprises.

1.2.2. Survey method

1.2.2.1. Consulting process

To accomplish the above tasks, the consultant will use multiple assessment methods based on evaluation criteria and measure indicators.

Diagram 2: Consulting process



Step 1: Identify the tasks and objectives of survey

The consultant will collect and study all secondary documents to deeply understand about all of the project’s components, as well as all the necessary activities to complete the task specified in the Term of Reference. The secondary documentation is collected throughout sources such as: proposal, project inception report, project assessment document, annual progress report, mid-term review report, lending agreement, project implementation manual, project management manual, disbursement manual of the 02 financial institutions including Agribank and Co-op Bank. In this step, the consultant will clarify the assessment objectives and tasks that need completing.

The survey objectives and tasks based on the Term of Reference and they may be adjusted by discussing with Central Project Management Unit.

Step 2: Define evaluation indicators

The measure indicators are defined based on the research goals:

Table 1: Measure indicators

Indicator groups	Measure indicators
Group 1: Information of biogas plants	<ul style="list-style-type: none"> – Size of biogas plants – Materials (bricks, cement, composite, HDPE) – The time needed for installation – Information sources of the LCASP (project’s staffs, friends/relatives, self – learning knowledge, television, media, other). – Project’s support (<i>credit, technical, cash support</i>) – Household participation in the training courses – Fields of training course (<i>installation, operation, warrantee</i>)
Group 2: Indicators to evaluate credit demand and sponsor sources	<ul style="list-style-type: none"> – Large enterprises – Medium enterprises – Households Evaluation indicators: <ul style="list-style-type: none"> – Demand for loans, loan amount and loan term – The total investment for the construction and

	<p>installation of biogas (... ..million VND)</p> <ul style="list-style-type: none"> – Initial funding sources for the construction and installation of biogas – The total amount of loan to be invested into biogas plants – The level of information received about the credit financing of projects – (If any) Where is the information source (communal radio, propagation, training courses, journalism, television), from banks – The level of information support from the project board to the households – Whether households (enterprises) has been instructed to access bank loans – Repayment source.
Group 3: Satisfaction level about biogas plants	<ul style="list-style-type: none"> – The level of satisfaction about product quality – The level of satisfaction about product prices – The level of satisfaction about product maintenance
Group 4: Satisfaction level about credit products from credit organizations	<ul style="list-style-type: none"> – Satisfaction about the access to information of the loan – Satisfaction about the credit funds – Satisfaction about the interest rate of the loans – Satisfaction about the loan maturity – Satisfaction about methods of repaying principal and interest – Satisfaction about the disbursement progress of the project
Group 5: Recommendations and solutions	<ul style="list-style-type: none"> – Recommendations for project techniques – Recommendations for credit services (credit limit, maturity, interest rate, principal frequency, interest rate frequency)

Step 3: Conduct forms of in-depth interview and survey questionnaire

There are two main tools to collect information. They are survey and in – depth interview questionnaire. Questionnaire is conducted based on the missing information which is necessary to fully collect.

- **Questionnaires for households, small and medium enterprises**

Based on secondary data and terms of reference, the consultant will be the questionnaire and adjustments accordingly to gather enough information to answer the evaluation criteria and indicators. The questionnaire will be unified and modified by all entities participating in the project and will be tested before field study. The questions will be designed to ensure that they cover all evaluation indicators, criteria and information of the project in order for the consultant to complete the consulting report.

- **In-depth interview guidelines**

In-depth interviews will be conducted by the managers of departments: the Ministry of Agriculture and Rural Development, representatives of the Central Management Board, representatives of the Technical Assistance Board, Provincial Project Management Unit, representatives of the provincial financial institutions, entities, microfinance institutions, programs, projects, representatives of commercial livestock enterprises, district project officers, ...

The in-depth interview guidelines will be developed for each target group participated. It includes open questions and suggests ways of thinking for interviewees.

Step 4: Survey and collect data

- **For quantitative information**

- The consultant will define the number of participants answering questionnaires in each area, which is suitable with statistical principles, to ensure the sample is objective and represent the whole. The sampling will be implemented in the district that has all 3 types of samples, households, medium farms and a large livestock enterprise.
- The consultant will conduct a trial investigation at the project region.
- The consultant will carry out direct interviews to each household.

- **For qualitative information**

The consultant will set up interview plans and agree with the CPMU to implement interviews based on guidelines prepared before.

- **For other secondary information**

The consultant cooperated with the PPMUs to collect necessary document arising in the process of the interviews.

Step 5: Process and analyze data

- **For quantitative data:**

The questionnaires will be tested by the consultant and the input staff, encrypted by order number, cleaned before entering the software to remove the non-valid value, information. If there are errors on the questionnaire more than 10%, it will be removed.

All questionnaires will be entered using SPSS 22.0 software.

- **For qualitative data:**

The recorded in-depth interviews will be transcribed. The handwritten interviews will be processed by grouping information from the evaluation topic to be used as additional information, interpretation, and judgment for the quantitative data.

Step 6: Write reports

After the data and information are collected from the interviews and survey questionnaires, the consultant will assess the data in both qualitative and quantitative methods before writing the report. In the process of evaluating and writing reports, if there is any missing information, or any conflicts, unclear point, the consultant will discuss with the provincial project management unit, two banking institutions to complete the draft report.

Step 7: A workshop collecting comments on the preliminary report

The workshop collecting feedbacks will be held after completion of the preliminary assessment report. The consultant will be responsible for presenting the report and absorbing ideas for the contents of the draft as well as the lessons built.

Step 8: Complete the final report

The consultant inspects review information to consider, modify, add to the report content; and complete the final report to be handed to the Central Project Management Unit.

1.2.2.2. Survey tools

- Questionnaire for households already installing biogas plants (Appendix 1)
- Questionnaire for enterprises not having install biogas plants (Appendix 2)
- Questionnaire for enterprises (Appendix 3)

1.2.3. Survey areas and targets

a. Survey areas

The surveys were carried out in the 10 provinces of Bac Giang, Ben Tre, Binh Dinh, Ha Tinh, Lao Cai, Nam Dinh, Phu Tho, Soc Trang, Tien Giang and Son La.

b. Survey targets

- Central Project Management Unit (CPMU);
- Provincial Project Management Unit (PPMU);
- 02 financial institutions (FIs): The Bank for Agriculture and Rural Development (Agribank) and the Cooperative Bank (Coop - Bank), the people’s credit fund and some available microfinance institutions, Vietnam Bank for Social Policy (VBSP), the local women's union.
- 10 large livestock enterprises
- 30 small and medium livestock enterprises that are eligible to support medium biogas plants
- Local technical officers who are in charge of providing biogas service
- 300 households that installed, or currently want to install biogas plants (including 100 households already having biogas, and 200 household having potentials to install biogas plants).

1.2.4. Sampling method

The consultant will use random sampling method based on the project data, to ensure that the evaluation sample will represent the whole.

The consultant will select one district in the province that focuses a great deal of households breeding livestock and using biogas for 30 questionnaire surveys. In the district, there are two communes to be selected; with the total number of households in need of biogas installation are 20 households and 10 other households already having

biogas. The selection of households surveyed in each commune is based on random selection with the following specific criteria:

- Households are in demand of biogas with at least 10 pigs and at least 03 cattle (buffalo, cow)
- Household has installed biogas through the LCASP

2. RESEARCH RESULTS

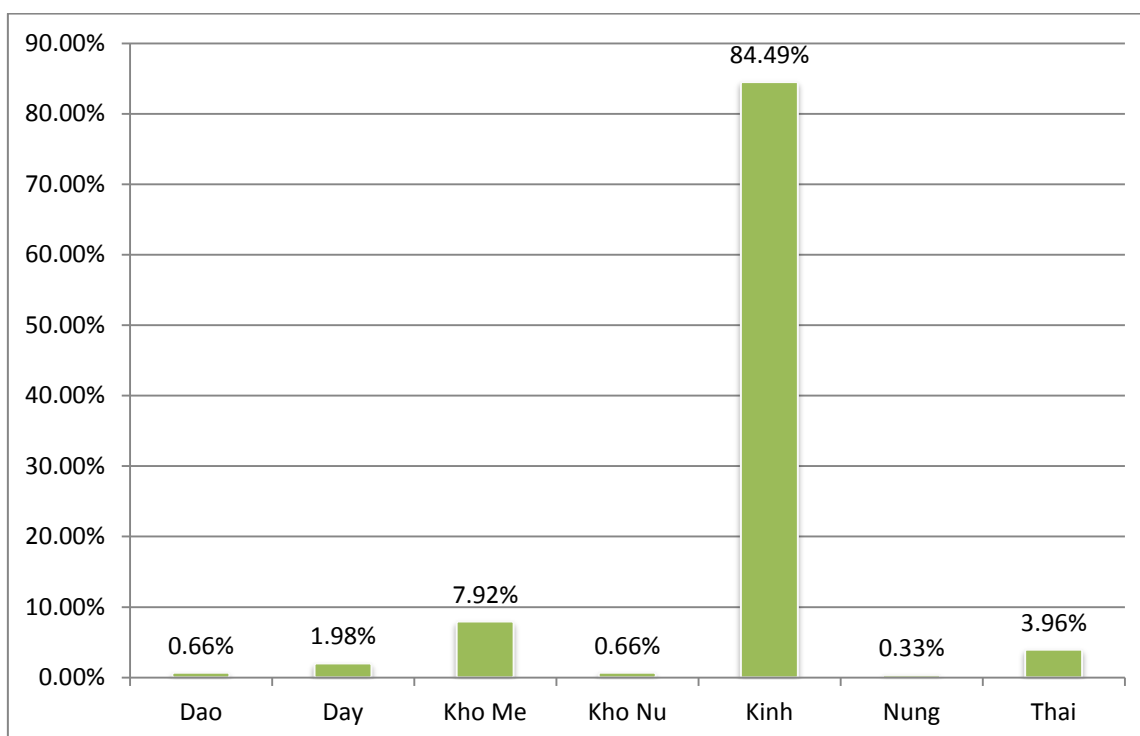
2.1. INFORMATION ABOUT THE SURVEY TARGETS

2.1.1. Some general information about the survey targets

2.1.1.1 Ethnicity, gender and age of survey targets

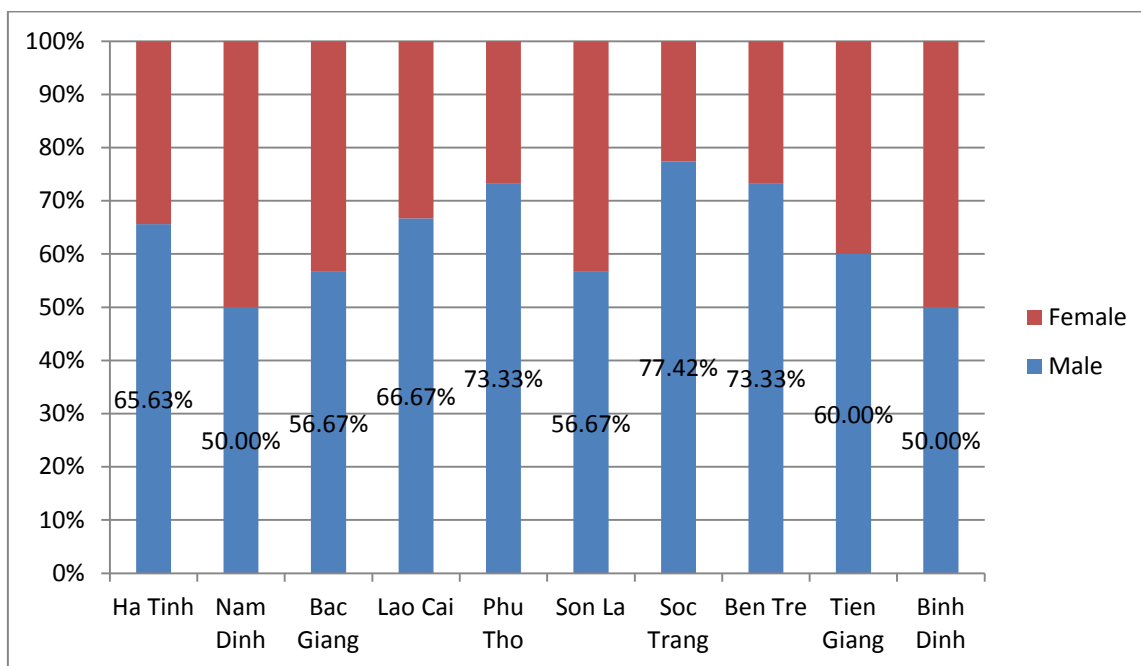
There were 300 targets surveyed, including 100 household already having installed biogas plants and 200 household with potential installation. Most of them are from Kinh’s ethnic group with the rate at 84.49%. Other ethnic groups like Kho Me, Thai, Dao, Day, Kho Nu, Nung account for a very small proportion. Kho Me households are mostly from Soc Trang province with the rate at 86.67%, Thai (40%) in Son La province. The rate of women participating in the questionnaires fluctuates from 22.58% to 50%. Nam Dinh and Binh Dinh province have the same of rate of men/women participating in the questionnaires.

Chart 1: Ethnic groups of people surveyed



(Source: Survey data)

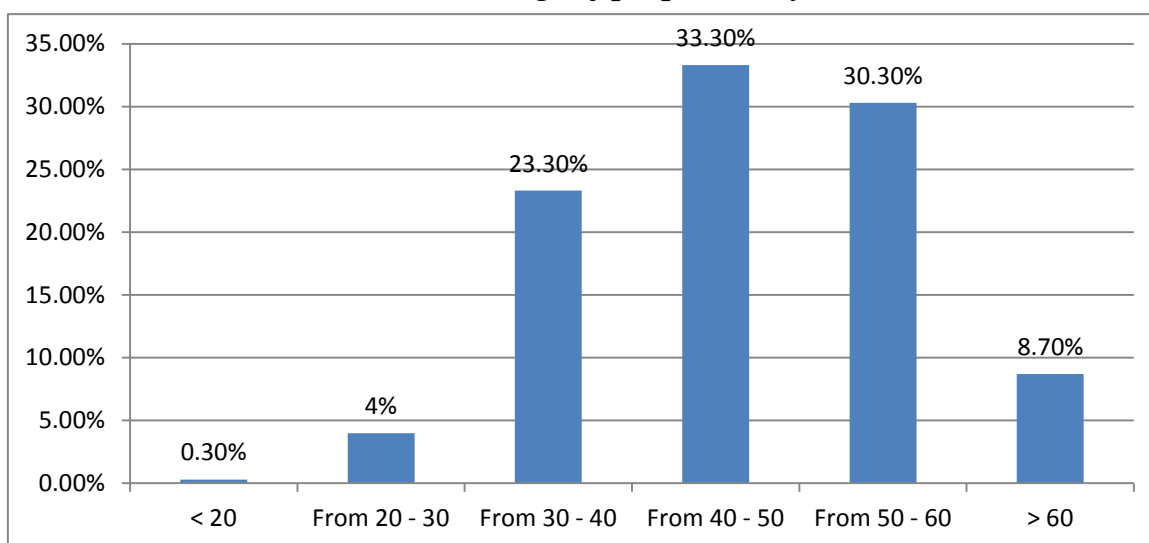
Chart 2: Gender of people surveyed



(Source: Survey data)

The age of family members participating in the questionnaires fluctuates from 18 to 77. The highest rate belongs to the 40-50 age group (33.3%). The next higher groups are 50-60 and 30-40, 30.3% and 23.3% respectively. People of 30-60 are the very main labors involved in the household husbandry.

Chart 3: Age of people surveyed



(Source: Survey data)

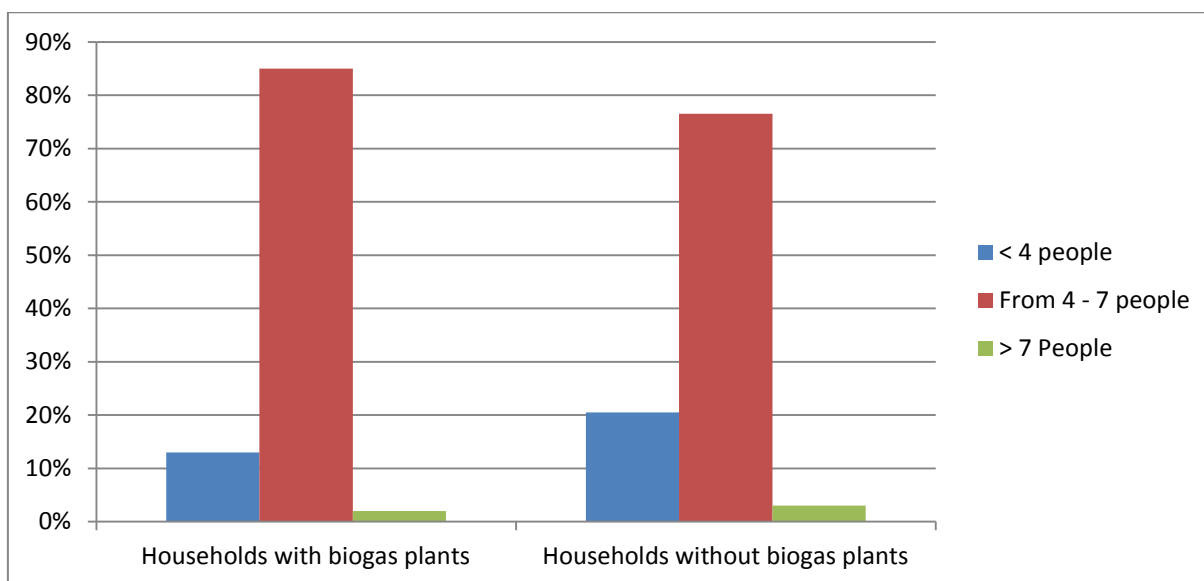
2.1.1.2. Family members and education background of people surveyed

Based on survey data from each household, the consultant has classified households into the following groups:

- Small households: Fewer than 4 members (1-3 members)
- Medium households: 4-7 members
- Large households: more than 8 members

The actual survey results at livestock households in 10 provinces show that, medium households account for a major amount with 78.9%, small households gets 17.8%. Among 100 households already having installed biogas plants of the project, 85% of them are medium households. The rate of households with average members at potential groups gains 76.5%. The rate of large households gains a very small amount, at 2.6% and mostly concentrates in Bac Giang, Tien Giang, Binh Dinh, Soc Trang, Son La, and mostly from potential households not having installed biogas plants.

Chart 4: Number of household members



(Source: Survey data)

The number of family members generating income is mostly from 2 – 4 people with the rate at 89%, among these the highest rate belongs to families with 2 people generating income (52.3%). Below is the table of frequency and proportion statistics of family members generating income in the two groups of household with and without biogas plants.

Table 2: Number of family members generating income

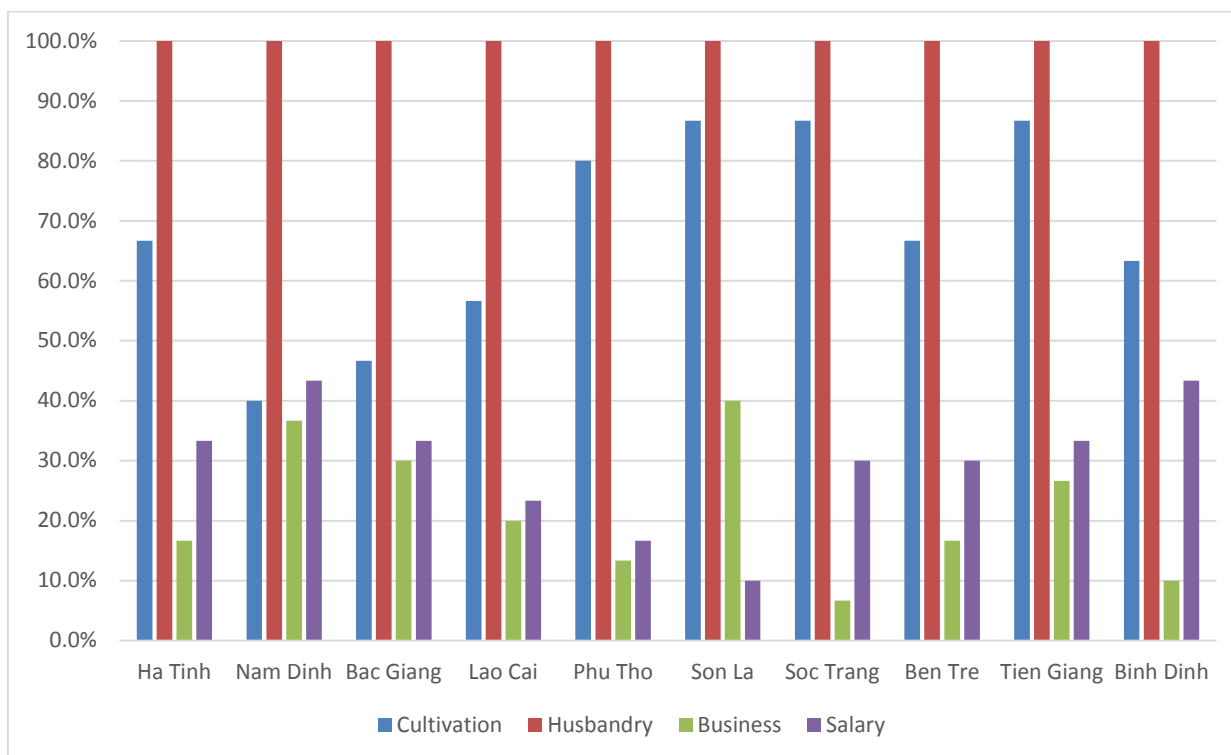
		Frequency	Proportion
Households already having biogas	1 person	5	5%
	2- 3 people	77	77%
	4 – 5 people	15	115%
	6 people	3	3%
Potential households	1 person	8	4%
	2- 3 people	134	67%
	4 – 5 people	54	27%
	More than 6 people	4	2%

(Source: Survey data)

2.1.2. Income of households surveyed

The income source of household surveyed is mostly from husbandry and cultivation. Among these, 100% of household surveyed have husbandry activities, then cultivation. Among project provinces, Phu Tho, Son La, Soc Trang and Tien Giang have the most number of cultivation households (80%). In Phu Tho, Soc Trang, most of them cultivate rice; Soc Trang has many cultivation household with large area, even up to 4-5 hectare. Most of households in Tien Giang and Ben Tre grow coconuts, almost no family grows rice. According to the share from a number of households, income from animal husbandry and cultivation are still quite precarious. Livestock business gets favorable only from the last 2 years. Households with income from trade or business from wages (income from the company or the lessee) account for a small proportion and concentrate in Binh Dinh and Nam Dinh.

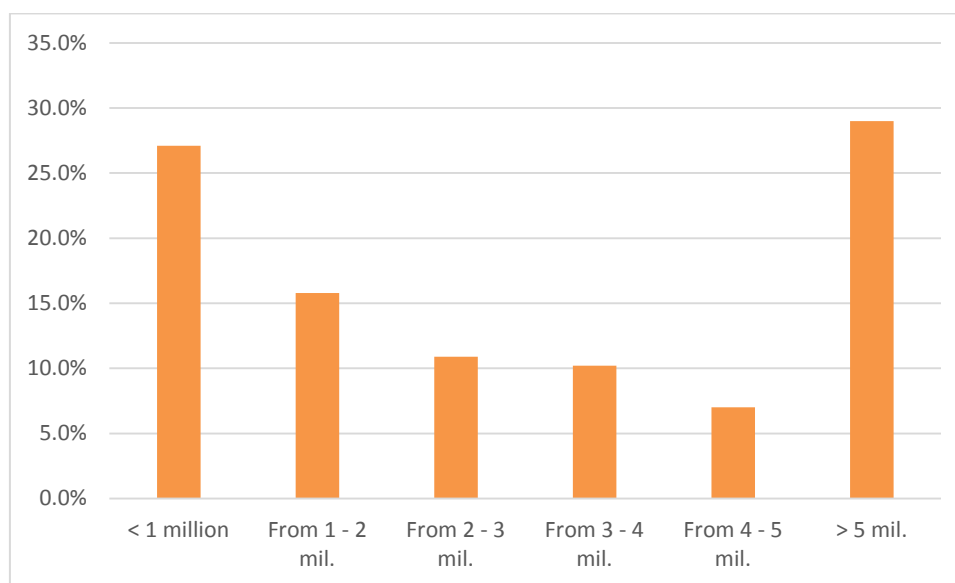
Chart 5: Income sources of households surveyed



(Source: Survey data)

With major source of income from small husbandry and cultivation, household income is still in low and middle levels. Among households participating in the survey, households with income above 5 million/month account for 29%, mostly concentrating in Tien Giang and Ben Tre. These households have very large production scale 70-130 animals and/ or a combination of business. The remaining households with small-scale livestock have income just enough to serve family’s activities and tuition for the children, there are evens households without enough income for the family’s spending. Households with an average monthly income are fewer than 1 million accounting for 27.1%. Those with a low income are the poor, with small production scale and without conditions to expand business due to lack of business capital.

Chart 6: Average/monthly income of the households surveyed



(Source: Survey data)

2.1.3. Husbandry situation of households surveyed

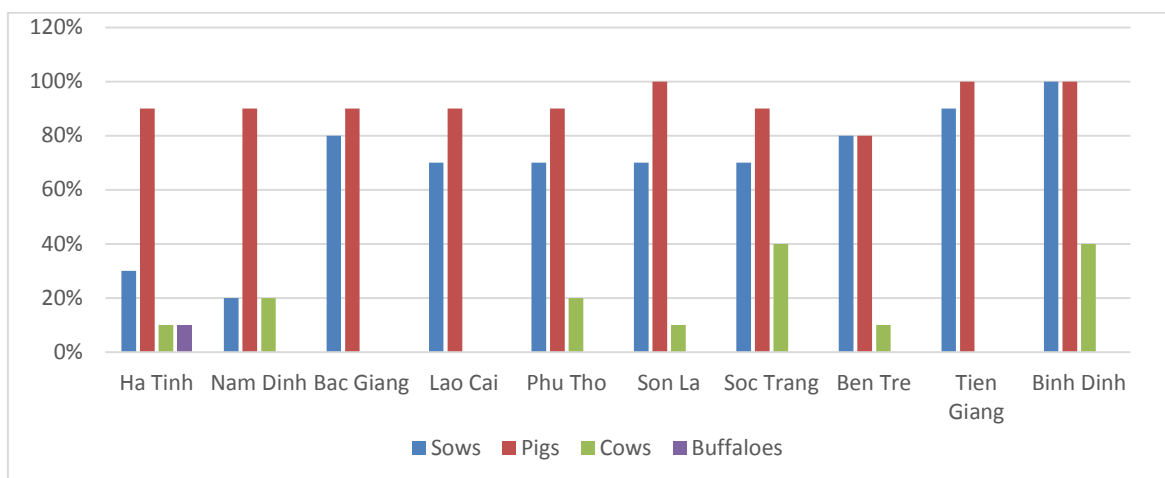
a. For large and medium farms

The consultant interviewed 10 farms with more than 1000 animals in the 10 project provinces, and 30 medium farms. Medium farms have 100-500 pigs, 66.7% of farms both have pigs and sows. The breeding of sows is aimed to breed pigs, which considerably reduces the costs of buying new breeds. 90% of farms have the tendency to expand husbandry scale with both pigs and sows, with an average increase of 150 animals/ farm. Among 30 farms, there is the farm of Mr. Mai Van Chien in Nam Dinh having the intention of expanding to a commercial farm with 100 sows and 1000 pigs. 10% of farms have no intention of expanding scale due to area limits.

b. For households already having installed biogas plants

Households already having installed biogas are mostly households fattening pigs. The rate of household breeding cows is low; most of cow raising households are in Soc Trang and Binh Dinh, with the rate from 40%. The remaining provinces have a very low rate of raising buffaloes and cows. In Ha Tinh and Nam Dinh, most of the households fatten pigs, there is very few households fattening sows, with the rate at 30% and 20% respectively.

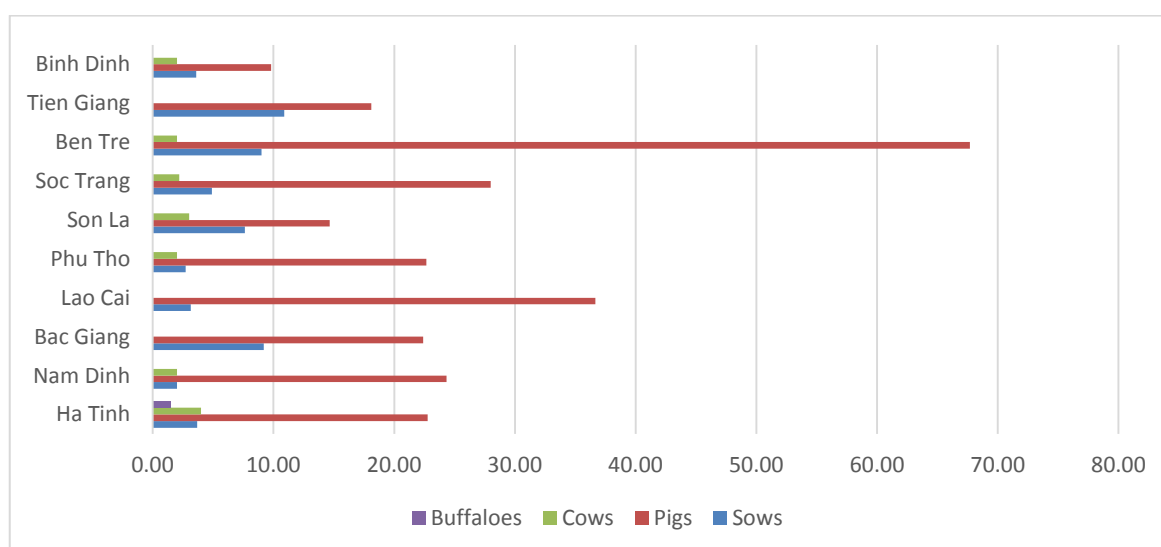
Chart 7: The rate of husbandry households already having biogas plants



(Source: Survey data)

The chart 7 shows the scale of the households already having biogas. According to the survey data, the consultant realized that the households in Tien Giang, Ben Tre and Bac Giang have a very high scale of breeding pigs. The average sizes of the 3 provinces are 76, 78 and 41 animals respectively. Tien Giang has the highest rate of husbandry households; Soc Trang has the lowest rate of pig breeding households with 7 pigs/ household on average. The sow breeding households aim at generating breeds for pigs, so the number of sows is always low, and serves the demand of pig breeding. The average number of sows varies from 2 – 11 sows/ household.

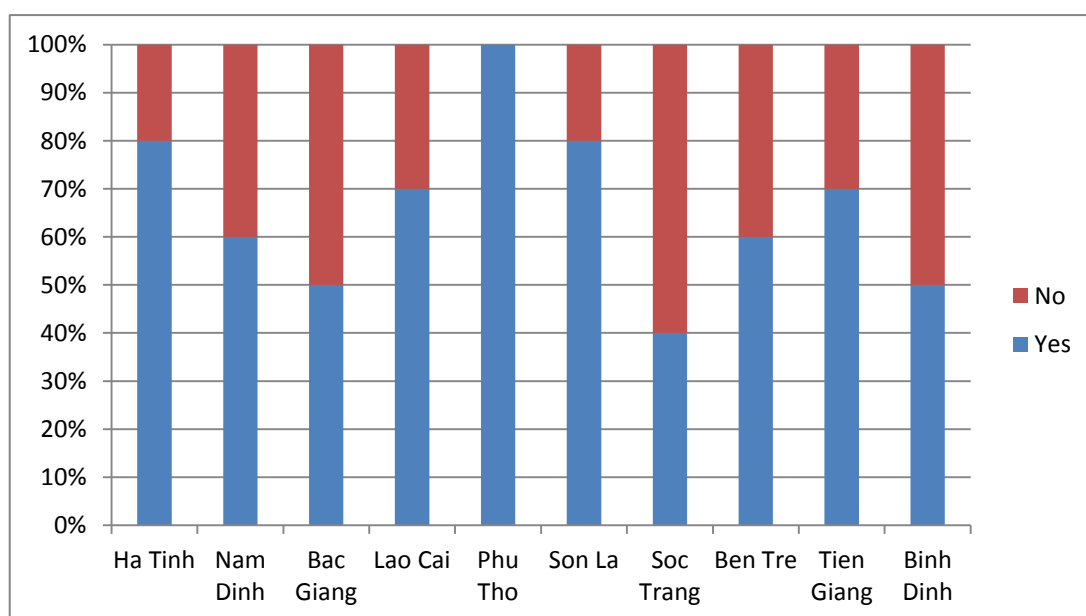
Chart 8: Current average husbandry scale of households already having biogas



(Source: Survey data)

With current livestock size, many households already having biogas is in need of expanding husbandry scale. 100% of households in Phu Tho have demand for expanding husbandry scale. The next provinces are Son La and Ha Tinh (80%). In Soc Trang, there are about 40% of households having intention to expand husbandry scale. In Phu Tho, Son La and Ha Tinh, husbandry scale is at average level, so the expansion level is quite high. Tien Giang has a very big husbandry scale. Most of the households in Tieng Giang want to expand their farms to larger ones. However, when they have demand for husbandry expansion, the biogas volume may become not enough. That’s why households all intend to install further biogas plants when husbandry is increased.

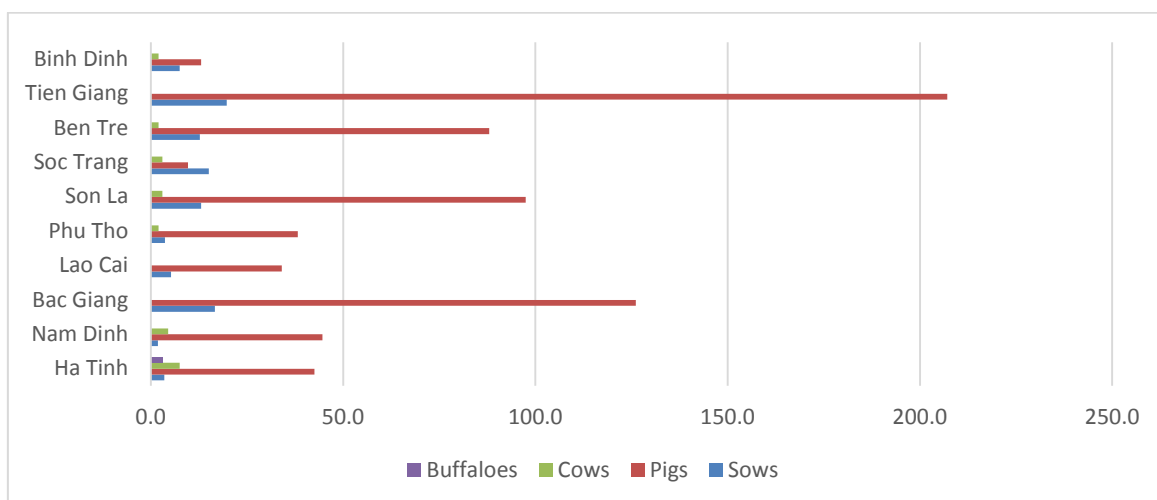
Chart 9: Demand for husbandry expansion of households already having biogas



(Source: Survey data)

When the households plan to expand pig breeding, the number of sows will also increase based on the amount of pork the households want to gain. The chart 9 shows the husbandry scale of the households in 10 project provinces after being expanded. From these, Tien Giang has the average husbandry scale at 207 pigs/ household. Bac Giang has the average tentative scale at 126 pigs/ households. When the pig scale increases, the sow scale will also respectively increase. In 10 provinces, there is only Nam Dinh reducing sow scale, the other provinces has the average sow scale at 3.5 – 19.7 sows/ households.

Chart 10: The number of average tentative livestock of households having biogas

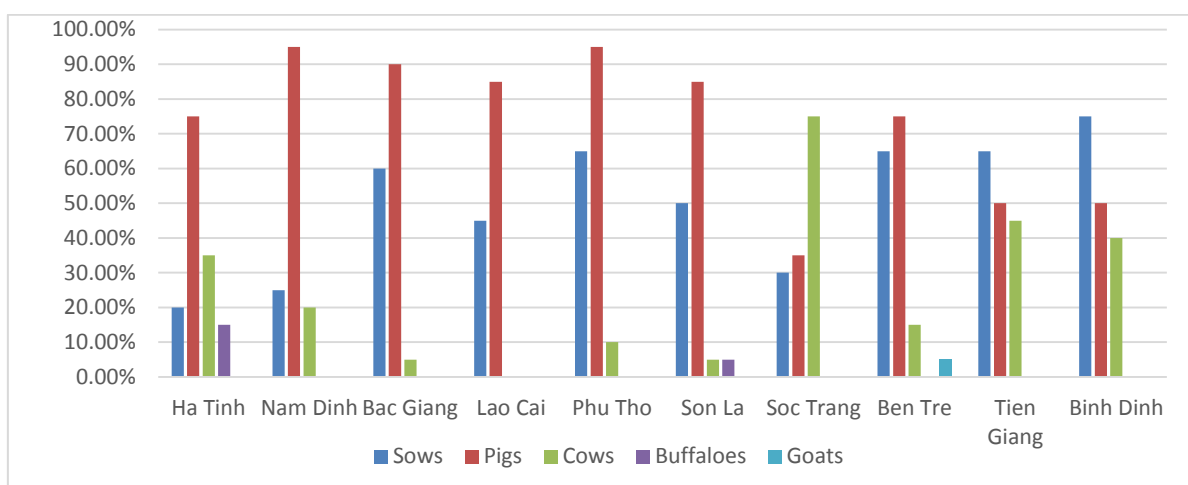


(Source: Survey data)

c. For the households potentially having biogas

Based on survey data, the consultant learns that the rate of husbandry households is relatively high. With the households not having biogas, the rate of fattening pigs and sows is very high. Sow breeding concentrates in Binh Dinh, Tien Giang, Ben Tre, Phu Tho and Bac Giang. Pig breeding concentrates in Phu Tho, Nam Dinh, Bac Giang, Lao Cai, Ha Tinh and Ben Tre, with the rate more than 75%. Besides, in Soc Trang, among households not having biogas, the rate of cow rearing households is also high (75%).

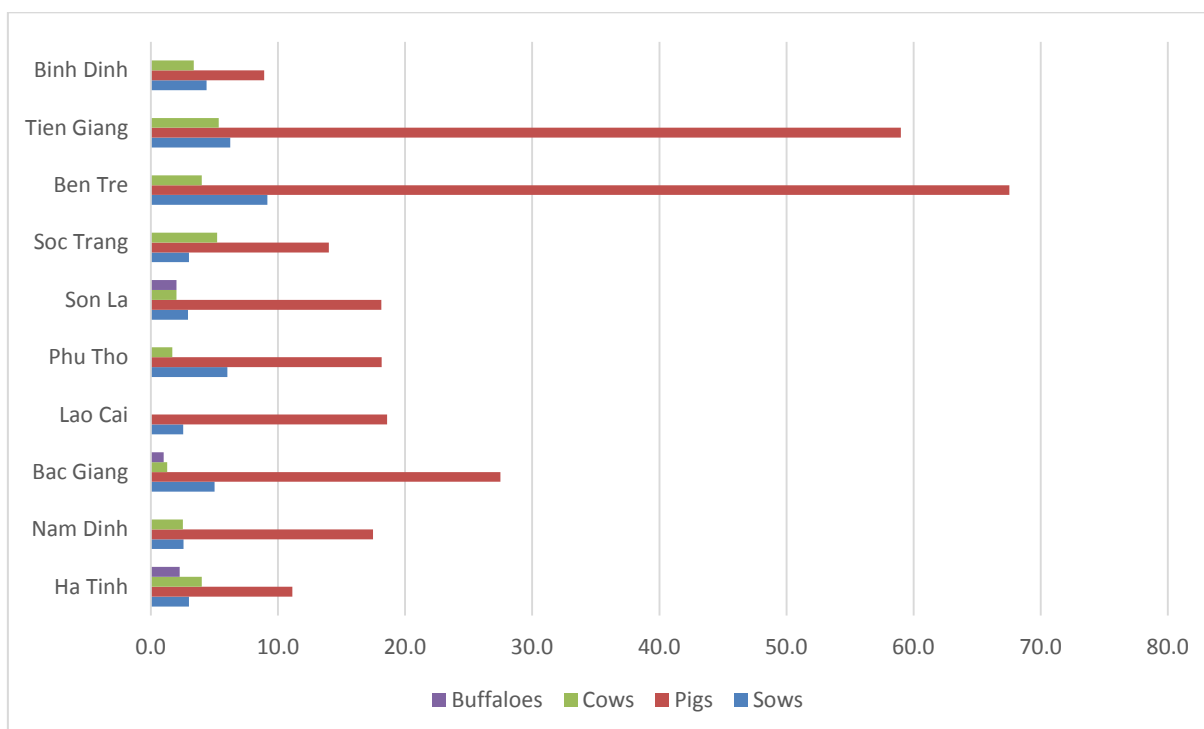
Chart 11: The husbandry rate of households potentially having biogas



(Source: Survey data)

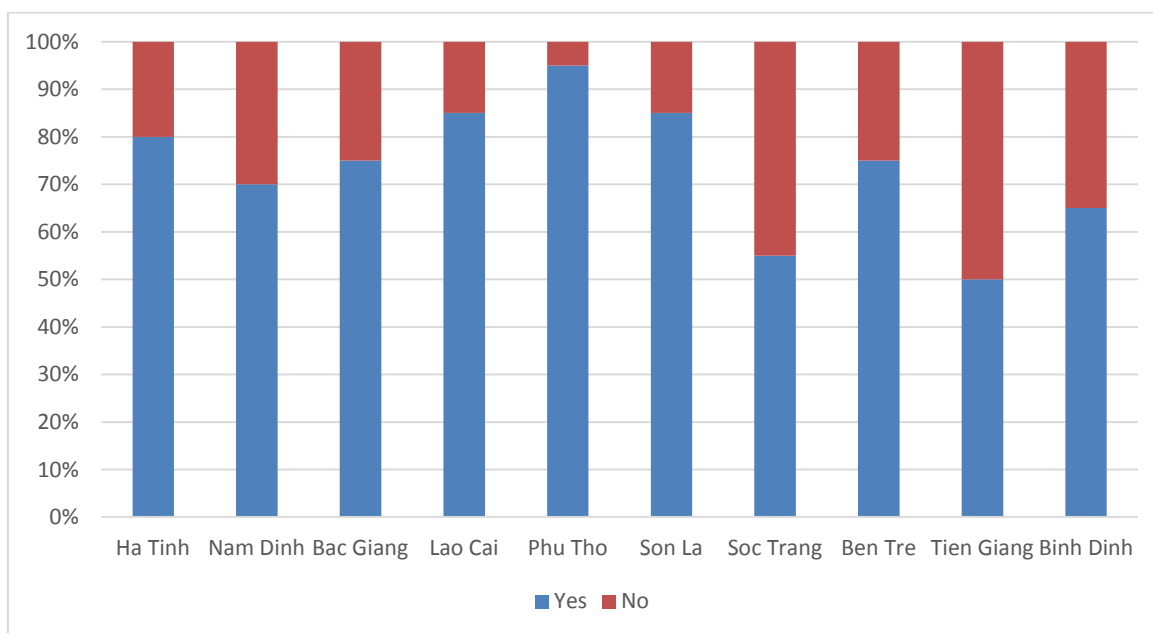
Tien Giang, Ben Tre and Bac Giang are the 3 provinces with the highest number of pigs and sows, with 59, 67.5 and 27.5 pigs/ household respectively. Binh Dinh has the lowest rate with 8.9 pigs/ household. The remaining provinces have more than 10 pigs/ household. Like the households already having biogas, the potential households fatten sows aiming to generate breeds for pigs. The sow breeding scale over the 10 provinces varies from 2.5 – 9.2 sows/ household. Lao Cai has the lowest sow breeding scale. Ben Tre has the highest scale with 9.2 sows/ household and with high sow value (65%). Phu Tho and Tien Giang also have a high sow breeding rate (65%), and gain average value at 6.0 and 6.2 sows/ household. Bac Giang has the lowest cow breeding with 1.3 cows/ household on average. The second lowest province is Phu Tho, with 1.7 cows/ household. Soc Trang has the highest cow breeding rate (75%), and also one of the two provinces having the highest cow breeding value, with 5.2 cows/ household.

Chart 12: Number of average livestock of households potentially having biogas



(Source: Survey data)

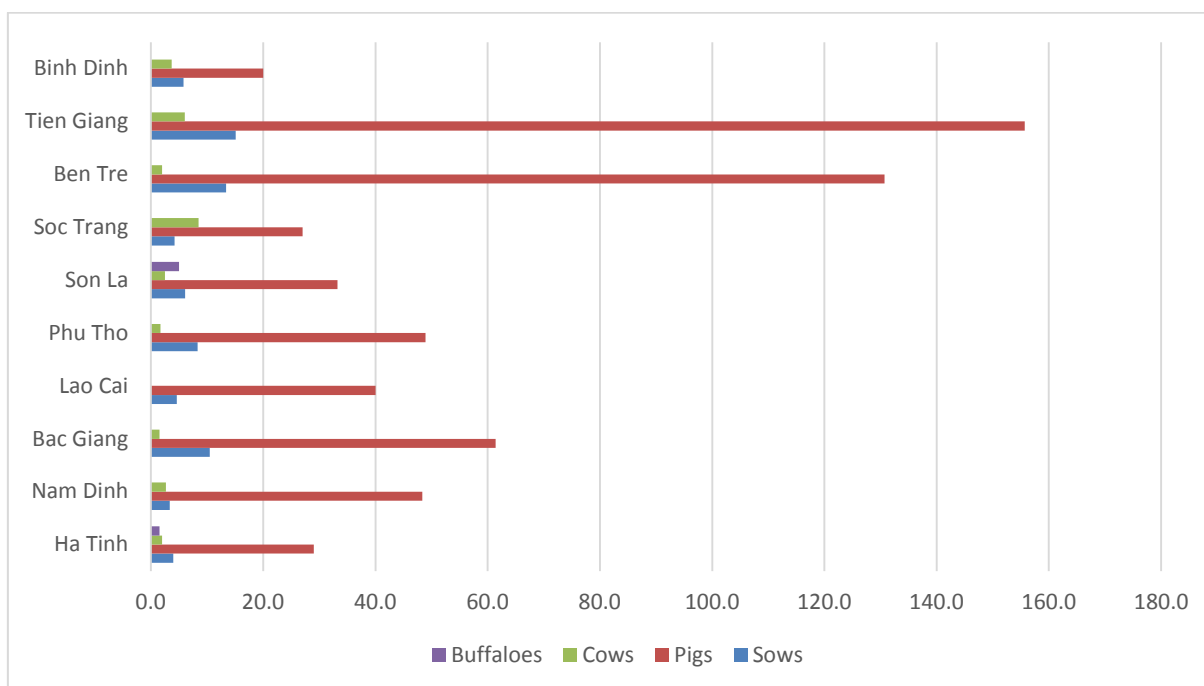
Chart 13: Demand for husbandry expansion of households potentially having biogas



(Source: Survey data)

Currently, potential husbandry households are in high demand for husbandry expansion. Soc Trang and Tien Giang have the lowest demand for husbandry expansion but still gain 50%. Like husbandry expansion demand of households already having biogas, potential households in Phu Tho, Son La, Ha Tinh, Lao Cai even have a higher demand, because most of their income is from husbandry. And their husbandry business is quite favorable over the past time, the current husbandry scale is still at average level and suitable for expansion to create more jobs for the family members. The households in Ben Tre and Tien Giang tend to expand from household scale to farm scale. The number of pigs in Tien Giang and Ben Tre is expected to considerably increase upon expansion. Tentative average scale of Tien Giang is 156 pigs/ household, and Ben Tre is with 130.7 pigs/ household. The other provinces also have a considerable increase in the number of pigs. In Bac Giang, the current average scale is 27.5 pigs/ household and plan to go up to 61.4 pigs/ household. In general, husbandry expansion demand is very high. The surveyed households are aware that they will base on the expanded household scale to decide to build/ install biogas plants with suitable volume and ensure proper protection for the surrounding environment.

Chart 14: The average number of livestock in potential households



(Source: Survey data)

2.2. FINDINGS AND ANALYSIS

2.2.1. Demand for building biogas plants

2.2.1.1. Status of the LCASP’s information approach of the project targets

a. Large-scale farms/enterprises

The consultant has implemented in-depth interviews with 10 large-scale livestock enterprises (at least 1000 pigs or 200 sows) in the 10 provinces. Interview results shows that only 4 out of 10 large farms have known the project information. According to real situation of the farms at surveyed time, only a small amount of gas from biogas plants is used for cooking, heating and lighting. The gas using technology hasn’t meet criteria and hasn’t brought about profits to enterprises when they decide to invest. Therefore, the enterprises are not really interested and concerned about investing in biogas plants.

b. Medium-scale farms/enterprises

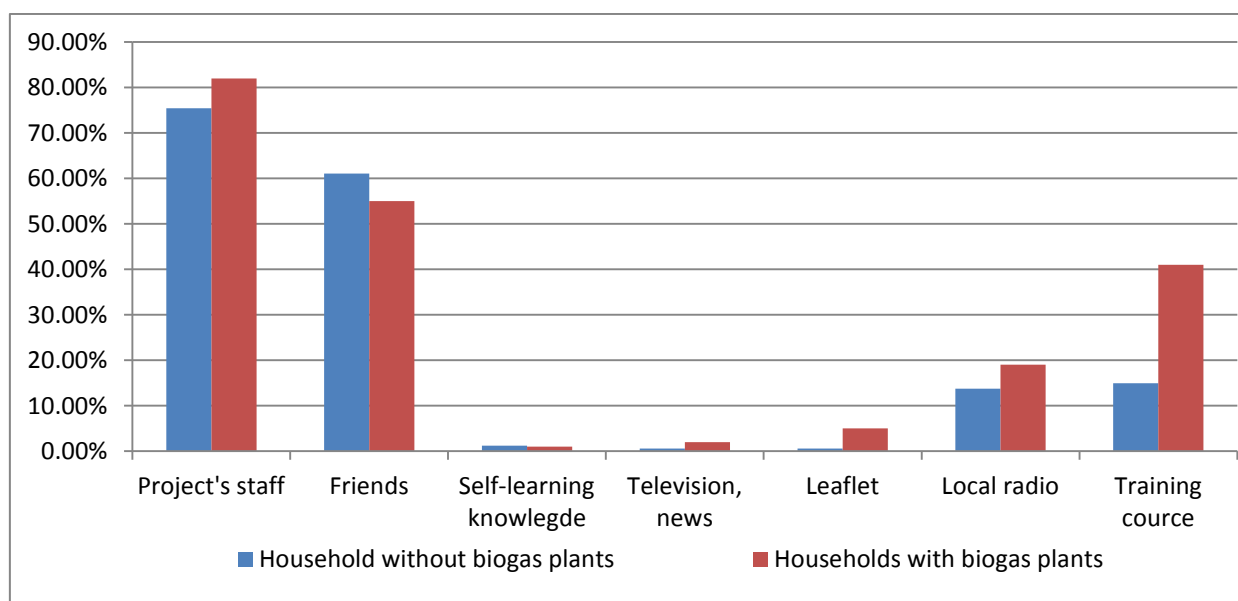
The consultant defines medium farms/enterprises as those with 100 – 1000 pigs. The survey shows that 70% of the surveyed enterprises have known about the LCASP,

but they only know about the small biogas plants with a 3 – million – support for small-scale husbandry households. Medium-scale plants are defined as plants with the volume at 51 – 499 m³. These plants are mostly installed based on HDPE plastic canvas covering technology. At the survey time, according to shares from project’s technical staff, they have not to be trained about the medium biogas installing techniques, and the HDPE suppliers are not censored, which leads to the extreme limits in the propagation about the medium biogas plants with 10 – million – support.

c. Small-scale husbandry households

The survey has covered 200 households not having biogas over the 10 provinces. The results show that 83.5% of households have known about the LCASP. They get information from propagation and introduction of friends. As for the households already having biogas, the rate of households approaching information from project officers and introduction of friends are 82.00% and 55.00% respectively. These rates of households not having biogas are 74.45% and 61.08%. In addition to the 2 information sources including project officers and friends, local media and local training classes are also the two important channels of the project.

Chart 15: Information sources that the households approach to the LCASP



(Source: Survey data)

2.2.1.2. Demand for installing biogas plants

a. Demand for installing large biogas plants

Based on the project design, the medium biogas plants have the volume of at least 500m³. The consultant has implemented in-depth interviews with 10 large husbandry enterprises in the 10 provinces. The survey results show that 100% of the large farms already own installed biogas plants or biogas plants using HDPE cover. According to shares of the farms, because of their large husbandry scale, they are obliged to conform to procedures of environmental protection of the Department of Natural Resources and Environment, and had installed biogas many years ago. However, because of current husbandry expansion demand, the large farms still have demand for new biogas plants, especially the use of HDPE cover, because the old plants are already downgraded or overloaded. For example, Mr. Nguyen Ba Huu (Dam Nap village, Viet Ngoc commune, Tan Yen district, Bac Giang province) has invested in a HDPE biogas plant with volume at 1500m³ and another biogas plant with volume at 180m³. However, because of husbandry expansion demand, the farm still has demands to install more HDPE biogas plants. According to explanation of large farms, the further installation of biogas plants not only meets the demand of livestock waste processing, but also increases efficiency in livestock waste processing.

b. Demand for installing medium biogas plans

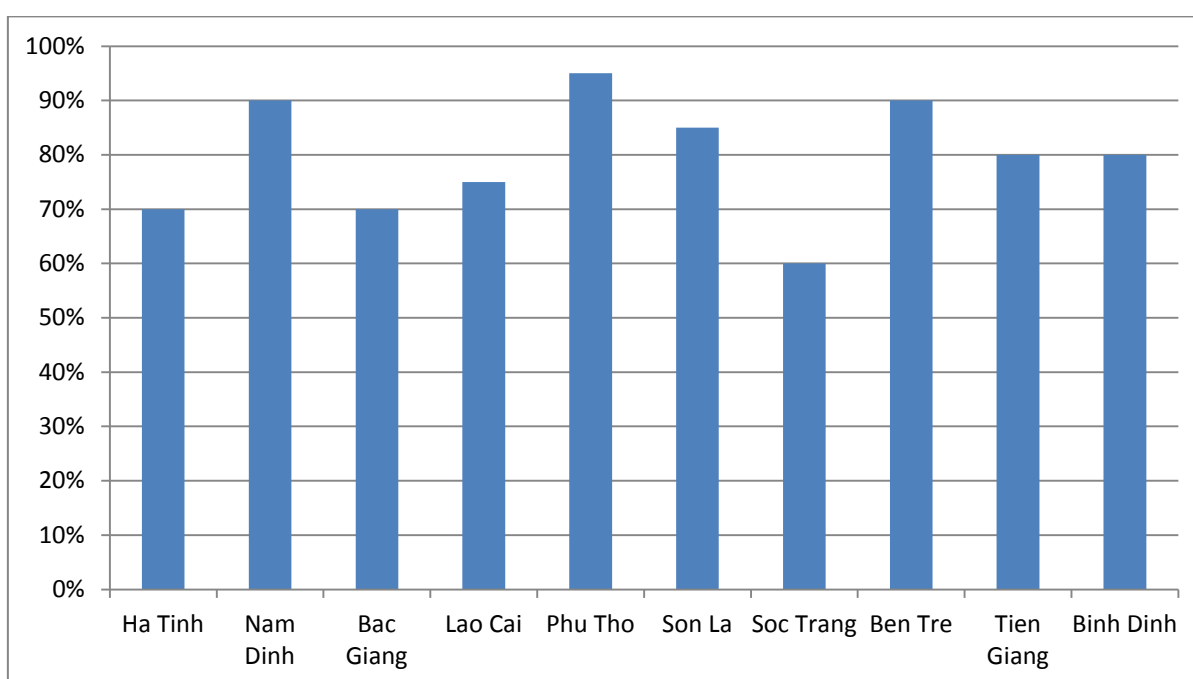
The consultant has surveyed with questionnaires with 30 medium and small-scale farms in the 10 provinces, and found out that 93.99% of the farms have already owned built biogas plants, composite tanks or HDPE plants. The farms/enterprises owners shared that because of the large number of pigs, there are lots of solid and liquid waste, and the farm is obliged to conform to environmental protection procedures of the Department of Natural Resources and Environment, and have installed biogas plants. However, the volume of such biogas plants are quite small, the plants are old and overloaded compared to the current scale of the livestock. That's why the farms still have demands to have more biogas plants, especially plants with HDPE cover. Besides, the further installation of biogas plants will lead to the arising

demand for building biogas plants of medium-scale farms. The interview results show that 86.67% of interviewed farms have demand for building more biogas plants.

c. Demand for installing small biogas plants

With regards to the installation of small biogas plants in the households, there are 79.5% of interviewed households answered that they intend to have biogas plants installed in the upcoming time. Among these, the provinces with the highest demand for small biogas plants are Phu Tho (95%), Nam Dinh (90%), Ben Tre (90%). Soc Trang has the lowest demand for small biogas plants (60%).

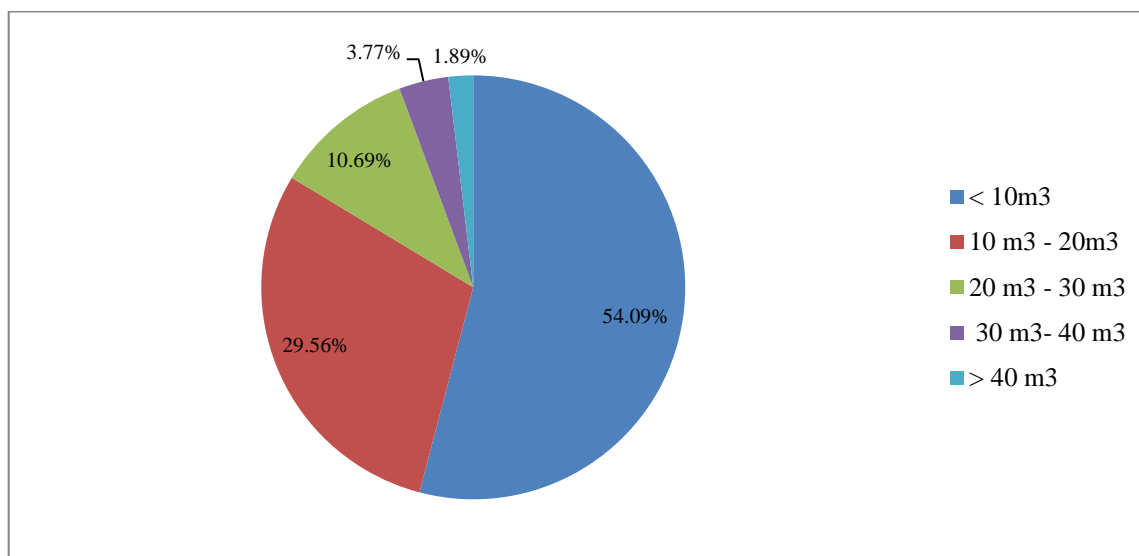
Chart 16: Demand for biogas plants in the households



(Source: Survey data)

Many households choose the tentative scale for biogas plants at below 10m³ (54.09%), and 10m³ – 20m³ (29.56%). 10.69% of the households choose 20m³ – 30m³ scale. Very few households choose the 30m³ – 40m³ scale and more than 40m³, only accounting for 3.77% and 1.89% respectively. The choice of plant volume is based on the tentative husbandry scale of those households.

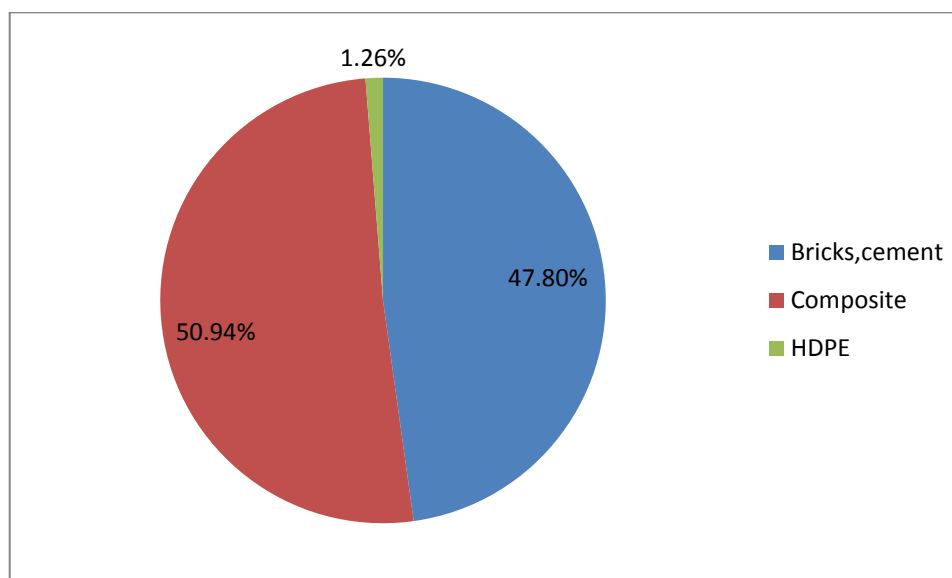
Chart 17: Tentative size of biogas plants for the households



(Source: Survey data)

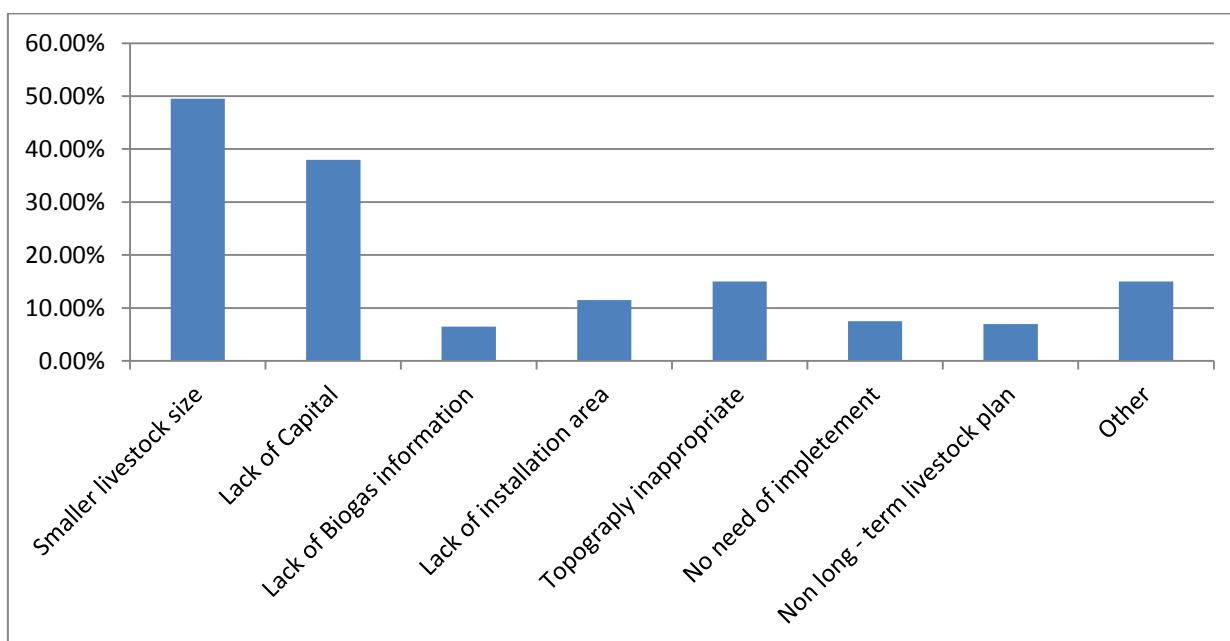
Regarding the material for biogas plants, the most popular techniques that are chosen by the households are building technique (47.80%), and composite technique (50.94%). The HDPE material is mostly used for large and medium biogas plants, that’s why there are very few households choosing this material (1.26%).

Chart 18: Tentative material for biogas plants



(Source: Survey data)

Chart 19: Reasons for not having biogas plants of potential households



(Source: Survey data)

The consultant has surveyed about the households not having biogas, and found out that the two main reasons are small scale of husbandry (49.5%) and lack of capital (38.0%). Although there are many households being aware of the role and meaning of having biogas plants installed, they find it impossible to install such biogas plants due to lack of capital. In addition, there are other reasons leading to the disability of having biogas plants, including: not having biogas information (6.5%), lack of area (11.5%), tough geographic features (15.0 %), not having demand (7.5%), not having intention of long-term husbandry (7.0%) and other reasons (15.0%). With regards to area limits and geographic difficulties, it’s very hard for the households to overcome the situation, although they all understand the meaning of environmental protection and enhancement for husbandry efficiency, as well as biogas waste processing.

2.2.2. Credit demand for biogas value chains

2.2.2.1. Approaching to credit information of interviewees

Credit component plays a key role and counts for nearly 50% of the project budget. To implement successfully this component, it is required that the communication of credit component is well performed to the sub – beneficiary of

credit package of the project. According to share of the PPMU, some Agribank’s provincial branches deployed positively the credit component; however the communication of credit component was limited in training on biogas rendered by PPMU without extensive deployment for all households. The survey found that the access to credit component of interviewees is really limited. Some survey results about the level of approach for information of the credit package of interviewees are as below:

- *For medium and large – scale farms/enterprises*

With the large – scale enterprises, almost 100% of interviewed commercial enterprises said they have no information about the credit package for LCASP. Mr. Nguyen Van Toan – the owner of commercial breeding enterprises (Lane 10, Xuan Thuong commune, Xuan Truong district, Nam Dinh province) said that: *“Currently my farm borrows 1.3 billion VND from Agribank to develop its economy. I totally have no information about the LCASP’s credit package. When a LCASP officer told me about the existence of a credit package, i went to ask an Agribank’s officer in Xuan Truong district about the low carbon credit package, and this banker also had no idea about this credit package.”*

For the medium – scale farms/enterprises, it revealed the limitation of accessing to credit component in project, almost 100 percent of these interviewees said they didn’t have any information about this credit package.

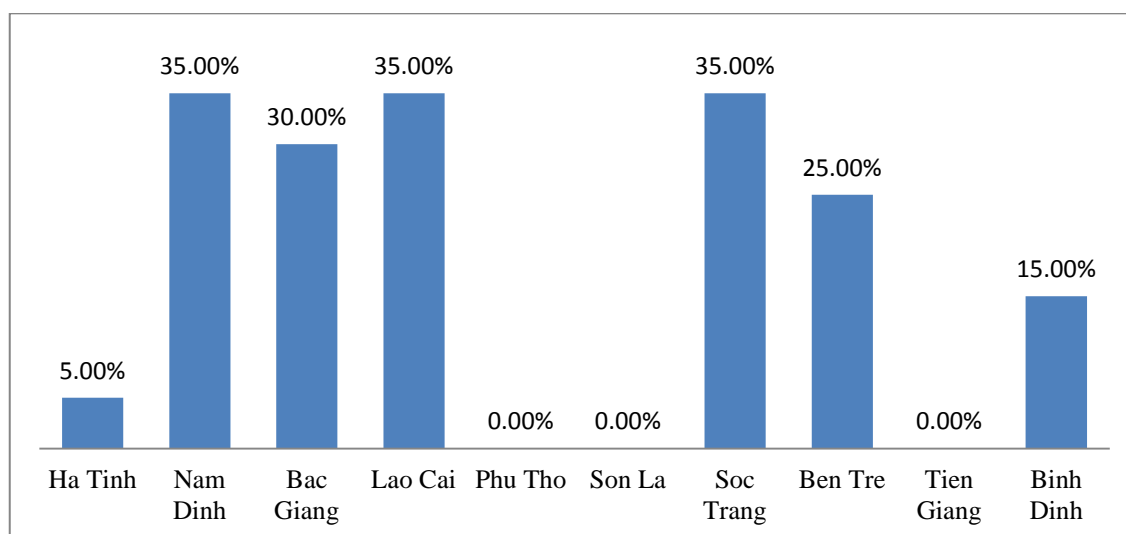
- *For the households*

For households with biogas plants, the results of surveying 100 households implemented biogas plants showed that 34% of them have access to information of credit package and only 1% of the households borrowed from the credit package of the project. In term of the project, the households with biogas plants participated in training courses, the low percentage of accessing to credit component showed the limitation of communications and marketing of the project. For a deeper understanding of the communication of the project, the credit consultant interviewed the households having implemented biogas plants *“Was the household introduced about credit package of the LCASP project?”*. The result showed that 19% of the households

answered “Yes”, 72% of the households answered “No” and 9% of the households answered “Do not know”. Of those households answering “Yes”, 100% of them knew about the credit component through the project officers. Thus, it can be seen that the current mode of communication of project is mainly through the project’s staff, the involvement of banker in communicating credit component is very limited. The credit consultant headed to the People’s Committee office of Xuan Tan commune, Xuan Truong district, Nam Dinh provinces; then met with the Women’s Union, Farmer’s Union and representatives of entity and authority organization, all claimed that they did not know and there was no bank providing information of this credit package. As confirmation of Mr. Long – the president of People’s Committee of Xuan Tan commune and the witness of Mr. Dong – the vice president of People’s Committee of Xuan Tan commune shown that: *“Both Agribank and Co – opbank have not introduced any information about credit package of LCASP project, all households did not know anything, the only thing they knew financial support of biogas plants including 3 million VND support for small – sized biogas plants, which they heard from the project officers, as well as 10 million VND support for medium – sized biogas plant and 20 million VND support of large – sized biogas plants, it will be provided by PPMUs”*.

For the group of potential household implemented biogas plants, the result of surveying 200 households in 10 provinces introduced that 83.5% of households known LCASP’s project, however, only 21.56% interviewed households said that they accessed the information of credit package and the level of accessing to credit package information by households in provinces including Nam Dinh (35%), Bac Giang (30%), Lao Cai (35%) and Soc Trang (35%), as for the remaining provinces including Phu Tho, Son La and Tien Giang provinces, almost 100% of surveyed households answered that they have no information about the credit package of the project.

Chart 20: The level of information approach to the credit component of households without biogas plants



(Source: Survey data)

The limitation of accessing to information of credit component by households is consequence of the weakness in communication of two financial institutions. According to the results of surveying households without biogas plants, it found that 10% of households which were introduced credit package by LCASP’s officer, 77.5% of households were not introduced and 12.5% of households said “Do not know”. In addition, in aspect of information sources, 100% of households confirmed that they knew the information of credit component based on the introduction of LCASP’s officers. The lack of information introduced the credit component from two financial institutions which is reason leading to the limitation of accessing to information of credit of biogas value chains by households.

2.2.2.2. Status of outstanding loan of households having loan demand at financial institutions

a. For large scale farms/enterprises

Interview results showed 100% large farms are borrowing from the Bank for Agriculture and Rural Development or other institutions for the purpose of economic and livestock development. Total current loans of these farms are from 1.3 billion VND to 10 billion VND. This amount depends on the loan purpose and the value of farm’s collateral. Most of the farm’s collateral was evaluated by the Banks and the

farm can be used as collateral for loans equivalent to the current loan amount that farms borrow from banks. Thus, it’s impossible for farms take out further loans without other collateral. According to the share of the farm’s owner, he have to use 13 certificates of land use right in order to borrow 4 billion VND from 02 institutions.

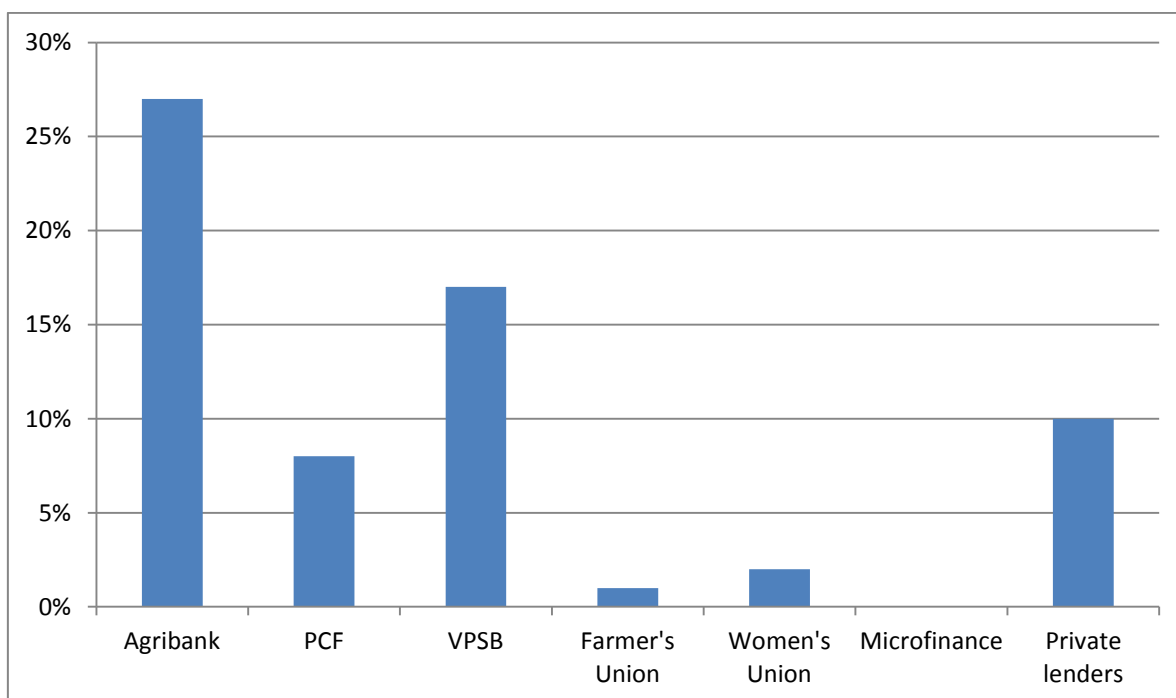
b. For medium scale farm/enterprises

The consultant has conducted a questionnaire survey of 30 small and medium livestock enterprises and found that 76.67% of medium enterprises currently borrow loans from Bank, in which 70% of household having loan from Bank for Agriculture and Rural Development and 6.67% from other institutions. Total current loans of these farms from 100 millions dong to 1.5 billions dong. With current situation, it is very difficult for Bank to disburse because most medium farm morgaged their certificate of land use right in the Banks .

c. For the small scale husbandry households

With households installed biogas plant, at the survey time, it is found that 27% of households having current loan from Agribank, People Credit fund (8%), VBSP (17%), Farmer’s Union (1%), Women’s Union (2%) and Private lender (10%).

Chart 21: Status of outstanding loans of households without biogas plants



(Source: Survey data)

Status of outstanding loan of the potential households is showed in this table belows:

Table 3: Status of outstanding loans of potential households

	Agribank	PCF	VPBS	Micro finance	Private lender
Ha Tinh	20%	5%	15%	0%	0%
Nam Dinh	15%	0%	10%	5%	0%
Bac Giang	30%	0%	5%	0%	0%
Lao Cai	40%	0%	20%	0%	5%
Phu Tho	25%	0%	15%	0%	5%
Son La	40%	15%	5%	0%	15%
Soc Trang	10%	0%	0%	0%	0%
Ben Tre	25%	0%	0%	0%	10%
Tien Giang	25%	0%	0%	0%	0%
Binh Dinh	5%	0%	5%	0%	0%
Total	23.5%	2.0%	7.5%	0.5%	3.5%

(Source: Survey data)

With the potential households, they mainly borrow from Agribank (23.5%) and VBSP (7.5%).

Agribank has wide network and long time experience and Agribank is providing fund for most livestock households.

2.2.2.3. The credit demand for biogas value chains of surveyed targets

a. For large – scale farm/enterprises

The consultant has implemented in-depth interviews with large-scale livestock enterprises in the 10 provinces. Interview results showed 100% large farms are borrowing from the Bank for Agriculture and Rural Development for the purpose of economic and livestock development, 100% of large farms have already built biogas projects or HDPE membrane. According to the share from the farms: Due to large livestock, they are required to comply with the procedures for protecting the environment as requested by the Natural Resources and Environment Department, and

has installed biogas for years ago. However, because of demand to scale up the farm, they still need new biogas plants, particularly the use of HDPE membranes, because the basement of the old plants has degraded or overloaded. Most large farms have answered that they want to borrow more to repair stables, expand and upgrade the wastewater collection system, toward clean hygiene and uniform in investment. However, because the large farms are having loans with considerable credit, it's difficult for banks to provide further loans.

b. For small and medium enterprises

The consultant has conducted a questionnaire survey of 30 small and medium livestock enterprises and found that 70% of medium enterprises currently borrow loans from Banks for Agriculture and Rural Development for the purpose of economic and livestock development, 93.33% of medium-sized enterprises have built biogas using HDPE membrane. The farm/enterprise owners also shared that because of owing to large numbers; they are required to comply with procedures of the Natural Resources and Environment Department that makes them compulsory to build biogas plants. However, their biogas plant is now too old; the volume is quite small and overloaded compared to the current herd size, so farms still need new biogas plants, especially plants using HDPE membrane. Among small and medium farms answering the questionnaire, 83.33% of farms want to have loans for housing repair, expand and upgrade the wastewater collection system in order to be more hygienic, and install a biogas plant using HDPE membrane. However, it's not easy to take out further loans because 70% of these farms currently borrowing from the Bank for Agriculture and Rural Development. In addition, according to a representative of the Bank for Agriculture and Rural Development, “*Currently the project has no technical standards for medium and large-scale plants so that they have no basis for lending, the fact that there isn't technology company providing standard which is accepted by the project, this reduces the banks' convincement for lending*”. At present, the investment in large scale biogas has just stopped at reducing environmental pollution and generating natural gas for household use. However, the equipment or technologies are currently under standard and not effectively operated, which cannot convince enterprises to

invest. According to survey data, up to 70% of farms are having outstanding loans at Bank for Agriculture and Rural Development, therefore, banks find it hard to provide more loans, because the certificate of land use rights that enterprises using as collateral has the maximal loan value equivalent to the amount disbursed to the enterprises before. This is the reason why medium and large livestock enterprises have high credit demand, but they cannot approach loans from the project funds.

c. For households

The project supports credit to small livestock households to finance the construction/ installation of the biogas plants which have been approved for quality, relevant items such as water supply and drainage system, gas pipeline, the use of gas equipment, environmental remediation items such as sewage tank, separate collection tank, cage washing sewers. The survey results indicate that the households having demands for biogas plants are also in needs of renovation for relevant items as waste collection system, reservoir distribution, sewerage systems and water storage, improving create barn floor, barns, feed and seed. Demand for credit from households is as follows:

Table 4: Credit demand from households not having biogas plant in the 10 provinces

Province	Household having loan demand	Household not having loan demand
Ha Tinh	55%	45%
Nam Dinh	85%	15%
Bac Giang	70%	30%
Lao Cai	50%	50%
Phu Tho	65%	25%
Son La	80%	30%
Soc Trang	55%	45%
Ben Tre	50%	50%
Tien Giang	50%	50%
Binh Dinh	50%	50%

(Source: Survey data)

Table 4 shows that the credit demand from household not having biogas plants in 10 province is quite high, the rate of household want to borrow in 2 provinces Nam Dinh and Son La are 85% and 80%. The other provinces have lower credit demand rate but they are still more than 50%. Some household have no credit demand because they have ability to cover biogas plant cost by themselves or borrow from their relatives. Some have no certificate of land use right or used certificate of land use right for other loans in Banks or they are unwilling to take out loans.

Table 5: Reasons why households don't have loan demand

	Low value loan	Having loan bank	Limited loan purpose (only for biogas plant)	Complicate loan procedure	Requirement of the certificate of land use right
Ha Tinh	50.00%	0.00%	30.00%	0.00%	55.00%
Nam Dinh	90.00%	5.00%	55.00%	0.00%	55.00%
Bac Giang	60.00%	10.00%	50.00%	20.00%	55.00%
Lao Cai	75.00%	0.00%	50.00%	15.00%	65.00%
Phu Tho	93.75%	0.00%	25.00%	37.50%	68.75%
Son La	75.00%	5.00%	30.00%	15.00%	60.00%
Soc Trang	63.16%	5.26%	15.79%	36.84%	84.21%
Ben Tre	65.00%	10.00%	5.00%	10.00%	40.00%
Tien Giang	70.00%	5.00%	0.00%	15.00%	50.00%
Binh Dinh	57.89%	5.26%	10.53%	15.79%	42.11%

(Source: Survey data)

Among households having demand for loans, the purpose of the borrowing are very diversity, loan purpose is to combine many categories such as install biogas plant, upgrading stables, purchase seeds, feed. When being asked about lending for only biogas plant, rate of households having credit demand decreases because of low value loans and banks required the certificate of land use right and complicated loan procedures. As results, households will wait when they have enough money to invest. This table below shows the household's loan purpose in 10 provinces.

Table 6: Loan purposes of households in the 10 provinces

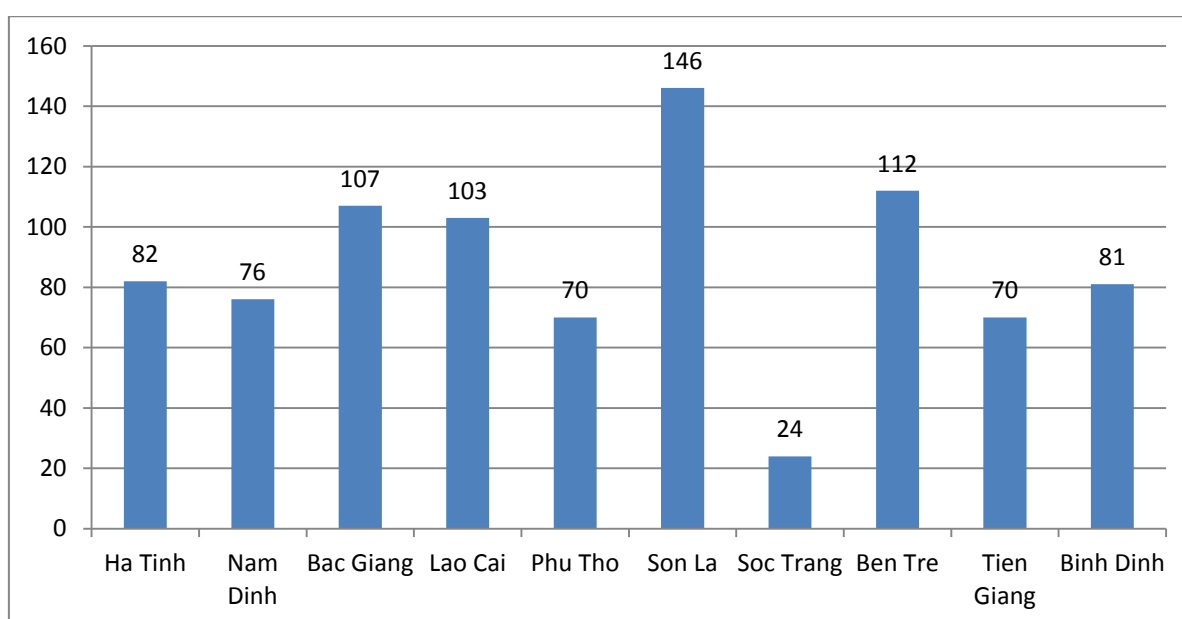
Provinces	Only for biogas plants (1)	For purchase of livestock breeds and feed (2)	For renovation and repairs of cages (3)	For biogas plants and cage renovation	Loan for biogas plants + (2) +(3)
Ha Tinh	27.27%	81.8%	81.8%	100.0%	100.0%
Nam Dinh	23.53%	64.7%	82.4%	100.0%	100.0%
Bac Giang	28.57%	78.6%	85.7%	100.0%	100.0%
Lao Cai	20.00%	75.0%	100.0%	100.0%	100.0%
Phu Tho	28.6%	71.4%	71.4%	100.0%	100.0%
Son La	33.3%	50.0%	50.0%	66.7%	83.3%
Soc Trang	81.8%	27.3%	90.9%	90.9%	72.7%
Ben Tre	10.0%	40.0%	70.0%	100.0%	60.0%
Tien Giang	40.0%	30.0%	80.0%	100.0%	80.0%
Binh Dinh	70.0%	20.0%	50.0%	90.0%	70.0%

(Source: Survey data)

Table 6 shows that, among household intending to build biogas plant, rate of households in Soc Trang and Binh Dinh willing to take out loan for only biogas plants is high. Households participating in the survey in Soc Trang are mainly Kho Me, their life is very difficult, and there are many poor households, so that credit demand in Soc Trang is high. Many household are aware of the importance and benefits of the biogas plant but they cannot install the biogas plant due to lack of economic conditions. They are willing to take out loans when they know information of project’s credit support. However, not having the certificate of land use right or the certificate of land use right mortgaging in the Bang is their difficulty in approaching loans. Binh Dinh also has the high rate of households willing to take out loans. 08 left provinces have low rate of credit demand for only biogas plants. The survey results indicate that most households having demands for biogas plants are also in needs of renovation for relevant items as: improving create barn floor or remove the stables to the more convenient place. Therefore, the credit demand will be high if the loan purpose is expanded. However,

until now, both institutions disbursed almost very limited project funds. In some provinces, the branch Bank for Agriculture and Rural Development closely cooperated with PPMU to disburse capital, but to the present time, only two branches of Agribank at Bac Giang and Lao Cai having deployed disbursement of project funding with a total of 3.374 billion (in Bac Giang they disbursed 1.429 billion for 36 projects, and in Lao Cai they disbursed 1,945 billion for 144 projects). This is also the first two branches of Agribank disbursing project funds in a total of 10 provinces.

Chart 22: Average loan demand of households

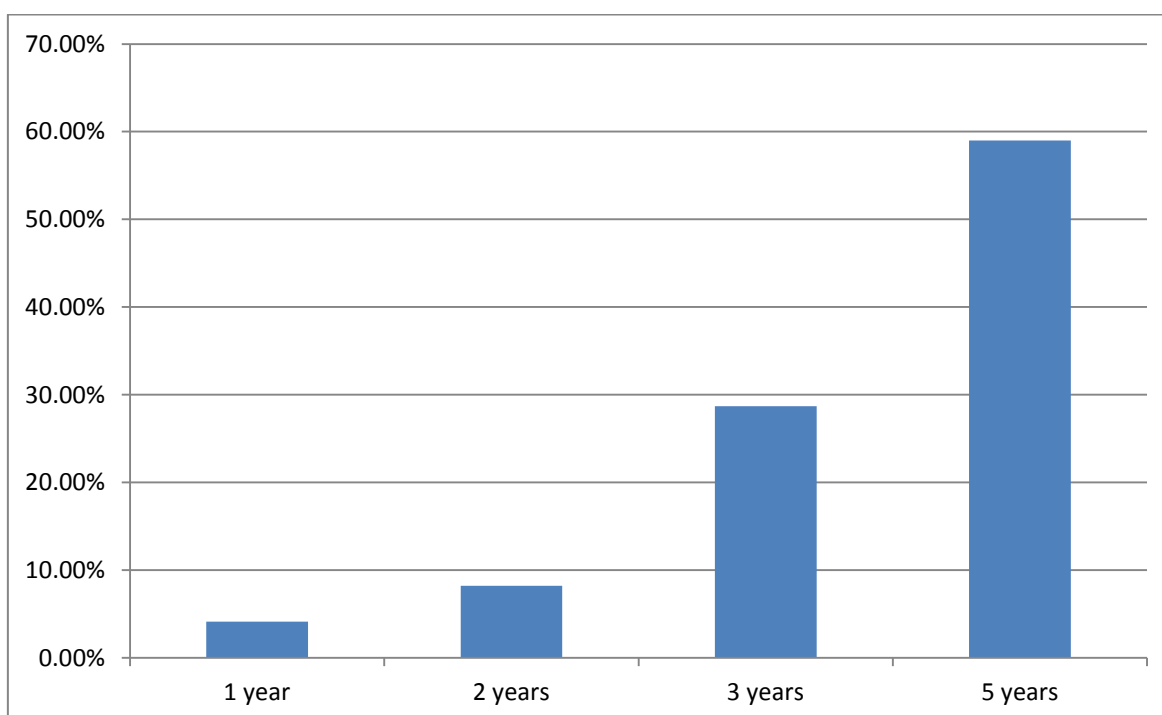


(Source: Survey data)

Among of capital which households want to borrow concentrates from 50 million to 100 million VND with 55.8%. Some have greater demand for loans from 200 million VND to 300 million VND with 13.9% because they want to build a farm and install a biogas plant with a large size. Households having large demand focus on 04 provinces Bac Giang, Lao Cai, Son La, Ben Tre. Households in Soc Trang have lower demand with amount from 10 million to 30 million VND. Soc Trang is different from other provinces because of having high rate of Kho Me people, high rate of poor households and they are all very afraid of large loans. On the other hand, most households having certificates of field use right are having loan in Bank of Agriculture and Rural Development in order to invest in rice farming. When being asked about the

certificates of land use right, households told that their certificate of land use right isn't as much as valuable so that Banks cannot make loan for these households – except households have lots of field and certificate of field use right. However, these households only borrow with amount from 20 million VND to 30 million VND. The households in 09 provinces have large credit demand because of having large-scale livestock, better economic conditions and they find that they have an ability to pay off their loan. 100% of households intend to repay loan from benefits of their livestock. Some use a part of their monthly salary to repay the loan. Duration of the loan that households want to borrow focus on form 3 to 5 years in order to use for a long time with 87.7%. However, they still want they can pay prior to maturity if they have condition.

Chart 23: Wanted loan duration of potential households

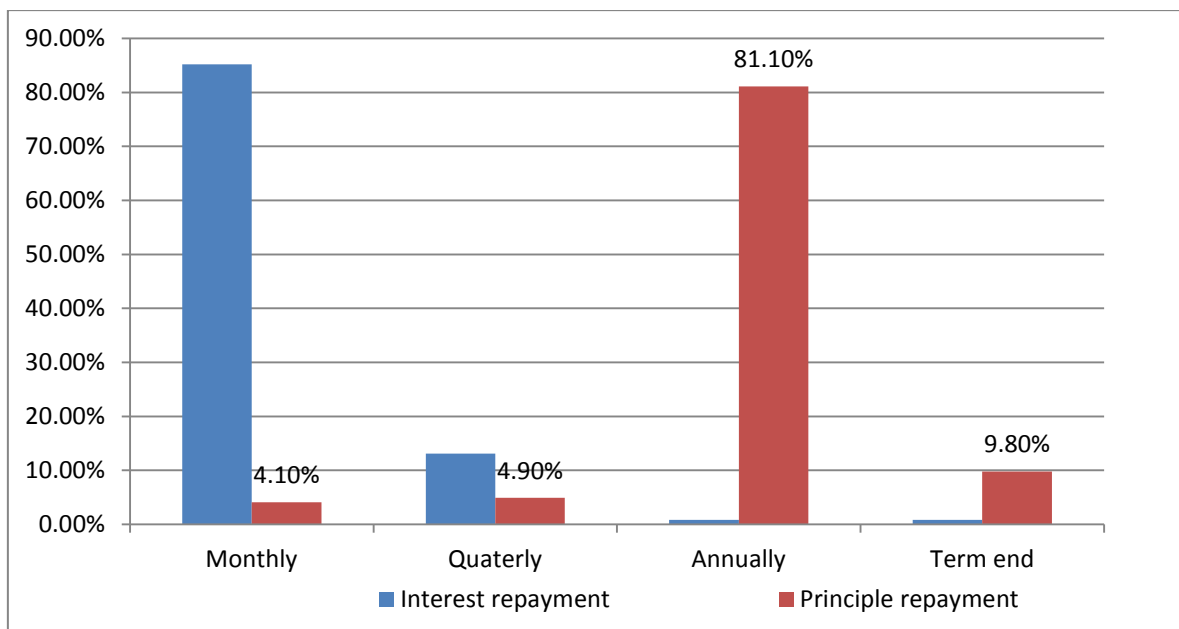


(Nguồn: Điều tra khảo sát)

85.2% of households want to pay interest on a monthly basic, some want to pay on quarterly and a few want to pay on manually basic or end of term. Most households want to divide the loan to pay on an annually basis with the rate of 81.1%. This is general psychology of all borrowers; they want to divide the loan to reduce the burden

of the repayment. Some want to borrow and repay by the end of the period in order to reinvest to livestock, but it only accounts for 9.8%.

Chart 24: Expectations to repay principles and interests of potential households



(Source: Survey data)

2.2.3. The participation of the two financial institutions

2.2.3.1. Vietnam Bank for Agriculture and Rural Development (VBARD)

Agribank’s network covers all the project provinces, which has branches and transaction offices in all districts and cities. In 10 surveyed provinces, the consultant found that Agribank Bac Giang and Lao Cai branches disbursed 3.374 million VND (total disbursement of Agribank Bac Giang and Lao Cai is 1.429 million VND for 36 biogas plants and 1.945 million VND for 144 biogas plants, respectively). This is also the first two branches of Agribank disbursed project budget in the 10 provinces, and also the most enthusiastic branches in disbursing the project budget.

a. Difficulties in disbursing project budget to large and medium husbandry enterprises

According to shares of Agriabank, they couldn’t disburse the project budget because of the following reasons:

- Most of the large farms currently borrow from Agribank. The certificates of land use right, which were previously valued, can be only used as collateral for loans equivalent to the current loan amount that enterprises borrow from banks. It's impossible to take out further loans without other collateral.
- Limits credit applied to items of the project: No use is allowed into the project item of livestock stable building. Meanwhile, loans from banks will have more diverse purposes, which meet clients' demand. The clients want to borrow more for a total investment including stables and husbandry development. That's why big loans from banks will meet borrowers' demand, as well as expectations of Agribank's credit officers during the completion of loan procedures.
- Currently the project has LCASP technical standards and quality for small-scale biogas plants with volume not exceeding 50m³. For the medium and large scale projects, the project has guided the implementation of environmental items and introduced biogas companies/builders meeting quality standards, in order for banks and farm owners consider and take out loans for construction of biogas plants under "commercial practices" as defined in the documents of the project. Currently, small parts of gas generated from the large biogas plants are also only used for cooking purposes. The use of electricity generating gas has yet to meet the quality requirements, and farm owners cannot gain profit from this. So enterprises investing in biogas projects are only dealing with the environmental pollution reduction. The investment for large biogas plants at this moment is not beneficial because there's no surplus processing technology, so if the amount of surplus gas is discharged directly into the environment, it will pollute much more without biogas process.
- Equipments that use gas such as electricity generator tend to get rusty when using biogas; this does not encourage investment among users.
- The project items of liquid waste processing and biogas leftover processing, or producing organic fertilizer at medium and large farms all have no

technical technology. This is why enterprises themselves can't invest and banks can't approve further loans.

- Currently, some provinces (Ha Tinh, Son La) has their own policy to support the development of livestock industry, such as interest rate support for farmers, which is more attractive to enterprises that borrow from the banks with the variety of items than borrowing loans from project funds.

b. Small biogas plants

According to share of Agribank's staff, each household/ each plant receives 3 million as financial support. The households contribute 20% self capital, and the project lends the remaining 80% amount (with limits of biogas-related items). With such regulations of the project, the loan size will be quite small, from 10 to 15 million VND, and they require households to leave the certificates of land use rights during the loan procedures. On the other hand, small loans are not attractive and cannot encourage credit staff to seek new customers.

The objective barriers of policy mechanisms: Under the provisions of Article 9 of Decree 55/2015 ND-CP dated June 09th 2015 by the Government on credit policy to serve agriculture and rural development, the mechanism to ensure capital for **commercial banks** is as follows: *The customers receiving loans without security assets must submit to the lending credit institution the certificate of land use right, or the document certifying that they haven't received the certificates of land use right with no conflict, confirmed by Communal People's Committee.* This is one of the biggest obstacles for households wanting access to the credit source of the project. According to project documents, households can borrow without collateral up to 100 million VND, as prescribed 55/2015 /ND-CP, the Agribank still requires to keep the certificates of land use right when households wants to borrow, despite small loan amounts. This discouraged the borrowers and even when they do hope to take out loans, they can do nothing because they don't meet the banks' requirement.

According to the share from the local Agricultural Bank staff, the lending rules are too strict when it comes to loan from the project fund. In addition to loan document as per current regulations of Agribank, households need to add the following items²:

- Application for support from PPMU and approved by PPMU
- Technical Assistance Agreement between the households and PPMU
- Approved acceptance record of the construction
- Copies of financial support from PPMU

According to the above procedural requirement, if households want to invest in biogas plants, they will find access to credit by themselves. In this case, households will be disbursed after completing the biogas plants and procedural requirement of financial institutions. That procedure remarkably hinders the disbursement of credit for small – sized biogas plants and discourages households to borrow. These requirements about loan documentation are different from the guidelines of the banks from the training seminar for bank officers, who are involved in the project, as well as credit propagation material (loan procedures) of Agribank³. Credit officers of Agribank in provincial and district branches have noticed difficulties and shortcomings in the disbursement but they did not know how to solve or did not present this difficulty to Agribank or CPMU for solutions.

c. Agribank’s marketing for the project

According to shares of the PPMU, the Agribank in some provinces are quite enthusiastic in implementing the project. Some provincial Agribank has assigned their representatives to propagate at some training conferences about biogas technology held by the project. However, such propagation has been only included in biogas training classes rendered by PPMU. It hasn’t reached out to local husbandry households. The survey results show that the local residents almost have no information about the bank credit. The propagating and promoting activities for credit products are only included in the biogas propagation in the training classes rendered by PPMU. As for Bac Giang and Lao Cai provinces, thanks to the drastic participation

of Agribank and the provincial project management board, a small amount has been disbursed.

The level of information awareness about credit components of households is as below: Nam Dinh (35%), Bac Giang (30%), Lao Cai (35%) and Soc Trang (35%), these provinces have higher rates than the remaining provinces. In Phu Tho, Son La, Tien Giang, Ha Tinh, almost 100% of the interviewed households don't have information about the project's credit package.

Regarding the households already having biogas, the interview results of 100 households show that only 30% of the households have known about the credit component of the project, and only 1 % of the households have accessed the credit source of the project.

Regarding large-scale husbandry enterprises, almost 100% of the interviewed commercial banks answered that they have no information about the credit package of the LCASP. Regarding small-scale husbandry enterprises, the information awareness about the credit component is very limited. Almost 100% of interviewed enterprises have no information about the project's credit support packing.

The consultant headed to the People's Committee office of Xuan Tan commune, Xuan Truong district, Nam Dinh; then met with the Women's Union, Farmers' Union and representatives of entity and authority organizations, all members claimed that they didn't know and there was no bank providing information about this loan package. As Mr. Long – the president of People's Committee – confirmed, and Mr. Dong – the vice president of People's Committee of Xuan Kien commune – eyewitnessed that: “Both Agribank and Coopbank haven't shown any information about this LCASP's credit package, all households didn't know anything, the only thing they knew is the 3 – million – support for small biogas plants, which they heard from the project officers, as well as the 10 – million – support for medium plants, and 20 – million – support for large plants. The LCASP's marketing activities of the banks are still very limited. The limits are shown in the situation in the headquarters of 2nd and 3rd level branches of Agribank, where the consultant was to do the interviews,

there was no panel, placard, leaflet or any other form of propagation for the credit package of the LCASP being displayed.

According to consultant’s analysis, Agribank haven’t implemented any propagation about the LCASP’s credit package to residents, because of the following reasons:

- Medium and large enterprises are the bank’s customers already. Due to the limits applied to the project components’ targets, the loans from this project cannot exceed the amount that the customers currently borrow from the bank.
- Loan offered to households are too small due to limits in credit support as per the project component. Besides, according to the Government’s requirement, the banks need to keep the certificates of land use rights. If the clients need to borrow, no matter how small the loan is, it can’t be attractive. Moreover, according to the current policies, the banks can disburse only 85% of the project budget, the banks contribute 15% from their own funds. When the loans are small, the budget classification will increase administrative procedures and reduce motivation from the banks’ credit officers, because they have to put a lot of work into small loans. More complicated procedures also hinder the motivation of the credit officers from seeking new borrowers.

To achieve disbursement target in Bac Giang and Lao Cai provinces, it’s necessary to gain participation from the PPMU, as well as gain the propagation from the Women’s Union, and the Farmers’ Union, and enthusiasm of the branches of the 2 banks. These entities all reflected that, residents have high demand, but they find it very difficult to access loans due to complicated procedures in lending process. Especially, the formal document sent claims that the banks won’t require collateral, but in fact the banks still require to keep the certificates of land use rights.

In conclusion, the consultant figured out the reasons why the bank cannot disburse the budget of the project as below:

- The potential customers (large enterprises, small and medium enterprises) already have outstanding loan in the banks. The bank budget meets high

demand for loan purposes such as breeding, building stables, sparing a part for biogas, then meet higher demand from customers, and make it easier for credit officer when assessing the loan document.

- The bank doesn't have any propagating or advertising program for the project's credit. The credit is only known thanks to the training course about biogas program organized by the PPMU. Residents only know about the credit back through some general information given by the province's and the district's project management officers. The households don't master the specific information, as well as the loans. There are no bank officer propagating and giving instructions. Almost every resident claimed that they didn't know anything about the credit, except for the 3 – million – support.
- The project limits the borrower targets, which cannot meet the credit demand of residents. The livestock pens are not allowed to be repaired, so the loans cannot be disbursed. According to the consultant's opinion: This demonstration is partly correct, but it is not satisfactory to explain why the project's capital sources cannot be disbursed. That is because the bank can definitely hold a subjective position in lending by using the bank's capital sources, to components that are not supposed to be financial supported by the project, and using the project's capital sources for components financially supported to meet credit demand of customers. However, this will take a lot of efforts from the banks' credit officers.
- For households, due to loan object restrictions as stipulated in the loan agreement, the banks can only lend 85% of project funding and 15% as corresponding fund from the banks. This is a small amount but complicated and effort consuming. However, although the loan is small but Agricbank still requires keeping the certificate of land use rights, because Agricbank has to comply with Decree 55/2015/NĐ-CP of the Government on the loan guarantee mechanism for **commercial banks**. *The customers receiving loans without security assets must submit to the lending credit institution the certificate of land use right, or the document certifying that they haven't received the*

certificates of land use right with no conflict, confirmed by Communal People’s Committee. This makes it more difficult for households to borrow small loans, and makes it impossible to disburse such a loan.

2.2.3.2. The Cooperative bank

In the end of March 2016, Co-op bank made a decision to issue a manual instructing loan procedure from Central Coopbank to local branches, exchange offices and people’s credit fund. Therefore, the bank has yet to deploy the project fund. According to shares from Central Coop-bank, the bank encounters some internal issues that lead to difficulties in disbursing the project budget.

- The capital of the bank is currently quite abundant, and redundant in some local funds⁴.
- Co-op bank, formerly known as Central People's Credit Funds was founded in 1995, and transformed to Co-op Bank in 2013. The Bank has a very limited branch network compared to Agribank. Among 10 provinces surveyed, only 5 provinces that have transaction branches of Co-op bank including Nam Dinh (branch), Ha Tinh (transaction office) and Phu Tho (both branch and transaction office), Binh Dinh (both branch and transaction office), Soc Trang (branch and transaction office). Bac Giang, Lao Cai, Son La, Tien Giang and Ben Tre has no branch or transaction office. This prevents Co-op bank to directly deploy the project fund. However, Co-op bank has a network of 1148 communal people credit funds. Therefore, in order for loans to be disbursed, Co-op bank must disburse through its communal funds. But until the time when the consultant conducted surveys, these communal credit funds had not deployed any activity and also had no full information about the LCASP credit package, because Co-op Bank just issued a official decision on the issue of LCASP management manual, dated March 28th 2016. According to information provided by Central Co-op bank, dated May 2016, Co-op bank has disbursed 2.5 billion VND in Binh Dinh branch.

2.2.4. *Satisfaction level of the households*

2.2.4.1. Satisfaction about the biogas plants

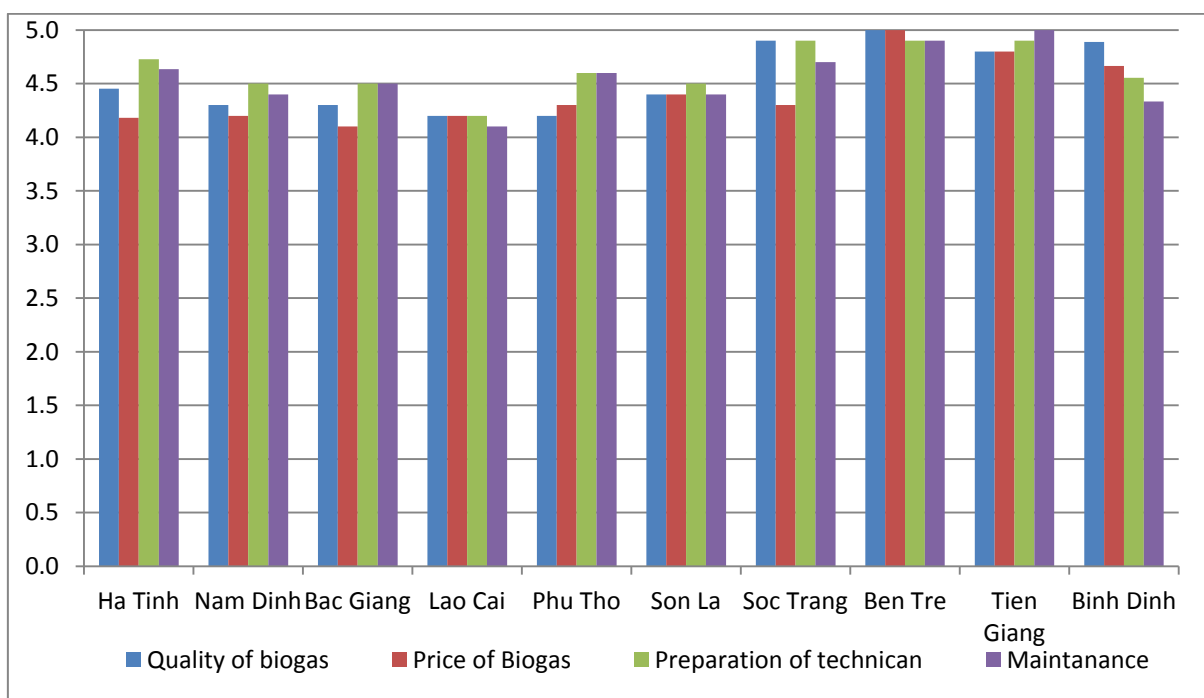
The credit consultant surveyed 100 households already having biogas plants in the 10 provinces, and received good feedbacks about the quality of the biogas plants, as well as the installation and maintenance of the local technical officers.

To assess the satisfaction of the households already using biogas, the consultant implemented questionnaire surveys based on grade levels. The assessment levels are as below:

- 1: Very unsatisfied
- 2: Unsatisfied
- 3: Normal
- 4: Satisfied
- 5: Very satisfied

Based on the survey results, the satisfaction level of households about biogas quality, price reasonability and behavior of local technical staff are presented as the following chart:

Chart 25: Evaluating the satisfaction of the households already having biogas plants



(Source: Survey data)

From the chart above, the consultant learns that the provinces all implemented the project very well with good feedback from the households. In all provinces, all criteria have the average grade at more than 4 points, which means over the satisfaction level. Almost every household highly appreciate the usefulness of the biogas plant installation. Thanks to the biogas plants, the surrounding environment of the households no longer has unpleasant odor. The households share that before the biogas plants were built, the surrounding areas of stables always have extremely unpleasant odor with a lot of flies and mosquitoes. After the plants were built, the unpleasant odor has considerably reduced; flies and mosquitoes no longer exist. The neighbors no longer complain about the bad odor coming from the stables. Besides, the gas amount generated from the plants meet the gas demand that needs for the family’s daily life. There are even households having surplus gas and willing to share gas to households nearby. This is the best solution for households with biogas when the generated gas amount exceeds the family’s need. Because if they don’t share gas with others, the households will have to burn the gas by themselves or let the gas flow directly to the outside environment. The burning of the gas wastes the energy sources, and the direct flows of gas into the outside areas will pollute the environment even more than when livestock waste is not processed. In addition, the preparation and maintenance of the biogas plant suppliers/installers are both highly appreciated. The implementation was rapid; the plant builders were experienced, enthusiastic and careful. The local technical officers always keep track and show concerns about the using progress of biogas plants after installation.

Regarding the effectiveness of biogas plants, the households with biogas plants all highly appreciate the benefits they receive. 100% of the households agreed that after the construction/installation of biogas plants, the surrounding environment has reduced bad odor and diseases because there are no longer lots of flies and mosquitoes, which helps the women reduce chores, including stable cleaning and cooking. Before the biogas plants were installed, the households must directly enter the stable to sweep and collect the wastw into the waste storage. The direct exposure with livestock waste

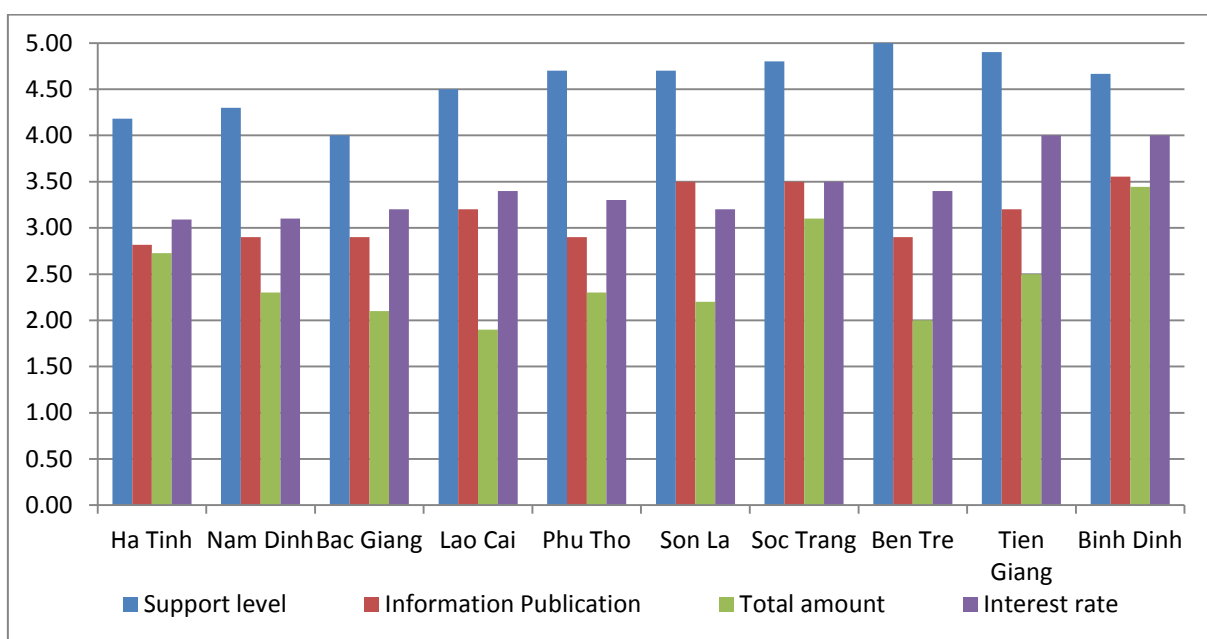
leaves many impacts on health of the stable cleaners. However, after the plants were installed, the households only need the water pipes to clean to stable, the waste will flow down into the biogas tanks, which save time and avoids health-affecting factors. In addition, the generating of biogas for cooking also helps the households to save time which was spent for firewood and straw collecting. Cooking time is also reduced considerably.

2.2.4.2. Satisfaction of the households about the project’s credit component

In general, through the survey, the consultant learns that the households are very satisfied with the 3 – million – support from the project, as well as the enthusiasm of the technical staff in receiving such support. The households are well aware of environmental protection, they therefore really want to install biogas plants, but they haven’t due to lack of capital. The 3 – million – support is an encouraging method which makes households more enthusiastic to accept the plant construction /installation. However, the information publication of the project is still limited; the households only get information from 2 sources including bank officers and introduction of relatives and friends, but they almost know nothing about the credit support. Being asked about project’s credit information approach, many households appeared surprised because they didn’t know anything about the credit support information, and they didn’t borrow for biogas plant installation. Among 300 surveyed households, only 21.56% of the households said that there was information about the credit package of the project, but they didn’t master the preferential contents. The information is mainly provided by the project officers during the documentation process of receiving support in connection with propagation about the credit component. The households said that there was no bank officer coming to propagate for them. Therefore, when assessing about the project’s propagation, the households are actually not satisfied. The grade gained is 2.8 – 3.5, which is equivalent to the normal level. The potential households in Lao Cai, Phu Tho, Tien Giang and Binh Dinh are quite satisfied with the interest rates; the average grade is from 4 points. The 6 remaining provinces assess as above average. This is because Ha Tinh currently

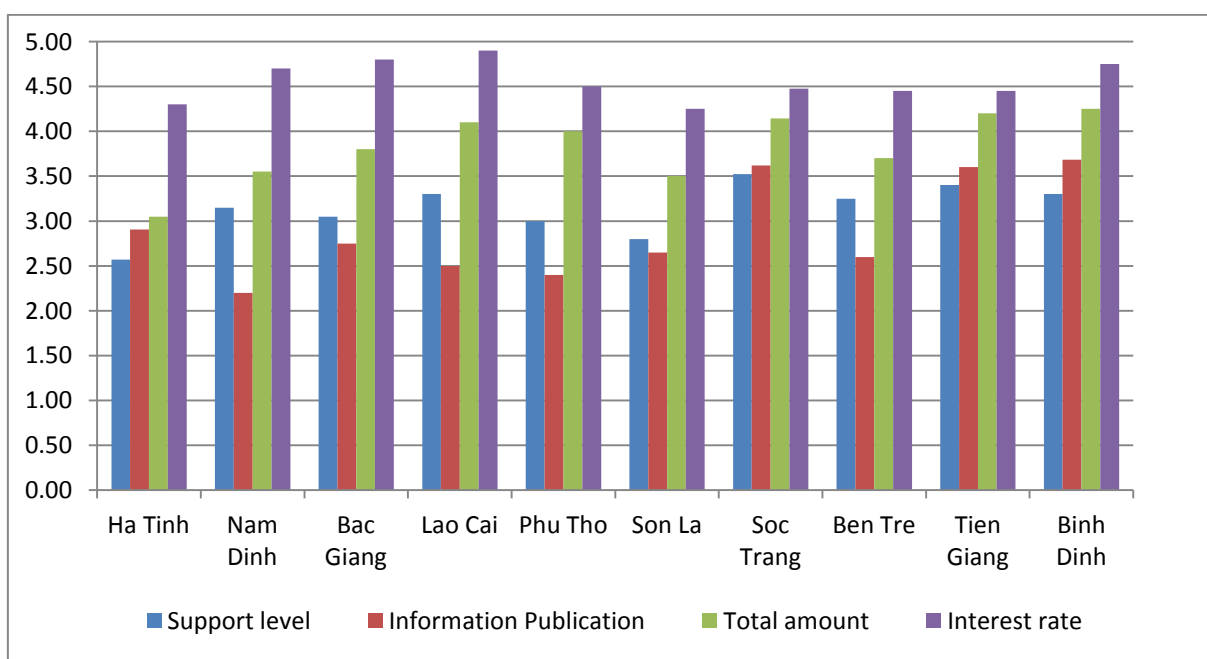
applies a policy, which supports 50% interests for the husbandry households. That’s why the 10% preference compared to normal interest of Agribank doesn’t attract many borrowers.

Chart 26: Satisfaction about the credit component of the households already having biogas plants



(Source: Survey data)

Chart 27: Satisfaction about the credit component of the potential households



(Source: Survey data)

The loan duration of the project is highly appreciated by the households. 10/10 provinces assessed as the average level with 4 points. According to shares from some husbandry households, they normally can borrow with 1 – year – loans, even 6 – month – loans. With such short time loans, the households often get worried about repaying the loans. Thus those households always wish to take out longer loans to invest for the reparation/renovation of the stables, and this takes them 2 years to generate profits and repay the loan.

3. CONCLUSION AND RECOMMENDATIONS

3.1. CONCLUSIONS

3.1.1. Credit demand

- **For large husbandry commercial enterprises:** 100% of the large husbandry commercial banks have credit demand due to the need to expand livestock production, large farms have loan demand to build stables, buy seed and upgrade waste collection system and invest into biogas to generate the synchronization of investment, especially using HDPE film for a number of basements that were previously degraded or overloaded. These enterprises also desire for process technology for excess biogas of large plants in order to get effective investment. However, it's difficult for this group to have more loans from the banks because of their relatively big outstanding amount.
- **For small and medium-scale farms:** 83% of the small and medium farms participating questionnaires answered that they would like to borrow more loans to expand livestock scale, upgrade or build more stables and install new biogas plants. Loan demand among small and medium farms fluctuates around 100-500 million.
- **For households:** Demand for credit by households is rather high. Nam Dinh has the highest proportion of households with credit demand, and reached 85% among households questioned. Followed by 65% is Phu Tho, 70% is Bac Giang, 80% is Son La, 55% is Ha Tinh, 55% is Soc Trang; and 50% is Lao Cai, Ben Tre, Tien Giang, Binh Dinh. Among households having demand for loans, 100% of households answered their loan purpose is to combine new construction or upgrading stables, purchase seeds, feed and build biogas plants in Ha Tinh, Nam dinh, Bac Giang, Lao Cai, Phu Tho with the demand for loans from 50 - 200 million. In terms of loans for biogas and stable upgrading, 100% of the households in Ha Tinh, Nam Dinh, Bac Giang, Lao Cai, Phu Tho, Ben Tre, Tien Giang have such loan demand. However, only few farmers agreed to borrow for a separate biogas plant, and on the condition that they won't have to hand the certificates of land use rights and the loan procedure is very simple. It can be referred from these results that most of the households with loan

demand wish to connect the 2 purposes, one for biogas plant installation, and the latter is for repairing and upgrading the stables.

3.1.2. Reasons why the two banks cannot disburse the project budget

According to survey data, the demand for credit at the level of households, small and medium enterprises is large, however, the approach of the project budget is very difficult coming from objective reasons and subjective ones as follows:

3.1.2.1. Objective reasons

- The Decree 55/2015/NĐ-CP by Government dated June 09th 2015 stipulates on the mechanism to loan safety for all commercial banks. Article 9 of this Decree states that: *The customers receiving loans without security assets must submit to the lending credit institution the certificate of land use right, or the document certifying that they haven't received the certificates of land use right with no conflict, confirmed by Communal People's Committee.* That means all customers are required to hand the certificates of land use right. Meanwhile, some households, enterprises already handed these certificates because they already have loans in the banks, that's why they can't access further loans. Some of the remaining households don't want to borrow for only biogas installation (small amount) if the land certificates have to be submitted.

- From the project's side: (i) According to the initial design of the project, the credit funds from project sponsors are provided to only limited items such as construction/ installation of the biogas plants and that related waste collection systems, disinfection tank to reduce the spread of disease to livestock, natural gas pipeline, the device using gas, the environmental remediation items such as sewage tank, separate collection tank, sewer washing cages. Credit resources from projects funded credit only for limited items while customers want to borrow more and the number of multi-purpose to expand livestock, constructing/ upgrading stables, constructing/ installing biogas and waste collection tanks. The purpose of the project loans is limited and this makes loan less attractive and prevents disbursement from the financial institutions as well.

3.1.2.2. Subjective reasons

From the Agribank:

- Most of the farms having outstanding loans at the Agricultural Bank find it's difficult to borrow more because the maximum lending rate also reached the point where enterprises are able to borrow, so they cannot borrow unless enterprises have other collateral.
- Loan from project budget is not appealing because there are limits for credit component. Meanwhile, loan from the banks is more various and this meets the requirements of the clients, and the loan procedure is much easier.
- According form share of Agribank, they have to comply with the rules stated at Point d Clause 3.01 Article III in the lending agreement between the Finance Ministry and Agribank: *“The bank provides second loans to households, enterprises eligible for re-borrowing, if these biogas value chains and environmental items meet requirements for technique, society, environment, economy and finance as stated in the Project Management Handbook”*. Therefore, Agribank decided so strictly about the procedures for small loans. In addition to loan documents as current regulations of Agribank, they also require: 1) Application for support from PPMU and approved by PPMU, 2) Technical assistance agreement between the households and PPMU, 3) Approved acceptance record of the construction, 4) Copies of financial support from PPMU. With this regulation, the banks can only disburse when the household have already started the construction and invested by themselves. After the construction is accepted, the bank can disburse the fund based on the acceptance results from PPMU. This loan procedure makes it extremely difficult for households to get access to loans, make them discouraged and get frustrated with the project fund. CPMU shared that this requirement doesn't match with instruction information from lectures of Central Bank at training seminar for staff of banks involved

in this project, as well as propagation credit documents that Agribank shares about the loan procedure of banks attending the seminar ⁵.

- The marketing activities for credit component of this project are not implemented dramatically. Agribank only introduces credit products of the project through project training courses. The bank hasn't had separate marketing activities for credit products; they don't have panel, palette, leaflet to promote credit products to clients, or propagate on public media, that's why almost all residents can't obtain information of this project budget.
 - Agribank currently have a quite abundant fund to meet the needs of loans from borrowers, with various loan purposes, simple and easy loan procedures, so the lending with the project fund will be difficult owing to limits in credit component.
 - Some provinces have credit support policy for livestock farms, this also limits the disbursement from the project (Ha Tinh, Son La)
- ***From the Cooperative Bank***
- The central cooperative bank (Co-op Bank) is formerly known as Central People's Credit Fund transformed into Co-op Bank in 2013. Currently Co-op bank has 27 branches all over the country with 1114 local people's credit fund. The network of Co-op bank is quite limited compared to Agribank. Among 10 provinces joining the LCASP that were surveyed by the consultant, there are only 05 provinces having branches or transaction offices. This limits the bank from directly disburse the fund for credit package of the project. Co-op bank needs to deploy through its members, which is the local people's credit funds.
 - Up to March 28th 2016, Co-op Bank officially issued an instruction handbook and transferred it to the branch, the transaction offices and people's credit fund in March 2016. So when the consultant conducted surveys, the funds had yet to propagate or provide any loan.

- Co-op bank hasn't cooperated with PPMU in deploying credit component of the project. They also don't introduce credit products in PPMU's training courses as well.

3.2. RECOMMENDATIONS

3.2.1. For the two banks

- ✓ The Central banks of the 2 financial institutions including Agribank and Coopbank need to cooperate with the LCASP's CPMU to study the project's documents and clearly analyze the components that the project are heading to. The central banks of these two banks need to consider giving loans from the banks' sources as well, in order to meet credit demand of residents, and allowing 2 capital sources for 1 loan application. The capital from ADB will be used for credit component of the project. As for other components, other sources will be used depending on the banks' request. This will meet the customers' credit demand for investment and help open up the capital. It's possible to seek for written approval of ADB and the project management board. The two banks also should request ADB to allow 100 – per cent – usage for sponsoring components of the project. The banks will use their sources for components that do not receive credit sponsor by the project to meet credit demand of customers, and to be easier in managing loan sources.
- ✓ The disbursement procedures and principles for customers should be simplified: Removing requirements of application for supporting documents from the provincial project management board, technical support contracts, the plant quality acceptance, copies of financial support. For disbursement purpose, the bank only needs a list of customers applying to use the plants with quality stipulated by the PMU, and approved by the PPMU. In order to comply with the quality criteria stated in the loan treaty of the project, Agribank's credit officers need to co-operate with the PMU to check and supervise the borrowers after the disbursement.

- ✓ Boost marketing activities for project fund, such as leaflets, placards, panels at both of banks’ offices and communal people’s committee, boost propagation about lending on public media such as radio station, television of districts, communes, be able to negotiate with PMU to consider support budget for this marketing program.
- ✓ The Co-op bank must be very quick to instruct training for the training handbook of project credit, conduct training in branches, transaction office, as well as its member – the local people’s credit fund. They have to closely cooperate with PPMU to boost propagation for credit fund of the project through Co-op bank.

3.2.2. *For the CPMU and ADB*

Currently the residents’ credit demand is quite high and it’s necessary to achieve the project’s goals. The application of biogas technology in processing livestock waste does bring about remarkable impact, which helps reduce environmental pollution, off biogas as a renewable energy to prevent deforestation, reduce efforts and cooking time for women as well. According to the consultant, the disbursement for biogas at household level is the most feasible at this moment. Estimates show that credit fund of the project is around 42 million USD (more than 934 billion VND). If each household borrows 20 million on average, the budget will be enough for about 46,000 borrowers. This amount is completely possible. The survey also shows that demand for loans of household is really high and necessary. Therefore, the project needs to remain and continue the credit component (the second component). However, in order for the budget to be disbursed, the CPMU need to consider the following solutions:

- ✓ It should consider letting the Vietnam Bank for Social Policy (VBSP) participate in disbursing the project budget as an integral factor to ensure the high feasibility for disbursing and achieving the project’s objectives. It is because: This bank has a nationwide network, from central to local levels, including 10 provinces of the project. This bank also applies the lending principle in microfinance, which doesn’t require collateral or certificate of land

right keeping. It only uses trust loans from entities and authorities, which is a really necessary condition to disburse to the small husbandry households, making it easy for them to the project’s credit. On the other hand, this bank has also experienced in disbursing small loans for biogas without collateral from the rural sanitation programs, and so the project’s disbursement will be quicker and easier. A representative from the Vietnam Bank for Social Policy claimed that: The bank is completely able to disburse the credit fund of the project in 2 years’ time, because if each household/construction borrows 20 million VND, the bank can disburse 42 million USD, equivalent to more than 900 billion VND. Moreover, the project budget is mid-term and long-term, this is good for the bank to disburse as per loan purposes of the project, lending without collateral up to 50 million VND, which is really favorable for the bank to quickly disburse this budget (See details in Appendix 5).

- ✓ Consider the participation of microfinance institutions having microfinance activities in the project provinces such as: TYM microfinance organization (working in Nam Dinh), M7 microfinance institution working in Son La. Currently, the government has assigned the State Bank of Vietnam to compose the decision of the Prime Minister about the operation of microfinance programs. If this decision is issued before the mid-term evaluation, then it’s suitable to consider the participation in disbursement of microfinance programs in the project provinces, such as the Economic Development Fund for Poor Women in Ha Tinh, Microfinance For Community Development Fund (Son La, Nam Dinh). Economic activity support funds for women in Tien Giang and Ben Tre. Because these organizations provide small loans without requiring collateral, this will meet the requirement in disbursing micro credit to livestock households for household biogas plants.
- ✓ The CPMU should also consider the recommendation with ADB to allow expansion for credit sponsor component toward the renovation or the upgrading of stables, to create uniform investment for livestock enterprises and households borrowing, because when they build the waste collection system,

they will also want to renovate the run-down stables. Removing this item will cause difficult for banks in approving loans for these households.

- ✓ The project also needs to speed up the implementation of model in the third component. If these models are successful, it will be a basis for livestock enterprises and households to apply and replicate the models, which leads to the increase in disbursement for these models.

PART IV: APPENDIX

APPENDIX 1 - QUESTIONNAIRE OF HOUSEHOLD WITH BIOGAS PLANTS

Place	Code
Province
District
Commune
Date of interview	___/___/_____

I. HOUSEHOLDS' INFORMATION

Q1: Name of household head:

Q2: Gender of household head: 1. Male 2. Female

Q3: Ethnic of household head:

Q4: Year of birth:

Q5: Education level of household head:

1. Non schooling 2. Primary 3. Secondary school 4. High –school
5. College 6. University 7. Master/Doctor

Q6: Number of household member:

Q7: Number of labors of your household (over 18 ages and under 60 years):
.....

Q8: In the past 1 year, total income of your household:Mil. VND/year

Q9: Which sectors bring mostly income of your household?

1. Cultivation 2. Livestock 3. Small business
4. Craft 5. Salary/pension 6. Other:

Q10: In the past 1 month, total expenditure of your household:

Cost	Amount
Food Expenditure	
Health Expenditure	
Education Expenditure	
Non – food Expenditure (Water, Electronic, wedding or funeral,...)	
Interest rate cost	
Investment on agriculture or business	
Total	

II. LIVESTOCK INFORMATION

Q11: In the 1 recent year, how many livestock did your household raise?

1. Pig (.....Sow.....Market hog) 2. Cow (.....unit) 3. Buffalo(.....unit)
4. Goat (..... unit) 5. Sheep (..... unit) 6. Other (..... unit)

Q12: In the next 2 years, do your household expand livestock scale?

1. YES (If YES go to Q 13) 2. NO

Q13: Expected livestock scale (included number of livestock):

- | | | |
|----------------------------------|-----------------------|-----------------------|
| 1. Pig (.....Sow.....market hog) | 2. Cow (.....unit) | 3. Buffalo(.....unit) |
| 4. Goat (..... unit) | 5. Sheep (..... unit) | 6. Other (..... unit) |

III. INFOFRMATION OF BIOGAS PLANTS

Q14: Why did your household impletement biogas plants?(Can choose more than one)

- | | |
|--|--|
| 1. Gas demand | 3. Project’s support for biogas plants (cash, technical) |
| 2. Solve environment pollution of farm | 4. Both |
| | 5. Other: |

Q15: Total invest of Biogas project: Mil. VND

Q16: The size of your digesters:cubic meters (m³)

Q17: When did your household implement biogas plants?

Q18:What material did your households used to implement biogas plants?

- | | |
|------------------------------|---------|
| 1. Bricks, cement (KT1, KT2) | 3. HDPE |
| 2. Composite plastic | |

Q19: Information sources of LCASP’s project:

- | | |
|------------------------------|--------------------|
| 1. Project’s staffs | 5. Leaflet |
| 2. Friends | 6. Local radio |
| 3. Seft – learning knowledge | 7. Training course |
| 4. Television, news | 8. Other: |

Q20: What support item did you know?

1. Technical support for biogas plants
2. Financial support of project (3 mil. VND)
3. Support to access to credit from VBARD, Co – opBank, PCFs for biogas investmen
4. Other:

Q21: What benefit of LCASP’s project did your household gain? (Can choose more than one option)

- | | |
|--|------------------------------------|
| 1. Technical support for biogas plants | 3. Credit support for biogas plant |
| 2. Financial support of project (3 mil. VND) | 4. Both |

IV. INVESTMENT FUND AND CREDIT DEMAND

Q22: Current financial sources in your local:

- | | |
|--|-------------------------------------|
| 1. Vietnam Bank of Agriculture and Rural Development (VBARD) | 5. VietcomBank |
| 2. Vietnam Bank of Social Policy (VBSP) | 6. Vietinbank |
| 3. People Credit Fund (PCF) | 7. Microfinance Institutions (MFIs) |
| 4. Vietnam Bank of Invesment and Development (BIDV) | |

Q23: What financial source does your househod maily borrow?

- | | |
|--|-------------------------------------|
| 1. Vietnam Bank of Agriculture and Rural Development (VBARD) | 6. VietinBank |
| 2. Vietnam Bank of Social Policy (VBSP) | 7. Microfinance Institutions (MFIs) |
| 3. People Credit Fund (PCF) | 8. “hội, họ (phường)” (ROSCA) |
| 4. Vietnam Bank of Invesment and Development (BIDV) | 9. Family, relatives |
| 5. VietcomBank | 10. Private lenders |

Source	Amount (VND)
1.	
2.	
3.	

Q30.1: Do your household has loan demand?

1. YES 2. NO

Q30.2: Loan amount..... Million VND, Manurity: Year

Q30.3: Loan purposes of your household (except biogas plant):

- 1. Purchase breed livestock
- 2. Construct livestock housing
- 3. Construction waste treatment system after biogas
- 4. Other:
- 5. Non other purpose

Q31: Sources for outstanding loan repayment:

- 1. From agriculture or business income
- 2. Saving
- 3. Loan from informal lender
- 4. Loan from friends or relatives
- 5. Salary or pension
- 6. Other

V. SATISFICATION LEVEL OF BIOGAS PLANTS

(Please tick one box in each row to assess your level of satisfaction with the following aspects)

	<i>Very Dissatisfied</i>	<i>Dissatisfied</i>	<i>Medium</i>	<i>Satisfied</i>	<i>Very satisfied</i>
Q32: Quality of biogas plants	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q33: Price of biogas plants	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q34: Preparation of implementing biogas plants of staff officer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q35: Warranty, maintenance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q36: Procedures to receive financial support to biogas project (3 million VND)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

VI. SATISFACTION LEVEL OF PROJECT’S CREDIT SERVICE

(Please tick one box in each row to assess your level of satisfaction with the following aspects)

	<i>Very Dissatisfied</i>	<i>Dissatisfied</i>	<i>Medium</i>	<i>Satisfied</i>	<i>Very satisfied</i>
Q37: Publication of credit information in LCASP project	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q38: Loan size	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q39: Interest rate of loan	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
----------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------

VII. EFFECTIVE OF BIOGAS PLANTS

Q40: When implement biogas plants, how about air pollution?

1. Singifincant decrease 2. Decrease, but not significant 3. No change 4. Increase

Q41: When implement biogas plants, how about waste discharged into the environment?

1. Singifincant decrease 2. Decrease, but not significant 3. No change 4. Increase

Q42: When implement biogas plants, how about time for cleaning livestock housing?

1. Singifincant decrease 2. Decrease, but not significant 3. No change 4. Increase

Q43: When implement biogas plants, how about disease in your livestock activity?

1. Singifincant decrease 2. Decrease, but not significant 3. No change 4. Increase

Q44: When implement biogas plants, do you save gas/fuel expense?

1. Not 2. Less 3. Much

Q45: How do you use waste after biogas?

- 1. Use totally organic fertilizer
- 2. Partly as organic fertilizer
- 3. Rinse out the entire environment
- 4. Other:

APPENDIX 2 - QUESTIONNAIRE OF HOUSEHOLD WITHOUT BIOGAS PLANTS

Place	Code
Province
District
Commune
Date of interview	___ / ___ / _____

I. HOUSEHOLDS’ INFORMATION

Q1: Name of household head:.....

Q2: Gender of household head: 1. Male 2. Female

Q3: Ethnic of household head:

Q4: Date of birth:

Q5: Education level of household head:

1. Non – scholling 2. Primary 3. Secondary school 4. High school
 5. College 6. University 7. Master/Doctor

Q6: Number of household’s member:

Q7: Number labor of your household (over 18 ages and under 60 years):

Q8: In the past 1 year, total income of your household: *Mil. VND/year.*

Q9: Which sectors bring mostly for income of your household?

- | | | |
|---------------------|--------------------------|------------------------|
| 1. <i>Cultivate</i> | 2. <i>Livestock</i> | 3. <i>Business</i> |
| 4. <i>Craft</i> | 5. <i>Salary/pension</i> | 6. <i>Other:</i> |

Q10: In the past 1 month, total expenditure of your household:

Cost	Amount
<i>Food expenditure</i>	
<i>Healthcare Expenditure</i>	
<i>Education Expenditure</i>	
<i>Non – food expenditure</i>	
<i>Interest rate cost</i>	
<i>Investment on Agriculture or business</i>	
Total	

II. LIVESTOCK INFORMATION

Q11: In the recent year, how many livestock did your household raise?

- | | | |
|---|------------------------------|-------------------------------|
| 1. <i>Pig (.....Sow.....Market hog)</i> | 2. <i>Cow (.....unit)</i> | 3. <i>Buffalo (.....unit)</i> |
| 4. <i>Goat(..... unit)</i> | 5. <i>Sheep (..... unit)</i> | 6. <i>Other (..... unit)</i> |

Q12: In the next 2 years, do your household expand livestock scale?

- | | |
|----------------------------------|--------------|
| 1. <i>YES (if YES go to Q13)</i> | 2. <i>NO</i> |
|----------------------------------|--------------|

Q13: Expecetd livestock scale (included number of livestock):

- | | | |
|---|------------------------------|-------------------------------|
| 1. <i>Pig (.....Sow.....Market hog)</i> | 2. <i>Bò (.....unit)</i> | 3. <i>Buffalo (.....unit)</i> |
| 4. <i>Goat (..... unit)</i> | 5. <i>Sheep (..... unit)</i> | 6. <i>Other (..... unit)</i> |

III. INFORMATION OF LCASP PROJECT

Q14: Why do not you implement biogas plants?(Can choose more than one option)

- | | |
|---------------------------------------|--|
| 1. <i>Smaller livestock size</i> | 5. <i>Topography inappropriate</i> |
| 2. <i>Lack of capital</i> | 6. <i>No need of impletement</i> |
| 3. <i>Lack of LCASP’s information</i> | 7. <i>Non long – term livestock plan</i> |
| 4. <i>Lack of installation area</i> | 8. <i>Other:</i> |

Q15.1: Do you know to LCASP’s project?

- | | |
|---|--------------|
| 1. <i>YES (If YES go to 15.2 >> 15.5)</i> | 2. <i>NO</i> |
|---|--------------|

Q15.2: (If any)Information sources of LCASP’s project:

- | | |
|------------------------------------|---------------------------|
| 1. <i>Project’s staff</i> | 5. <i>Leaflet</i> |
| 2. <i>Friend</i> | 6. <i>Local Radio</i> |
| 3. <i>Self – learing knowledge</i> | 7. <i>Training course</i> |
| 4. <i>Television, news</i> | 8. <i>Other:</i> |

Q15.3: What support item did you know?

1. *Technical support for biogas plants*
2. *Financial support of project (3 mil. VND)*

3. Support to access to credit from VBARD, Co – opBank, PCFs for biogas investment
4. Other:

Q15.4: Did you join training course of LACSP’s project? 1. YES 2. NO

Q15.5: What subject of training course did you join?

1. Benefit of impletement biogas plants
2. Construct/Install biogas plants
3. Use biogas plants
4. Warrantee biogas plants

Q16: Do you want to impletement biogas plants in the future?

1. YES(If YES go to Q17,18, 19)
2. NO

Q17: The size of your biogas plants in the future:

1. Under 10 m³
2. 10 - 20 m³
3. 20 - 30 m³
4. 30 - 40 m³
5. >40 m³

Q18: What material will your households use to implement biogas plants in the future?

1. Bricks, cement
2. Composite plastic
3. HDPE
4. Other material:

Q19: Total investment for biogas plants in the future:Million VND.

Q20: Total fund for biogas plants by your household:Million VND.

IV. INVESTMENT CAPITAL AND CREDIT DEMAND

Q21: Current financial sources in your local:

1. Vietnam Bank of Agriculture and Rural Development (VBARD)
2. Vietnam Bank of Social Policy (VBSP)
3. People Credit Fund (PCF)
4. Vietnam Bank of Invesment and Development (BIDV)
5. VietcomBank
6. Vietinbank
7. Microfinance Institutions (MFIs)

Q22: What financial source does your househod maily borrow?

1. Vietnam Bank of Agriculture and Rural Development (VBARD)
2. Vietnam Bank of Social Policy (VBSP)
3. People Credit Fund (PCF)
4. Vietnam Bank of Invesment and Development (BIDV)
5. VietcomBank
6. VietinBank
7. Microfinance Institutions (MFIs)
8. “hội, họ (phường)” (ROSCA)
9. Family, relatives
10. Private lenders

Q23: Information of current loan of your household:

Sources	Amount (Mil. VND)	Interest rate (%/month)	Maturity	At when (Year)	Purpose
<i>Vietnam Bank of Agriculture and Rural Development</i>					
<i>People Credit Fund (PCF)</i>					
<i>Vietnam Bank of Social Policy</i>					
<i>Farmer Union</i>					
<i>Women Union</i>					
<i>Microfinance Institutions (MFIs)</i>					

<i>Private lenders</i>					
------------------------	--	--	--	--	--

Q24: Do you know to financial support (3 million VND) of LCASP’s project?

1. YES 2. NO

Q25: If loan for only biogas plants or waste water treatment system, do you borrow from LCASP project?

1. YES 2. NO

Q26: Why do not you borrow for building biogas plants?

1. Lower loan size
2. Payable existing loans to new credit
3. Limitation of loan purpose (only for biogas plant and related items)
4. Higher interest rate
5. Complicated loan procedure
6. Collateral requirement
7. Other:

Q27: From 2014 to now, did you were introduced about credit package of LCASP project?

1. Yes 2. No 3. Don’t know

Q28: If YES, who did introduce credit package to you?

1. Vietnam Bank of Agriculture and Rural Development
2. Both
3. People Credit Fund (PCF)/Co –operative Bank
4. Don’t know
5. Project staff

Q29: Did you were introduced loan procedures in LCASP project?

1. YES 2. NO

Q30: If bank expand loan purpose (not only biogas plants and related items, but also other item like as housing, livestock...), do you want to borrow?

1. YES 2. NO

Q31: Loan purposes of your household (except biogas plant):

1. Purchase breed livestock
2. Construct livestock housing
3. Construction waste treatment system after biogas
4. Other:
5. Non other purpose

Q32: If expand loan purpose, your loan expectations:

1. Amount:Mil. VND

2. Maturity

- a. 1 year b. 2 years c. 3 years d. 5 years

3. Principal redemption frequency:

- a. *Monthly* b. *Quarterly* c. *Annually* d. *Cuối kì*

4. Interest redemption frequency:

- a. *Monthly* b. *Quarterly* c. *Annually* d. *Cuối kì*

Q33:Sources for outstanding loan repayment:

7. *From agriculture or business income* 10. *Loan from friends or relatives*
 8. *Saving* 11. *Salary or pension*
 9. *Loan from informal lender* 12. *Other*

VIII. SATISFACTION LEVEL OF PROJECT’S CREDIT SERVICE

(Please tick one box in each row to assess your level of satisfaction with the following aspects)

	<i>Very Dissatisfied</i>	<i>Dissatisfied</i>	<i>Medium</i>	<i>Satisfied</i>	<i>Very satisfied</i>
Q34: Publication of credit information in LCASP project	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q35: Loan size	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q36: Interest rate of loan	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q37: Loan maturity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q38: Interest repayment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q39: Principal repayment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q40: Charges incurred when borrowing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q41: Disbursement schedule	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

APPENDIX 3 - QUESTIONNAIRE OF MEDIUM – SIZED FARM/ENTERPRISE

Place	Code
Province
District
Commune
Date of interview	___ / ___ / _____

I. FARM’S BASIC INFORMATION

Q1: Name of farm’s owner:

.....

Q2: Gender of farm’ owner: 1. Male 2. Female

Q3: Education level of farm’s owner:

1. Non scholling 2. Primary 3. Secondary school 4. High school
5. College 6. University 7. Master/Doctor

Q4: Number of farm’s labor: person

Q5: Total revenue of farm/firm in 2015:.....million VND

Q6: Total expenses of farm/firm in 2015:..... million VND

Q7: Total income of farm/firm in 2015:..... million VND

Q8: In the past 1 month, expenses of your farm:

Cost	Amount
<i>Non – food expenditure (electric, water....)</i>	
<i>Waste treatment expenses</i>	
<i>Labor costs</i>	
<i>Interest expense</i>	
<i>Investment fund for equipping, upgrading and repair equipment of livestock housing</i>	
<i>Cost of fuel (gas, wood)</i>	

II. INFORMATION OF LIVESTOCK

Q9: In the recent year, how many livestock did your household raise?

1. Pig (..... Sow.....market hog) 2. Cow (.....unit) 3. Buffalo (.....unit)
4. Goat (..... unit) 5. Sheep (..... unit) 6. Other (..... unit)

Q10: In the next 2 years, do your household expand livestock scale?

1. YES (go to Q11) 3. NO

Q11: Expecetd livestock scale (included number of livestock):

1. Pig(.....Sow.....market hog) 2. Cow (.....unit) 3. Buffalo (.....unit)

4. *Goat* (..... unit) 5. *Sheep* (..... unit) 6. *Other* (..... unit)

III. INFORMATION OF LCASP PROJECT

Q12.1: Now, did your farm impletement biogas plants?

1. *YES* 2. *NO*

Q12.2: (If YES)The size of farm’s biogas plants: m³

Q13: Do you know to biogas information of LCASP’s project?

1. *YES (go to Q14)* 2. *NO*

Q14: (If YES) Information sources of LCASP’s project:

- | | |
|-------------------------------------|-------------------------|
| 1. <i>Project staff</i> | 5. <i>Leaflet</i> |
| 2. <i>Friend</i> | 6. <i>Local radio</i> |
| 3. <i>Self – learning knowledge</i> | 7. <i>Traing course</i> |
| 4. <i>Television, news</i> | 8. <i>Other:</i> |

Q15: What support item do you know?

1. *Technial support for biogas plants*
2. *Financial support for biogas plants (10 mil. VND)*
3. *Credit support to access to loan from VBARD/Co – opbank/PCFs for biogas investment*

Q16: Did you join training courses of LACSP’s project?

1. *YES* 2. *NO*

Q17: Do you have plan for implementing biogas plant in the future?

1. *YES (If YES go to Q 18, 19, 20)* 2. *NO*

Q18: Size of biogas plants in planning:..... m³

Q19: Material of biogas plant in planning:

- | | |
|-------------------------|------------------------|
| 1. <i>Brick, cement</i> | 3. <i>Other:</i> |
| 2. <i>HDPE</i> | |

Q20: Excepting biogas plants, what item related biogas plants do you want implemen in LCASP’s project?

1. *The system of waste collection tanks and processing equipment*
2. *Equipment using gas (gas pipes, stoves, generators, ...)*
3. *System storing, transporting and processing of secondary raw material after decomposition*

IV. INVESTMENT FUND AND CREDIT DEMAND

Q21: Current financial sources in your local:

1. *Vietnam Bank of Agriculture and Rural Development* 4. *BIDV*

2. Vietnam Bank for Social Policies

5. VietcomBank

3. People Credit Fund (PCF)

6. Vietinbank

Q22: What financial source does your household mainly borrow?

1. Vietnam Bank of Agriculture and Rural Development

5. Vietcombank

2. Vietnam Bank for Social Policies

6. VietinBank

3. People Credit Fund (PCF)

7. Friends, relatives

4. Bank for Investment and Development of Vietnam (BIDV)

8. Private lender

Q23: Information of current loan of your farm:

Sources	Amount (Mil. VND)	Interest rate (%/month)	Maturity	At when (Year)	Purpose
Vietnam Bank of Agriculture and Rural Development (VBRAD)					
Co – operative Bank/PCFs					
Vietnam Bank of Social Policy					
Farmer Union					
Women Union					
Informal lender					
Other bank:					

Q24: From 2014 to now, did you were introduced about credit package of LCASP project?

1. YES (if YES go to Q25, 26) 2. NO 3. Don't know

Q25: If YES, who did introduce credit package to you?

1. Vietnam Bank of Agriculture and Rural Development
 2. People Credit Fund/Co – operative Bank
 3. Both
 4. Don't know

Q26: Did you were introduced loan procedures in LCASP project?

1. YES 2. NO

Q27: Do you know to financial support (10 million VND) for medium – sized biogas plants in LCASP project?

1. YES 2. NO

Q28: If project's support is 10 million VND and loan to biogas plants, do you borrow from project?

1. YES 2. NO

Q29: Why do not you borrow for building biogas plants?(*Can choose more than one option*)

1. *Lower loan size*
2. *Payable existing loans to new loan*
3. *Limitation of loan purpose (only for biogas plant and related items)*
4. *Higher interest rate*
5. *Complicated loan prodedure*
6. *Collateral requirement*
7. *Other:*

Q30: If bank expand loan purpose (not only biogas plants also other item like as housing, livestock...), do you want to borrow?

1. *YES*
2. *NO*

Q31: (If YES) Loan purposes of your household (except biogas plant):

1. *Purchase breed livestock*
2. *Contruct livestock housing*
3. *Construction waste treatment system after biogas*
4. *Other:*
5. *Non other purpose*

Q32: If expand loan purpose, your loan expectation:

1. Amount:*Mil. VND*

2. Maturity

- a. 1 year b. 2 years c. 3 years d. 5 Years e. 10 years*

3. Principal redemption frequency:

- a. Monthly b. Quaterly c. Annually d. Single end – term payment*

4. If bank or PCFs require collateral, do you want to loan?

- a. YES b. NO*

Q33: Sources for outstanding loan repayment:

1. *From cultivation or business income*
2. *Owners capital*
3. *Loan from other bank*
4. *Other:*

V. SATISFACTION LEVEL OF PROJECT’S CREDIT SERVICE

(Please tick one box in each row to assess your level of satisfaction with the following aspects)

	<i>Very Dissatisfied</i>	<i>Dissatisfied</i>	<i>Medium</i>	<i>Satisfied</i>	<i>Very satisfied</i>
Q34: Publication of credit information in LCASP project	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q35: Loan size	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q36: Interest rate of loan	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q37: Loan maturity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

APPENDIX 4- LIST OF IN-DEPTH INTERVIEW AND QUESTIONNAIRE PARTICIPANTS

1. IN-DEPTH INTERVIEWS

CPMU officers

No	Full name	Position	Place
1	Nguyen The Hinh	Director of LCASP Project	Hanoi
2	Hoang Thai Ninh	Deputy Director of LCASP Project	Hanoi
3	Vu Huy Hoang	Technical staff of LCASP Project	Hanoi

PPMU officers

No	Full name	Position	Place
1	Nguyen Xuan Hoan	Director of LCASP Ha Tinh	Ha Tinh
2	Dang Danh Khanh	Planning staff	Ha Tinh
3	Dinh Ngoc Duc	Technical staff	Ha Tinh
4	Le Thi Thao	Coordinator of LCASP Nam Dinh	Nam Dinh
5	Luong Thanh Tung	Planning staff of LCASP Nam Dinh	Nam Dinh
6	Ms. Nhan	Technical staff	Nam Dinh
7	Ms. Hue	Technical staff	Nam Dinh
8	Mr. Vinh	Vice director of LCASP Bac Giang	Bac Giang
9	Nguyen Thu Huyen	Accountant of LCASP Bac Giang	Bac Giang
10	Duong The Khoa	Technical staff of LCASP Bac Giang	Bac Giang
11	Vu Xuan Khiem	Technical staff of LCASP Bac Giang	Bac Giang
12	Tran Thanh Phong	Technical staff of LCASP Bac Giang	Bac Giang
13	Ms. Binh	Technical staff of LCASP Lao Cai	Lao Cai
14	Mr. Xuan	Technical staff of LCASP Lao Cai	Lao Cai
15	Mr. Quang	Coordinator of LCASP Lao Cai	Lao Cai
16	Lo Xuan Bang	Coordinator of LCASP Son La	Son La
17	Mr. Thanh	Director of LCASP Son La	Son La
18	Nguyen Xuan Nghia	LCASP Ben Tre	Ben Tre
19	Le Quang Binh	LCASP Ben Tre	Ben Tre
20	Le Van Quang	LCASP Soc Trang	Soc Trang
21	Quach Van Tay	LCASP Soc Trang	Soc Trang

22	Nguyen Tien Lich	LCASP Soc Trang	Soc Trang
23	Cao Tien Dat	LCASP Soc Trang	Soc Trang
24	Tran Thanh Phong	Vice Director of LCASP Tien Giang	Tien Giang
25	Nguyen Thi Hoang Ngan	LCASP Tien Giang	Tien Giang
26	Huynh Ngoc Diep	Vice Director of LCASP Binh Dinh	Binh Dinh
27	Tran Thi Thu	LCASP Binh Dinh	Binh Dinh
28	Le Ngoc Huy	LCASP Binh Dinh	Binh Dinh

Agribank officer

No	Full name	Position	Place
1	Ngo Dieu An	Deputy head of FI department, Agribank	Hanoi
2	Ho Thi Kim Thanh	Project staff LCASP, Agribank	Hanoi
3	Nguyen Xuan Tuan	Vice director of Agribank Ha Tinh	Ha Tinh
4	Nguyen Thi Thanh	Manager of individual credit department	Ha Tinh
5	Nguyen Minh Manh	Manager of firm credit department	Ha Tinh
6	Nguyen Huu Son	Officer of Agribank Ha Tinh	Ha Tinh
7	Nguyen Hoang Hai	Director of Agribank Cam Xuyen	Ha Tinh
8	Dang Xuan Hai	Vice director of Agribank Cam Xuyen	Ha Tinh
9	Le Quoc Khanh	Head of Credit department – Agribank Cam Xuyen	Ha Tinh
10	Mr. Huong	Vice director of Agribank Nam Dinh	Nam Dinh
11	Mr. Long	Staff of Agribank Nam Dinh	Nam Dinh
12	Mr. Lac	Director of Agribank Xuan Truong	Nam Dinh
13	Mr. Dieu	Credit officer - Agribank Xuan Truong	Nam Dinh
14	Mr. Dung	Business officer - Agribank Xuan Truong	Nam Dinh
15	Nguyen Hong Thai	Director of Agribank Bac Giang	Bac Giang
16	Than Thi Thuy	Agribank Bac Giang	Bac Giang
17	Nguyen Thi Muoi	Agribank Bac Giang	Bac Giang
18	Nguyen Thi Thao	Agribank Bac Giang	Bac Giang

19	Nguyen Van Hanh	Vice director of Agribank Tan Yen	Bac Giang
20	Luong Van Noi	Vice director of Agribank Tan Yen	Bac Giang
21	Tran Thi Thanh Binh	Vice director of Agribank Lao Cai	Lao Cai
22	Ms. Bich	Agribank Lao Cai	Lao Cai
23	Mr. Tien	Agribank Lao Cai	Lao Cai
24	Ms. Minh	Director of Agribank Bao Thang	Lao Cai
25	Mr. Hai	Vice director Agribank Bao Thang	Lao Cai
26	Pham Ngoc Dinh	Vice director- Agribank Moc Chau	Son La
27	Phan Van Dang	Director of Agribank Mo Cay – Ben Tre	Ben Tre
28	Lê Bình Dương	Director of Agribank Chau Thanh – Soc Trang	Soc Trang

Representatives from Co-op bank and people’s credit fund

No	Full name	Position	Place
1	Vo Ta Loc	Chairman of PCFs Thanh Trung Commune	Ha Tinh
2	Nguyen Thi Dinh	Director of PCFs Thanh Trung Commune	Ha Tinh
3	Vo Ta Cuong	Vice director PCFs Thanh Trung Commune	Ha Tinh
4	Tran Hoang Hung	Director of PCF Cam Yen Commune	Ha Tinh
5	Nguyen Dinh Tich	Chairman of PCF Cam Yen Commune	Ha Tinh
6	Nguyen Viet Ha	Director of CoopBank Nam Dinh	Nam Dinh
7	Mai Van Uy	Vice director CoopBank Nam Dinh	Nam Dinh
8	Nguyen Van Vu	Manager of PCF member credit department	Nam Dinh
9	Nguyen Quang Hung	Manager of firm credit department	Nam Dinh
10	Bui Minh Tam	Chairman of PCF Xuan Tan Commune	Nam Dinh
11	Trinh Van Trinh	Supervisor of PCF Xuan Tan Commune	Nam Dinh
12	Duong Ngoc Khanh	Chairman of PCF Dinh Ke Commune	Bac Giang
13	Nguyen Thi Thuy Loan	Director of PCF Dinh Ke Commune	Bac Giang
14	Duong Ngoc Kiem	Credit officer- PCF Ngoc Chau Commune	Tan Yen, Bac Giang
15	Tran Thi Ha	Vice director- PCF Ngoc Chau Commune	Tan Yen, Bac Giang
16	Nguyen Ky Thong	Director in Coopbank Binh Dinh	Binh Dinh

17	Nguyen Thi Thuy	Coopbank Binh Dinh	Binh Dinh
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Officers from Vietnam Bank for Social Policy, BIDV

No	Full name	Position	Place
1	Mr. Hung	Vice director VBSP in Nam Dinh Province	Nam Dinh
2	Mr. Dong	Vice director VBSP in Lao Cai Province	Lao Cai
3	Tong Thi Tuoi	Vice director VBSP in Son La Province	Son La
4	Ms. Nhu	Director of Department 3 – BIDV	Hanoi
5	Ms. Hue	BIDV	Hanoi
6	Ms. Mai	BIDV	Hanoi
7	Ms. Huyen	BIDV	Hanoi
8	Ms. Yen	BIDV	Hanoi
9	Ms. Chuong	Social Policy Bank	Hanoi
10	Mr. Nhan	Director of Social Policy Bank	Hanoi

Officers from Women’s Union, Farmers’ Union

No	Full name	Position	Place
1	Mai Xuan Long	President's Farmer Union Xuan Kien Commune	Nam Dinh
2	Mrs. Cat	President's Women Union Xuan Kien Commune	Nam Dinh
3	Trinh Xuan Dong	Vice President of Xuan Kien Commune	Nam Dinh
4	Nguyen Thi Lien	Vice President of Bac Giang Women Union	Bac Giang
5	Pham Thi Hang	Officer of Bac Giang Women Union	Bac Giang
6	Ms. Kiem	Son La Women Union	Son La
7	Ms. Nguyet	Vice President of Son La Women Union	Lao Cai

2. MEDIUM - SIZED FARMS

No	Full name	Place	Size	Current loan	Note
1	Bui Van Nam	Bao Thang – Lao Cai	120	150 mil. VND	Built a 15m3 biogas plant. Hoping to borrow for livestock expansion
2	Tran Thi	Bao Thang –	200		Built biogas plant, will build

	Thanh	Lao Cai			more with her own fund, doesn't want to borrow
3	Trieu Van Hoang	Bat Xat – Lao Cai	100	Not borrowing	Built a 10m ³ biogas plant, doesn't want to borrow
4	Pham Thi Son	Cam Xuyen – Ha Tinh	500	700 mil. VND	Built a 200m ³ biogas plant. Hoping to borrow 500 mil for livestock expansion
5	Hoang Huu Bang	Cam Xuyen – Ha Tinh	200	350 mil. VND	Hasn't built biogas, hoping to build a HDPE one (200-300m ³)
6	Pham Van Son	Cam Xuyen – Ha Tinh	350	800 mil. VND	Built biogas already
7	Nguyen Thi Bich	Tan Yen – Bac Giang	450		Built a 70m ³ biogas plant, hoping to borrow 500 mil for livestock expansion
8	Ngo Xuan Luong	Tan Yen – Bac Giang	100	600 mil. VND	Built 60m ³ biogas plant, hoping to borrow 1 bil for livestock expansion
9	Do Thi Huong	Tan Yen – Bac Giang	450	300 mil. VND	Built a 30m ³ biogas plant, hoping to borrow 500 mil for stable renovation
10	Bui Van Quang	Xuan Truong – Nam Dinh	300	600 mil. VND	Built 25m ³ biogas plant; doesn't want to borrow
11	Mai Van Chien	Xuan Truong – Nam Dinh	570	600 mil. VND	Built 10m ³ biogas plant, hopt to borrow if the interest is low
12	Do Van Duc	Xuan Tan – Nam Dinh	20 Sow – 130 market hog	450 mil. VND	Built a 20m ³ biogas, and 10m ³ one, hoping to expand livestock
13	Tran Ngoc Lam	Moc Chau, Son La	15 sow – 100 market hog		Built a 9m ³ biogas, hoping to borrow 300-400 mil to expand livestock and build a 60m ³ biogas plant
14	Tong Xuan Bac	Moc Chau, Son La			Have no intention of borrowing

15	Nguyen Van Truong	Moc Chau, Son La	9 sow – 100 market hog	240 mil. VND	Hoping to borrow at least 100 mil to expand livestock and build biogas
16	Le Sy Duc	Hop Hai, Lam Thao, Phu Tho	21 sow – 40 market hog	250 mil. VND	Hoping to borrow 200 mil to expand livestock and build HDPE biogas
17	Pham Van Nha	Lam Thao, Phu Tho	20 sow – 120 market hog		Built a biogas plant, hoping to borrow 100 mil to expand livestock
18	Vuong Van Hoa	Ha Hoa, Phu Tho	10 sow, 100 market hog	100 mil. VND	Built 2 biogas plants, hoping to purchase livestock feed and breeds.
19	Nguyen Quy Thanh	Thanh Thoi. Mo Cay Nam, Ben Tre	700 market hog	500 mil. VND	Built a biogas plant
20	Luong Van Thong	Ngai Dang, Mo Cay Nam, Ben Tre	30 sow, 300 market hog	500 mil. VND	Built a biogas plant
21	Nguyen Van Bao	Ngai Dang, Mo Cay Nam, Ben Tre	70 market hog	100 mil. VND	Built a biogas plant
22	Phu Quy	Phu Tan, Chau Thanh, Soc Trang	80 sows and 300 market hogs	100 mil. VND	Built a biogas plant
23	Nguyen Van Thoan	Dai Hai, Ke Sach, Soc Trang	1900 sows	3.5 bil. VND	Built a biogas plant
24	Pham Van Duong	Dai Hai, Ke Sach, Soc	2600 market hog	4.2 Bil. VND	Built a biogas plant

		Trang			
25	Le Van Hoang	Nhon Tan, An Nhon, Binh Dinh	500 market hogs	300 mil. VND	Built a biogas plant
26	Bui Thi Hoa	Nhon Tan, An Nhon, Binh Dinh	600 market hogs	1.2 bil. VND	Built a biogas plant and wants to take out 500 million VNĐ loans
27	Vo Van Thanh	Nhon Tho, An Nhon, Binh Dinh	600 market hogs	700 mil. VND	Built a biogas plant wants to take out 600 million VNĐ loans

3. LIST OF COMMERCIAL FIRM

- Hop Luc (Cam Xuyen, Cam Xuyen, Ha Tinh)
- Nguyen Van Toan (Xuan Thuong, Xuan Truong, Nam Dinh)
- Nguyen Ba Huu (Viet Ngoc, Tan Yen, Bac Giang)
- Nguyen Xuan Tung (Bao Thang, Lao Cai)
- Nguyễn Thị Thuý (Moc Chau, Son La)
- Nguyen Van Suu (Lam Thao, Phu Tho)
- Pham Van Hiep (Phu Dong, Ngai Dang, Mo Cay Nam, Ben Tre)
- Mr. Hoai (Dai Hai, Ke Sach, Bac Giang)
- Vanh Dinh Tan (An Nhon, Binh Dinh)
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4. OF REFERENCE FAMILY JOINING QUESTIONNAIRES

a. Household without biogas plants

No	Full name	Place
1	Dang Thi Lan	Thien Cam, Cam Xuyen, Ha Tinh
2	To Duc Tuan	Thien Cam, Cam Xuyen, Ha Tinh
3	Nguyen Van Quang	Thien Cam, Cam Xuyen, Ha Tinh
4	Nguyen Thi Xuan	Thien Cam, Cam Xuyen, Ha Tinh
5	Bui Thi Dam	Thien Cam, Cam Xuyen, Ha Tinh

6	Phan Xuan De	Cam Duong, Cam Xuyen, Ha Tinh
7	Bui Vinh Nam	Cam Duong, Cam Xuyen, Ha Tinh
8	Le Viet Nguyen	Thien Cam, Cam Xuyen, Ha Tinh
9	Nguyen Vinh Cuong	Thien Cam, Cam Xuyen, Ha Tinh
10	Nguyen Viet Huy	Thien Cam, Cam Xuyen, Ha Tinh
11	Truong Huu Vinh	Thach Long, Thach Ha, Ha Tinh
12	Nguyen Duc Ky	Thach Long, Thach Ha, Ha Tinh
13	Tran Y Dung	Thach Long, Thach Ha, Ha Tinh
14	Nguyen Phi Linh	Thach Long, Thach Ha, Ha Tinh
15	Le Thi Huong	Thach Long, Thach Ha, Ha Tinh
16	Nguyen Thi Hue	Thach Long, Thach Ha, Ha Tinh
17	Vu Duc Toan	Thach Tien, Thach Ha, Ha Tinh
18	Nguyen Huy Dung	Thach Tien, Thach Ha, Ha Tinh
19	Le Van Truong	Thach Tien, Thach Ha, Ha Tinh
20	Le Huu Ngan	Thach Tien, Thach Ha, Ha Tinh
21	Ninh Thi Viet	Yen Binh, Y Yen, Nam Dinh
22	Nguyen Thi Tuyet	Yen Minh, Y Yen, Nam Dinh
23	Pham Danh Lam	Yen Minh, Y Yen, Nam Dinh
24	Pham Van Thoai	Yen Minh, Y Yen, Nam Dinh
25	Tran Van Nam	Yen My, Y Yen, Nam Dinh
26	Tran Thi Khuyen	Yen My, Y Yen, Nam Dinh
27	Tran Van Tung	Yen My, Y Yen, Nam Dinh
28	Vu Van Quang	Yen My, Y Yen, Nam Dinh
29	Nguyen Thi Vy	Yen Phuc, Y Yen, Nam Dinh
30	Tran Thi Kim Dan	Yen Phong, Y Yen, Nam Dinh
31	Vu Van Doan	Xuan Tien, Xuan Truong, Nam Dinh
32	Mai Van Cham	Xuan Kien, Xuan Truong, Nam Dinh
33	Hoang Thi Thim	Xuan Kien, Xuan Truong, Nam Dinh
34	Ngo Van Duyen	Xuan Tan, Xuan Truong, Nam Dinh

35	Truong Dinh Huong	Xuan Tan, Xuan Truong, Nam Dinh
36	Nguyen Thi Thoan	Xuan Tan, Xuan Truong, Nam Dinh
37	Trinh Ba Phiem	Xuan Tan, Xuan Truong, Nam Dinh
38	Vu Quang Dai	Xuan Tien, Xuan Truong, Nam Dinh
39	Mai Thi Nhiem	Xuan Kien, Xuan Truong, Nam Dinh
40	Nguyen Quang Hung	Xuan Tan, Xuan Truong, Nam Dinh
41	Le Duc Hung	Tu Lan, Viet Yen, Bac Giang
42	Nguyen Van Minh	Tu Lan, Viet Yen, Bac Giang
43	Duong Van Tung	Tu Lan, Viet Yen, Bac Giang
44	Dao Thi Vu	Tu Lan, Viet Yen, Bac Giang
45	Nguyen Van Thu	Ninh Son, Viet Yen, Bac Giang
46	Do Thi Mai	Quang Minh, Viet Yen, Bac Giang
47	Nguyen Thi Tinh	Bich Son, Viet Yen, Bac Giang
48	Nguyen Van Dieu	Tien Son, Viet Yen, Bac Giang
49	Nguyen Van Manh	Nghia Trung, Viet Yen, Bac Giang
50	Nguyen Van Thang	Ninh Son, Viet Yen, Bac Giang
51	Nguyen Xuan Truong	Cao Xa, Tan Yen, Bac Giang
52	Bui The Chi	Cao Xa, Tan Yen, Bac Giang
53	Nguyen Thi Anh	Bich Son, Tan Yen, Bac Giang
54	Nguyen Thi Lan	Cao Xa, Tan Yen, Bac Giang
55	Bui Van Hoang	Cao Xa, Tan Yen, Bac Giang
56	Ta Thi Phong	Quang Minh, Viet Yen, Bac Giang
57	Tran Huu Vuong	Nenh Town, Viet Yen, Bac Giang
58	Nguyen Thi Thao	Van Trung, Viet Yen, Bac Giang
59	Hoang Duc Thang	Van Trung, Viet Yen, Bac Giang
60	Do The Vinh	Cao Xa, Viet Yen, Bac Giang
61	Tran Thi Hoa	Phong Hai, Bao Thang, Lao Cai
62	Vu Thi Thuy	Ban Cam, Bao Thang, Lao Cai
63	Nguyen Van Dong	Ban Cam, Bao Thang, Lao Cai

64	Pham Thanh Hang	Phong Hai, Bao Thang, Lao Cai
65	Pham Van Hoang	Phong Hai, Bao Thang, Lao Cai
66	Nguyen Xuan Bien	Phong Hai, Bao Thang, Lao Cai
67	Do Van Cuong	Phong Nien, Bao Thang, Lao Cai
68	Nguyen Van Hung	Xuan Quang, Bao Thang, Lao Cai
69	Bui Van Pho	Xuan Quang, Bao Thang, Lao Cai
70	Luc Van Cuong	Ban Cam, Bao Thang, Lao Cai
71	Hoang A Binh	Ban Qua, Bat Xat, Lao Cai
72	Ly Thi Han	Ban Qua, Bat Xat, Lao Cai
73	Nguyen Moc	Ban Qua, Bat Xat, Lao Cai
74	Tran Thi Lan	Ban Qua, Bat Xat, Lao Cai
75	Ly Thi Thanh	Ban Vuot, Bat Xat, Lao Cai
76	Tran Thi Chien	Ban Vuot, Bat Xat, Lao Cai
77	Chao Lao Ta	Ban Vuot, Bat Xat, Lao Cai
78	Vu Xuan Ngung	Ban Vuot, Bat Xat, Lao Cai
79	Vu Thi Sen	Ban Vuot, Bat Xat, Lao Cai
80	Vu Ngoc Son	Ban Vuot, Bat Xat, Lao Cai
81	Le Sy Duc	Hop Hai, Lam Thao, Phu Tho
82	Bui Van Phuong	Hop Hai, Lam Thao, Phu Tho
83	Nguyen Van Uyen	Son Vi, Lam Thao, Phu Tho
84	Pham Van Thuc	Ban Nguyen, Lam Thao, Phu Tho
85	Trieu Van Dong	Son Vi, Lam Thao, Phu Tho
86	Le Huu Hung	Hop Hai, Lam Thao, Phu Tho
87	Phan Van Dung	Son Duong, Lam Thao, Phu Tho
88	Kieu Quang Khai	Hop Hai, Lam Thao, Phu Tho
89	Nguyen Thi Lanh	Hop Hai, Lam Thao, Phu Tho
90	Nguyen Van Phuong	Hop Hai, Lam Thao, Phu Tho
91	Nguyen Thi Dung	Y Son, Ha Hoa, Phu Tho
92	Nguyen Hoang Thang	Dong Lam, Ha Hoa, Phu Tho

93	Nguyen The Lu	Dong Lam, Ha Hoa, Phu Tho
94	Phan Thi Hue	Dong Lam, Ha Hoa, Phu Tho
95	Tran Thi Thanh	Dong Lam, Ha Hoa, Phu Tho
96	Nguyen Van Cuong	Ha Hoa Town, Ha Hoa, Phu Tho
97	Nguyen Van Hoan	Ha Hoa Town, Ha Hoa, Phu Tho
98	Chu Dinh Ha	Ha Hoa Town, Ha Hoa, Phu Tho
99	Dao Van Sinh	Ha Hoa Town, Ha Hoa, Phu Tho
100	Nguyen Cong Tri	Ha Hoa Town, Ha Hoa, Phu Tho
101	Dieu Chinh Quy	Long Phieng, Yen Chau, Son La
102	Tong Van Don	Long Phieng, Yen Chau, Son La
103	Dao Thi Loan	Chieng Pan, Yen Chau, Son La
104	Nguyen Thi Hop	Chieng Pan, Yen Chau, Son La
105	Dao Van Thinh	Chieng Pan, Yen Chau, Son La
106	Me Thi Trang	Chieng Khoi, Yen Chau, Son La
107	Lo Thi Phuong	Yen Son, Yen Chau, Son La
108	Hoang Thi Hien	Chieng Van, Yen Chau, Son La
109	Lu Thi Hoa	Chieng Pan, Yen Chau, Son La
110	Ha Thi Viet	Chieng Pan, Yen Chau, Son La
111	Nguyen Thi Luyen	Dong Sang, Moc Chau, Son La
112	Nguyen Viet Dung	Dong Sang, Moc Chau, Son La
113	Nguyen Viet Me	Dong Sang, Moc Chau, Son La
114	Nguyen Thi Mien	Dong Sang, Moc Chau, Son La
115	Luong Van Khiet	Dong Sang, Moc Chau, Son La
116	Hoang Van Binh	Dong Sang, Moc Chau, Son La
117	Vi Van Hien	Dong Sang, Moc Chau, Son La
118	Hoang Van Canh	Dong Sang, Moc Chau, Son La
119	Hoang Van Phi	Dong Sang, Moc Chau, Son La
120	Vi Van Ky	Dong Sang, Moc Chau, Son La
121	Ta Den	Chau Thanh, Chau Thanh, Soc Trang

122	Thach Hon	Chau Thanh, Chau Thanh, Soc Trang
123	Thach Suong	Chau Thanh, Chau Thanh, Soc Trang
124	Thach Phuoc	An Hiep, Chau Thanh, Soc Trang
125	Son Thi Ten	Chau Thanh, Chau Thanh, Soc Trang
126	Ta Phe Ron	An Hiep, Chau Thanh, Soc Trang
127	Lam Thi Thu Thanh	An Hiep, Chau Thanh, Soc Trang
128	Ta Thun	An Hiep, Chau Thanh, Soc Trang
129	Tran Quang Hung	An Hiep, Chau Thanh, Soc Trang
130	Son Sam Mit	An Hiep, Chau Thanh, Soc Trang
131	Tran Thanh Phong	An Hiep, Chau Thanh, Soc Trang
132	Cao Lai	An Hiep, Chau Thanh, Soc Trang
133	Dinh Hon	Chau Thanh, Chau Thanh, Soc Trang
134	Lieu Rat	Chau Thanh, Chau Thanh, Soc Trang
135	Tran Thi Kim Huong	An Hiep, Chau Thanh, Soc Trang
136	Thach Binh	An Hiep, Chau Thanh, Soc Trang
137	Thach Ngoc Thai	An Hiep, Chau Thanh, Soc Trang
138	Ngo Thi Nhu Ngoc	Chau Thanh, Chau Thanh, Soc Trang
139	Son Det	An Hiep, Chau Thanh, Soc Trang
140	Mai Hoang An	Cam Son, Mo Cay Nam, Ben Tre
141	Huynh Thi Nhu	Ngai Dang, Mo Cay Nam, Ben Tre
142	Huynh Van Toi	Ngai Dang, Mo Cay Nam, Ben Tre
143	Nguyen Van Giau	Ngai Dang, Mo Cay Nam, Ben Tre
144	Huynh Thi Nhanh	Ngai Dang, Mo Cay Nam, Ben Tre
145	Nguyen Van Hoc	Ngai Dang, Mo Cay Nam, Ben Tre
146	Le Quoc Son	An Dinh, Mo Cay Nam, Ben Tre
147	Le Quoc Phuong	An Dinh, Mo Cay Nam, Ben Tre
148	Nguyen Thi Thao	Thanh Thoi B, Mo Cay Nam, Ben Tre
149	Ta Thi Tam	Thanh Thoi B, Mo Cay Nam, Ben Tre
150	Huynh Van Son	Thanh Thoi B, Mo Cay Nam, Ben Tre

151	Le Thi Be	An Thach, Mo Cay Nam, Ben Tre
152	Nguyen Thi An	Sang Thach, Mo Cay Nam, Ben Tre
153	Nguyen Hung Hoa	Lao Phuoc, Mo Cay Nam, Ben Tre
154	Nguyen Van Hoang	Ngai Dang, Mo Cay Nam, Ben Tre
155	Mai Thi Kim Chung	Ngai Dang, Mo Cay Nam, Ben Tre
156	Nguyen Thi Ngoc Ha	Ngai Dang, Mo Cay Nam, Ben Tre
157	Nguyen Van Thach	An Dinh, Mo Cay Nam, Ben Tre
158	Nguyen Van Dung	Minh Duc, Mo Cay Nam, Ben Tre
159	Nguyen Van Tay	Cam Son, Mo Cay Nam, Ben Tre
160	Truong Thi Xuan Thu	Xuan Dong, Cho Gao, Tien Giang
161	Nguyen Van Dinh	Xuan Dong, Cho Gao, Tien Giang
162	Bach Thi Hong	Xuan Dong, Cho Gao, Tien Giang
163	Nguyen Van To	Xuan Dong, Cho Gao, Tien Giang
164	Nguyen Van Tai	Xuan Dong, Cho Gao, Tien Giang
165	Duong Thi Thanh Thuy	Xuan Dong, Cho Gao, Tien Giang
166	Nguyen Ngoc Sang	Xuan Dong, Cho Gao, Tien Giang
167	Chau Thi Yen	Xuan Dong, Cho Gao, Tien Giang
168	Nguyen Van Loi	Xuan Dong, Cho Gao, Tien Giang
169	Nguyen Huu Loc	Xuan Dong, Cho Gao, Tien Giang
170	Pham Van Tuan	Thanh Binh, Cho Gao, Tien Giang
171	Tran Van Hoc	Thanh Binh, Cho Gao, Tien Giang
172	Tran Thi Loan	Thanh Binh, Cho Gao, Tien Giang
173	Nguyen Thi An	Thanh Binh, Cho Gao, Tien Giang
174	Pham Van Hue	Thanh Binh, Cho Gao, Tien Giang
175	Phung Thi Diem	Thanh Binh, Cho Gao, Tien Giang
176	Nguyen Minh Tan	Thanh Binh, Cho Gao, Tien Giang
177	Nguyen Van Rac	Thanh Binh, Cho Gao, Tien Giang
178	Le Thi Hoang Khanh	Nhon An, An Nhon, Binh Dinh
179	Tran Ngoc Thao	Nhon An, An Nhon, Binh Dinh

180	Huynh Ngoc Thin	Nhon An, An Nhon, Binh Dinh
181	Vo Van Hien	Nhon An, An Nhon, Binh Dinh
182	Vo Minh Thao	Nhon An, An Nhon, Binh Dinh
183	Pham Thi Dao	Nhon An, An Nhon, Binh Dinh
184	Truong Thi Anh	Nhon An, An Nhon, Binh Dinh
185	Ngo Thi Thanh Thuy	Nhon An, An Nhon, Binh Dinh
186	Pham Thi Thanh Hang	Nhon An, An Nhon, Binh Dinh
187	Bui Huu Bon	Nhon An, An Nhon, Binh Dinh
188	Phan The Quy	Nhon An, An Nhon, Binh Dinh
189	Vo Minh Hung	Nhon An, An Nhon, Binh Dinh
190	Tran Van Phe	Nhon An, An Nhon, Binh Dinh
191	Nguyen Van Minh	Nhon An, An Nhon, Binh Dinh
192	Tran Dinh Cong	Nhon An, An Nhon, Binh Dinh
193	Nguyen Xuan Tho	Nhon An, An Nhon, Binh Dinh
194	Nguyen Khac Minh	Nhon Hung, An Nhon, Binh Dinh
195	Nguyen Van Binh	Nhon Hung, An Nhon, Binh Dinh
196	Nguyen Van Ky	Nhon Hung, An Nhon, Binh Dinh
197	Huynh Ngoc Anh	Nhon Hung, An Nhon, Binh Dinh

b. Households with biogas plants

No	Full name	Place
1	Dang Thanh Hien	Cam Hoa, Cam Xuyen, Ha Tinh
2	Phan Thi Nguyet	Cam Hoa, Cam Xuyen, Ha Tinh
3	Le Thi Ninh	Cam Hoa, Cam Xuyen, Ha Tinh
4	Tran Ba Tung	Cam Hoa, Cam Xuyen, Ha Tinh
5	Pham Thi Binh	Cam Xuyen Town, Cam Xuyen, Ha Tinh
6	Le Thi Tan	Thach Long, Thach Ha, Ha Tinh
7	Nguyen Van Thuan	Thach Long, Thach Ha, Ha Tinh
8	Truong Thi Nhung	Thach Long, Thach Ha, Ha Tinh
9	Nguyen Thi Chien	Thach Long, Thach Ha, Ha Tinh
10	Nguyen Van Hoang	Thach Long, Thach Ha, Ha Tinh
11	Nguyen Thi Trinh	Thach Long, Thach Ha, Ha Tinh
12	Dinh Van Sac	Yen Binh, Y Yen, Nam Dinh
13	Pham Van Han	Yen Minh, Y Yen, Nam Dinh
14	Dinh Thi Ba	Yen Thang, Y Yen, Nam Dinh
15	Hoang Van Quyen	Yen Minh, Y Yen, Nam Dinh
16	Tran Thi Huong	Yen My, Y Yen, Nam Dinh
17	Dinh Thi Ha	Xuan Kien, Xuan Truong, Nam Dinh
18	Trinh Thi Mai	Xuan Kien, Xuan Truong, Nam Dinh
19	Bui Thi Bay	Xuan Kien, Xuan Truong, Nam Dinh
20	Bui Van Hoat	Xuan Kien, Xuan Truong, Nam Dinh
21	Dinh Thi Mo	Xuan Kien, Xuan Truong, Nam Dinh
22	Do Thi Hoa	Quang Minh, Viet Yen, Bac Giang
23	Duong Van Minh	Tien Son, Viet Yen, Bac Giang
24	Tran Van Lien	Hong Thai, Viet Yen, Bac Giang
25	Nguyen Thi Lan	Quang Minh, Viet Yen, Bac Giang

26	Ta Thi Tham	Quang Minh, Viet Yen, Bac Giang
27	Bui The Minh	Cao Xa, Tan Yen, Bac Giang
28	Nguyen Thi Thanh Lam	Cao Xa, Tan Yen, Bac Giang
29	Nguyen Thi Linh	Cao Xa, Tan Yen, Bac Giang
30	Nguyen Thi Huyen	Cao Xa, Tan Yen, Bac Giang
31	Ninh Van Nam	Ngoc Chau, Tan Yen, Bac Giang
32	Khuong Thi Ly	Xuan Quang, Bao Thang, Lao Cai
33	Ngo Van Son	Xuan Quang, Bao Thang, Lao Cai
34	Tran Van Hien	Xuan Quang, Bao Thang, Lao Cai
35	Vuong Quoc Cuong	Xuan Quang, Bao Thang, Lao Cai
36	Pham Van Men	Xuan Quang, Bao Thang, Lao Cai
37	Dang Thi Tuyet	Quang Kim. Bao Thang, Lao Cai
38	Do Hong Van	Quang Kim. Bao Thang, Lao Cai
39	Do Thi Thanh	Quang Kim. Bao Thang, Lao Cai
40	Lau Van Gan	Ban Qua, Bao Thang, Lao Cai
41	Pham Van Chien	Quang Kim. Bao Thang, Lao Cai
42	Vu Thi Tan	Moc Chau Town, Moc Chau, Son La
43	Hoang Xuan Van	Moc Chau Town, Moc Chau, Son La
44	Nguyen Quang Son	Moc Chau Town, Moc Chau, Son La
45	Tran Quang Tuan	Muong Sang, Moc Chau, Son La
46	Luong Van Quynh	Muong Sang, Moc Chau, Son La
47	Do Huu Thong	Phieng Khoai, Yen Chau, Son La
48	Le Thi Hao	Phieng Khoai, Yen Chau, Son La
49	Tran Van Son	Phieng Khoai, Yen Chau, Son La
50	Trinh Thi Hien	Phieng Khoai, Yen Chau, Son La
51	Le Thi Hop	Phieng Khoai, Yen Chau, Son La
52	Nguyen Thi Nhi	Hop Hai, Lam Thao, Phu Tho
53	Dang Thi Thao	Hop Hai, Lam Thao, Phu Tho
54	Nguyen Van Tuan	Kinh Ke, Lam Thao, Phu Tho

55	Pham Thi Kim Dung	Kinh Ke, Lam Thao, Phu Tho
56	Nguyen Thi Long	Hop Hai, Lam Thao, Phu Tho
57	Nguyen Van Toan	Bang Gia, Ha Hoa, Phu Tho
58	Nguyen Van Cuong	Bang Gia, Ha Hoa, Phu Tho
59	Hoang Ngoc Chinh	Dong Lam, Ha Hoa, Phu Tho
60	Hoang Ngoc Truong	Dong Lam, Ha Hoa, Phu Tho
61	Nguyen Quang Hoi	Thi Tran Ha Hoa, Ha Hoa, Phu Tho
62	Do Thanh Xuan	Chau Thanh, Chau Thanh, Soc Trang
63	Ngo Thi Huyen Linh	Phu Tam, Chau Thanh, Soc Trang
64	Nguyen Thi Hoang Phuong	Phu Tam, Chau Thanh, Soc Trang
65	Dinh Van Du	Phu Tam, Chau Thanh, Soc Trang
66	To Van Nam	Phu Tam, Chau Thanh, Soc Trang
67	Ly Chel	Phu Tam, Chau Thanh, Soc Trang
68	Son Ho	Phu Tam, Chau Thanh, Soc Trang
69	Nguyen Minh Doan	Ho Dac Kien, Chau Thanh, Soc Trang
70	Lam Thanh Tung	Thien My, Chau Thanh, Soc Trang
71	Huynh Tam Phat	An Ninh, Chau Thanh, Soc Trang
72	Nguyen Van Truong	Ngai Dang, Mo Cay Nam, Ben Tre
73	Pham Long Thanh	Ngai Dang, Mo Cay Nam, Ben Tre
74	Le Thi Huong	An Dinh, Mo Cay Nam, Ben Tre
75	Nguyen Van Buoc	Thanh Thoi B, Mo Cay Nam, Ben Tre
76	Duong Van Em	Thanh Thoi B, Mo Cay Nam, Ben Tre
77	Le Thanh Tan	Thanh Thoi B, Mo Cay Nam, Ben Tre
78	Pham Vat Can	Thanh Thoi B, Mo Cay Nam, Ben Tre
79	Tran Thanh Toan	An Dinh, Mo Cay Nam, Ben Tre
80	Dao Xuan Hai	An Dinh, Mo Cay Nam, Ben Tre
81	Tran Thai Binh	An Dinh, Mo Cay Nam, Ben Tre
82	Nguyen Quoc Viet	Xuan Dong, Cho Gao, Tien Giang
83	Nguyen Van Giao	Xuan Dong, Cho Gao, Tien Giang

84	Nguyen Thi Thao Vy	Xuan Dong, Cho Gao, Tien Giang
85	Nguyen Van Manh	Xuan Dong, Cho Gao, Tien Giang
86	Nguyen Thi Mong Kieu	Xuan Dong, Cho Gao, Tien Giang
87	Nguyen Thi Le	Xuan Dong, Cho Gao, Tien Giang
88	Nguyen Thi Hanh Loan	Xuan Dong, Cho Gao, Tien Giang
89	Le Thu Hien	Xuan Dong, Cho Gao, Tien Giang
90	Bui Van Hung	Thanh Binh, Cho Gao, Tien Giang
91	Nguyen Van Dat	Thanh Binh, Cho Gao, Tien Giang
92	Nguyen Thi Ngoc Dung	Nhon Khanh, An Nhon, Binh Dinh
93	Le Thi Sen	Nhon Khanh, An Nhon, Binh Dinh
94	Le Thi Sung	Nhon Khanh, An Nhon, Binh Dinh
95	Nguyen Thi Kim Lieu	Nhon Khanh, An Nhon, Binh Dinh
96	Dao Thi Sang	Nhon Khanh, An Nhon, Binh Dinh
97	Phan Thi Thu	Nhon Khanh, An Nhon, Binh Dinh
98	Nguyen Thi Mai	Nhon Khanh, An Nhon, Binh Dinh
99	Ho Sy Tuyen	Nhon Khanh, An Nhon, Binh Dinh
100	Vo Thi Thao	Nhon Thanh, An Nhon, Binh Dinh
101	Nguyen Thi Nga	Nhon Tho, An Nhon, Binh Dinh

APPENDIX 5 - ASSESSMENT ON LINE OF CREDIT AND INTERMEDIATE FINANCIAL INSTITUTIONS

A. Experiences and lessons from disbursement of credit fund

1. Experiences and lessons from disbursement of LCASP’s credit fund through Agribank and Coopbank

Despite great efforts, causes which analysts have very thoroughly analyzed in the consultation report on the preliminary findings of demand for credit, up to present, both Agribank and Coopbank have only disbursed small amounts of credit fund of the project.

**Table 1. Disbursement of Component 2 in 10 provinces of LCASP
as of Quarter II/2016**

Institutions	Number of sub-loans (works)	Loan outstanding (billion VND)	Disbursement percentage (%)
Agribank	198	5.50	0.598
Coopbank	43	5.53	0.602
Total	241	11.03	1.2

(Source: the Project)

The difficulties in disbursing loans of two existing financial institutions including: (i) as stipulated in Decree No. 55/2015/ND-CP dated 09/6/2015 of the Government, following the regulation on loan security of all commercial banks, banks must keep red books of households when the households have demand for loans; (ii) Due to limitation in the scope for borrowing in the original design of the project which excluding lending for investment in breeds and building cages; (iii) weak information dissemination on LCASP leading to the fact that people have less information and access to funding of the project; (iv) VBARD issued some new complicated lending process and procedures, making it difficult for the disbursement; (v) the banks have ample capital supply with more attractive policies than LCASP; (vi) a number of provinces apply interest support policies for farms, thereby, limiting the disbursement of LCASP credit. Currently, 02 financial institutions taking part in the project only commit to disburse USD 13 million of the total USD 35 million of LCASP credit fund.

Lessons learned from the work done by 02 financial institutions at present are: (i) Farms’ demand for loans to construct biogas tanks for livestock environmental treatment is

high but most of farm owners have reached loan outstanding threshold thus the ability to borrow more from LCASP fund is limited; (ii) investment in construction of large scale biogas tanks does not bring back respective profit, thus, farm owners are not interested in borrowing for biogas tanks; (iii) prevailing loan security policy requiring red books as collateral of the two bank just conforms with borrowers being farm owners, therefore, bring about unexpected results; (iv) demand for loans to construct medium scale biogas tanks is huge as investment to medium scale biogas tanks bring about both environmental and economic benefits (gas for cooking), commensurate with investment costs; (v) The biggest obstacle for the people to have access to loans for small scale biogas tank construction is to mortgage a red book of great value to borrow a very small loan (only about VND 10 million/loan).

2. Experiences on credit disbursement of VBSP

2.1. Experiences on biogas credit disbursement

Through the loan program for clean water and environmental sanitation in rural areas, in order to achieve the objectives of the national strategic targets on water supply and rural sanitation, in 2004, VBSP was tasked implementation of the credit component of the National program of safe water and sanitation in rural environment with total initial capital of VND 122 billion. The program is implemented through two phases. Phase 1 (from 2004 to 2005): piloted in 10 provinces: Son La, Hai Duong, Nam Dinh, Ninh Binh, Nghe An, Khanh Hoa, Binh Thuan, Dak Lak, Tien Giang, Kien Giang. Phase 2 (from 2006 to present): extend to all provinces and cities nationwide.

The program shall provide loans to households for the purposes: to buy raw materials; to pay for construction; other necessary costs for new construction, renovation and upgrading works of clean water, sanitation facilities ensuring national standards for clean water and rural sanitation (latrines or toilets together with biogas tanks, poultry, livestock barns; sewage, treatment of garbage, wastewater of rural villages). Each household can borrow a maximum of VND 8 million (currently increased to VND 12 million) for construction of clean water and sanitation works. Lending interest rates vary from time to time; the current lending rate is 9% per year. Loan term does not exceed 60 months..

From 2004 to 30/06/2016, the total disbursed amount of the program reaches VND 37,834 billion; total debt collection is VND 15,534 billion debt; Total outstanding loans is 22,132 billion with 2.4 million household customers, increased by VND 22,010 billion as compared

to 2004, non-performing loans is VND 48 billion, accounting for 0.22% of the total loan outstanding. Through this program, as of 30/06/2016, VBSP has lent for investment in building 8,328,000 RWSS works, in which serving installation and construction of over 3 million sanitation facilities in rural areas such as toilets or latrines connected to biogas tanks.

In the framework of the RWSS, from 2011-2013, VBSP has lent to customers in the project area funded by DFID. VBSP mobilize fund and provide a total credit amount of VND 1,000 billion dong (US \$ 45 million equivalent) to 125,000 households. Through this program, loan outstanding of sanitations of VBSP in 10 project provinces had increased by 1.5 time on the average, in some provinces it was 3 times. Loan outstanding is at a fair amount between VND 1.5 million and 3 million per 1 household sanitation plant.

The project was funded by EMW in collaboration with Women’s Union lent to 100,000 customers with VND 300 billion.

Table 2: Lending results from 2004 to 30/06/2016

Unit: Billion VND, thousand works

No.	Year	Lending turnover	Debt collection turnover	Loan outstanding	Total invested works in a year
1	2004	122	0	122	39
2	2005	223	18	327	77
3	2006	520	58	789	161
4	2007	1,087	159	1,717	320
5	2008	2,138	312	3,544	568
6	2009	2,738	785	5,497	719
7	2010	2,344	884	6,957	606
8	2011	2,961	1,377	8,540	775
9	2012	3,821	1,729	10,631	977
10	2013	3,522	2,034	12,116	883
11	2014	6,071	2,799	15,386	1,142
12	2015	8,026	3,313	20,096	1,350
13	30/6/2016	4,261	2,066	22,292	711

Total	37,834	15,534		8,328
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Experiences on credit disbursement of the Project: (1) Procedures and information dissemination: (i) convenient and simple loan procedures without collateral; (ii) VBSP branches take part in PMU at provincial and district level, VBSP actively collaborates with DARDs and local mass organizations to timely define demands for loans, communicate policies and guide the borrowers to complete RWSS lending procedures; choose best practice and design models in conformity with local economic conditions and place of construction; (iii) disbursement mechanism: output-based aids method (payment of construction costs is made partly in advance and periodically as the work is completed, with bonus provisions to borrowing households after completion of sanitation facilities); (iv) provide training and ensure proper construction technique for standard works and timely implementation progress.

2.2 Forest Sector Development Project (Code PO66051) between the Government of Vietnam and the World Bank (WB), VBSP participated in the production forest plantation component with the target of lending to small scale private forestation households (1-5 ha) with a view to plant 56,000 hectares production forest in 06 central provinces: Binh Dinh, Quang Ngai, Quang Nam, Thua Thien - Hue, Thanh Hoa and Nghe An. Involved in the project since 2004 with the credit (3953VN) equivalent to SDR 22.795 million (duration 2004-2024), and the credit (5070VN) equivalent to 7,750,000 SDR (duration 2012-2036).

When participating in the project in 2004, VBSP was a financial institution to be evaluated as suitable (as from the beginning VBARD did not register to participate because of low amount, long duration, unattractive interest rates, small scale forestation loan), however, VBSP was just a newly established financial institutions and was assessed as inexperienced in forestation lending. The credit activities were included in the list of risk management of the Project. However, VBSP has developed a credit manual and a disbursement manual in line with the growth cycle of plants; applied appropriate methods of lending, loan management in close collaboration with the project management unit at various levels and with 4 mass organizations to provide credit to 28,000 customers for commercial forest investment with high efficiency as evaluated in the evaluation report of the World Bank. The amount of capital disbursed is VND 700 billion. Lending turn over (from 2004) is VND774 billion, debt collection is VND 268 billion, total loan outstanding is VND 501 billion, debt principal repayment rate is 98%. Default is VND 55 billion, accounting for 1.1%. The credit fund in

VBSP is appreciated by VBSP and is sustainable to provide loans to commercial forestation until 2036 (Report No: ICR00002835 can be found in the link below).

http://www.wds.worldbank.org/external/default/WDSContentServer/WDSP/EAP/2015/03/31/090224b082d1e00f/1_0/Rendered/PDF/Vietnam000Fore0Report000Sequence016.pdf

2.3 Rural income diversification Project in Tuyen Quang province (RIDP, code 578-VN)

is implemented under an agreement between the Socialist Republic of Vietnam and the International Fund for Agricultural Development (IFAD). VBSP was re-lent a sub-loan of USD 1,43 million (VND 30 billion) in the period of 2003-2022 by the Government. The project provides loans to farmers groups in the project districts to re-lend to group members for rural agriculture production in order to ensure sustainability for households in rural areas etc,. The project applied wholesale lending through SCGs. Lending rates to borrowers is equal to lending rates applied by the Bank for Agriculture and Rural development at locality. Loan amount is small, at about VND 05 million per household. Total disbursement is VND 79 billion, debt collection is VND 64.8 billion, and total loan outstanding as of 30/06/2016 is VND 15 billion. NPL ratio is 1%. It is a pilot project on lending and credit management basing on group shared responsibility which contributes to reduction of high interest forms of credit. Loan amount is small but effective, fast turnaround capital between members in the community groups, meeting their capital needs promptly.

2.4 Participatory Resources Management Project in Tuyen Quang province (PRMP):

The Government of Vietnam and the Foundation for International Agricultural Development (IFAD) agreed to transfer part of Participatory Resources Management Project in Tuyen Quang province (MS VN-328) with a total loan of about 3.724.000 USD to VBSP for implementation. Borrowers are business and production households in agricultural sector in the project areas of Tuyen Quang. Total loan outstanding of the Project is VND 43 billion. Interest earned is deducted by 1/3 to establish a sustainable revolving fund to develop local capital and resources. Project implementation period is from 1993 to 2043. Lending turnover (1993-2016) is VND 250 billion, debt collection is VND 256 billion, and total loan outstanding as of 30/06/2016 is VND 44 billion. NPL ratio is 1%. The project was successful in experimenting microfinance models with small loans of VND 5 million per household, high interest rates as in the market, sustainable resources due to profits extract for developing capital sources for the Revolving fund.

2.5 Lending to small and medium enterprises Project funded by German Reconstruction Bank (KfW). VBSP was allowed by the Government to take a sub-loan from the loan provided by German through German Reconstruction Bank (KfW). The project was implemented in two phases with total funding equivalent to EUR 10 million. Lending interest rate to SMEs is as the market rate. Project implementation period is from 2005 to 2014. The project goal is to establish a revolving loan fund to finance SMEs in 22 provinces and cities. VBSP is particularly experienced in SMEs credit appraisal and credit management under the commercial regime.

Lending turnover is VND 900 billion, debt collection is VND 776 billion, total loan outstanding as of 30/06/2016 is VND 100 billion. NPL ratio is 1.15 billion (0.99%).

Table 3: Results on SMEs lending in the period of 2005 - 2015

Unit: million VND or SME

No.	Year	Lending turnover	Debt collection	Loan outstanding	Customers
2	2005	29,850		29,850	84
3	2006	47,506	10,556	66,800	234
4	2007	106,960	36,730	137,030	449
5	2008	65,410	62,716	139,724	465
6	2009	150,568	98,243	192,050	593
7	2010	98,011	78,583	211,478	618
8	2011	89,542	106,418	194,602	574
9	2012	82,738	101,488	175,852	515
10	2013	92,995	99,785	169,063	478
11	2014	67,693	104,192	132,564	367
12	2015	60,949	77,258	116,255	321
13	6/2016	8,160	23758	100,657	281
Total		892,222	775,969		

B. Evaluation of VBSP’s ability to participate in disbursement of LCASP

1. History of VBSP

VBSP was established and put into operation in 2003 with an initial capital of VND 10,348 billion VND, including loan programs transferred from the Vietnam Bank for Agriculture and Rural Development, i.e. lending to the poor, job creation and lending to disadvantaged students (from the Industrial and Commercial Bank) with the goal of serving policies of the state of Vietnam in poverty alleviation and social security. Over time, VBSP has reformed, gradually towards commercialization in services. By the end of 2015, total capital of VBSP was nearly VND 148 trillion, increased by VND 56 trillion, equivalent to 62% as compared to the beginning of 2011, with average annual growth of 12.4%.

Total outstanding loan outstanding up to 31/12/2016 is over VND 142 trillion with annual growth rate of 11.9%. By the end of 2015, outstanding customers were nearly 6.9 million. Delinquency rate was 0.78% of total loan outstanding, decreased by 0.42% as compared to 2011; in which overdue was 0.33% and frozen debt was 0.45%.

In 2012, VBSP developed a strategy for financial sustainable development; gradually reduce dependence on the State budget to switch to market-oriented operation in order to ensure competitiveness and sustainable development.

2. Management capacity

2.1 Management structure

VBSP is a state-owned credit institution to implement the government’s credit policies; however, the bank has an organization structure mobilizing participation of local authorities and mass organizations in terms of management and supervision that can help VBSP to provide loans for poor households and other disadvantaged groups effectively and efficiently.

VBSP is increasingly pro-active in capital mobilization from various resources to ensure a stable capital source for meeting with the borrowing demand of targeted clients to generate jobs, improve livelihood and poverty reduction; finalize a stable financial assignment mechanism in each period; formulate the preferential policies for borrowers in terms of the loan procedures, risk handling, interest rate, facilitate clients to access financial inclusion etc.

VBSP has a transparent governance structure and effective management capacity; enhance the capacity of VBSP’s partners; build a control system in line with the VBSP’s operation characteristics. VBSP has a training center and has developed experienced human forces.

2.2 Development strategy

VBSP has formulated a plan for implementing the development strategy; accordingly, each bank branch is assigned to conduct specific targets by the strategy roadmap up to 2020. The highlights of the Development Strategy implementation since 2012 are as follows:

Products and services: (i) VBSP’s credit products are regularly reviews and adjusted to respond with borrowing demand of targeted clients and current situation: the bank adjusted interest rates, raised loan amounts in some credit programs; (ii) supplement some credit programs such as: near-poor households, households who have just escaped from poverty, housing loan for the poor, forestation loan and animal husbandry in rural areas etc.

To modernize operation, VBSP has succeeded in implementing information technology modernization; ensure all transactions to be conducted in the Core banking-Intellect system, contributing to improve quality of services and products, mitigate operation costs and catch up with banking modernization tendency.

VBSP will implement SMS banking service in 2016 and mobile banking service in 2017 as well as payment card issuance in order to apply technology to develop payment and fund transfer services for customers in remote, rural areas ignorant by commercial banks. Moreover, VBSP will conduct capital mobilization from these digital financial services.

3. Operation network coverage from central to local level

VBSP has an operation network ranging over the country with 63 provincial/municipal branches. VBSP has branches from provincial to district level as well as fixed-date transaction points at commune level in 10 LCASP project areas, which creates favorable conditions for the project communication and disbursement to targeted clients.

Moreover, VBSP has established a partnership model with mass organizations including Vietnam Women Union, Vietnam Farmer Union, Vietnam War Veteran Union and Youth Union in the lending process such as coordinating with VBSP to communicate preferential credit policies to poor households and other disadvantaged groups, establish and manage savings and credit groups, supervise the loan use process, remind borrowers to repay loans on due time etc. This is such an advantage for VBSP to mobilize the community participation in the project communication to residents.

4. Finance

To conduct the strategy objectives oriented to sustainable finance development, VBSP will formulate the preferential loan condition for targeted clients instead of preferential lending interest rates. Many credit products will apply the market interest rate. VBSP will mobilize all

resources and disburse loans timely to respond with the borrowing demand of borrowers. VBSP will diversify products and services, apply modern technology to develop and expand such value-added services as savings deposit, payment cards, insurance etc. for income growth in addition to the current credit operation.

Table 4: Financial statement in 2011-2015

Unit: Million VND

TARGET	31/12/11	31/12/12	31/12/13	31/12/14	31/12/15
A. INCOME	9,899,655	11,261,918	12,225,465	12,145,378	11,853,644
<i>Interest income from lending activities</i>	5,709,333	7,364,361	8,754,526	9,777,568	10,591,162
<i>Other income from credit activities</i>	672,965	132,826	37,954	57,541	60,326
<i>Interest income from deposits</i>	319,394	214,916	127,147	88,601	149,640
<i>Income from payment activities</i>	367	211	220	253	306
<i>Income from treasury activities</i>	4	3	-	5	17
<i>Income from other activities</i>	146,916	191,372	216,622	258,784	295,519
<i>Subsidy from State budget for minus interest spread and</i>	3,034,392	3,340,844	3,079,186	1,937,090	750,183
<i>Other incomes</i>	16,284	17,387	9,810	25,536	6,491
B. EXPENSES	9,498,368	10,592,329	12,049,599	11,780,601	11,462,998
<i>Funds mobilization expenses</i>	5,145,718	6,338,427	6,652,532	6,167,201	5,722,991
<i>Expense associated with payment and treasury activities</i>	22,682	20,693	29,890	36,748	41,834

<i>Fees paid for entrusted lending services</i>	1,242,812	1,412,177	1,861,763	2,065,053	2,132,280
<i>Asset expenses</i>	314,835	360,964	350,646	357,326	383,440
<i>Staff expenses</i>	1,699,075	2,093,359	2,135,065	2,346,279	2,378,556
<i>Managerial and operation expenses</i>	284,197	307,331	358,763	360,094	395,323
<i>Provisions</i>	784,232	54,125	650,501	438,916	400,748
<i>Other expenses</i>	4,817	5,253	10,439	8,984	7,826
C. PROFIT (INCOME – EXPENSE)	401,287	669,589	175,867	364,777	390,646

5. Funding sources

The current structure of the VBSP’s funding source includes: Funding from the Central Budget Borrowings assigned by the Government; Funds mobilization from the market; Entrusted funds from local state budget, economic organizations and individuals; other liabilities. In which, the fund mobilization from the market makes up 52.9%, funds from the central budget is only 18.9%. (*Sources: VBSP*)

Almost all credit programs of VBSP are conducted from the funding source mobilized by VBSP itself while the funds from the central budget is used to maintain the revolving fund and prioritized for poor households and ethnic minority.

VBSP conduct fund mobilization from the market through the network of fixed-date transaction points at commune level, deposit service, payment cards, diversified savings product, interbank market, bond issuance, etc. In 2016, VBSP established with LienViet PostBank to develop such areas as: internet banking, mobile banking, e-wallet. VBSP also develop services on foreign currency remittances and fund transfer (VBSP is currently providing the domestic fund transfer and acting as a sub-agent for the BIDV Western Union service) as well as savings deposit for residents at commune fix-dated transaction points (currently, VBSP is providing the savings service for its customers).

VBSP commitment of funds: VBSP commits a counterpart fund to participate in LCASP in accordance with regulations of ADB and the State of Vietnam to implement the Project successfully.

6. Lending interest rate

During the first months of 2016, the average interest rate of the banking system in Vietnam is 8.85%/year. Currently, there are four credit programs applied the interest rate of 9%/year: (i) Loan for water supply and rural sanitation; (ii) Loan for production households in disadvantaged areas; (iii) Loan for entrepreneurs disadvantaged areas; (iv) and loan for SMEs. In addition, almost other credit programs are gradually near with the commercial interest rate: Loan for households who have just escaped from poverty (8.25%/year); Loan for near-poor households (7.92%/year). A few of credit programs apply the interest rate under 1.2%/year to 3.3%/year, i.e. lending to poor ethnic minority, people with disabilities and housing. Nevertheless, the loan portfolio of these credit programs only accounts a tiny proportion of 4% in gross.

7. The VBSP’s compatibility if participate in the project

7.1 The operation network ranging in 10 project provinces

VBSP has an advantage on strong network operation in 10 targeted provinces of LCASP including: (i) VBSP has an operation network covering from central to local level, especially to village/hamlet level in 10 project areas. VBSP has its provincial, district branches and fix-dated transaction points at commune level and savings & credit groups at village/hamlet level in 10 project provinces. This network not only helps identify potential clients, lending, disbursement, loan collection but also communicate and marketing products and services to clientele. (ii) In addition, VBSP also collaborate with People’s Committee at commune level and local mass organizations to boost communication, encourage households use loans for right purpose and repay on time as regulated by VBSP, monitor and control credit activities at grass-root level to improve credit quality for VBSP.

Table 5: The VBSP operation network in 10 project provinces

No.	Provincial branches	District transaction offices	Commune transaction points	Savings & credit groups
1	Soc Trang	11	109	3.402
2	Ben tre	9	164	3.213

3	Ha Tinh	13	262	3.891
4	Lao Cai	10	164	2.505
5	Phu-Tho	13	277	4.293
6	Tien Giang	10	173	3.482
7	Nam Dinh	10	229	3.618
8	Bac Giang	10	230	3.647
9	Binh Dinh	11	159	2.573
10	Son La	12	204	3.813
	Total	109	1.971	34.437

7.2 Credit policy

VBSP conduct credit policies by the microfinance mechanism: VBSP does not apply the loan security regulations of commercial banks as stated at Article 9 in Decree No.55/2015/NĐ-CP dated 9th June 2015 issued by the Prime Minister on the credit policy for rural and agriculture development “*the borrower who has no secured asset must send the credit institution land use right certificates without dispute and certified by People’s Committee at commune level*”. VBSP provide trust loans under guarantee of local mass organizations and authorities. This mode will be suitable with the credit policy for production households in the LCASP project, help households who have borrowing demand to access to the LCASP credit product in 10 project areas. Therefore, a loan amount of less than VND 50 million does not require land use right certificate in VBSP, which is very reasonable with the borrowing demand of households who want to install biogas and facilitate more effective and quicker disbursement.

7.3 The disbursement plan for the project

Given the actual experience on providing rural and agriculture credit, VBSP will design the credit product for the LCASP project as follows:

- Loan amount: up to VND 50 million/small-size construction (not require loan security). The average loan amount will be VND 20 million/household, reasonable with the VBSP’s priority for small-size constructions for households. Besides, for the loan size of more than VND 50 million, the borrower is required loan security by asset.
- The loan term: 3-5 years, the grace period is 6 months.
- The tentative interest rate: 9%/year.

Disbursement mode: once or many times according to the progress of building constructions. The borrower signs and receives loans directly from the bank. VBSP delivers loan (by cash or transfer) directly to borrowers or the company of building constructions if agreed among sides.

The borrower participates in the savings and credit groups in locality. The savings and credit group is subject to the management of one in four local mass organizations.

7.4 The lending procedures and loan management for LCASP

The Representative Unit of the Board of Directors at provincial, district levels take in charge of formulating the credit plan. The unit leader is the chairperson of the People’s committee at the same level and its members are representatives from departments of Planning and Investment, Finance, Agriculture & Rural Development, Central Bank and mass organizations who are assigned to manage loans via savings and credit groups. Mass organizations will coordinate closely with VBSP to conduct the project, act as the important role in the project, to communicate the project and join other financial services such as savings with a view to making VBSP’s credit operation more effective and efficient.

7.5 Disbursement schedule

With the average loan amount of VND 20 million/household as well as based on the capacity and experience in the disbursement of rural and agriculture projects, VBSP would like to formulate the disbursement plan as follows:

Table 7: Plan for capital disbursement

Unit: households/VND

Period	Customers	Amount
Year 1		
Quarter I	2,194	43,886,855,000
Quarter II	4,389	87,773,710,000
Quarter III	6,583	131,660,565,000
Quarter IV	6,583	131,660,565,000
<i>Total</i>	<i>19,749</i>	<i>394,981,695,000</i>
Year 2		
Quarter I	6,583	131,660,565,000
Quarter II	6,583	131,660,565,000

Quarter III	6,583	131,660,565,000
Quarter IV	4,389	87,773,710,000
Total	24,138	482,755,405,000

During two project years, VBSP will disburse more than VND 877.7 billion (~ USD 40 million) for around 43,887 customers in 10 project areas, of which:

Loan from ADB (85%): over VND 746 billion ((~ USD 34 million)

Counterpart fund from VBSP (15%): about VND 132 billion (~ USD 6 million) (from the credit for water supply and rural sanitation).

Conclusion:

- (i) The credit component of LCASP is deployed slowly due to both objective and subjective reasons, in which, an important cause is a huge number of potential customers, who are farmer households raising livestock at small scale, have not been facilitated with convenient loan procedures to borrow from the Project.
- (ii) VBSP has recently moved toward market trend commercialization and have schedules in conformity with project objectives: (i) microfinance credit; (ii) lending without red book as collateral; (iii) simple loan procedures, suitable for poor farmer households. Programs and projects implemented by VBSP recently for International donors and the Government shares similarities with LCASP and are implemented successfully.
- (iii) Making VBSP a partner to implement credit component of LCASP is necessary to ensure successful implementation in the remaining 3 year of project implementation.