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Bangladesh Agricultural Value Chain Project
TECHNICAL REPORT:
Study of Financial Flow Patterns
Within A Market System

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TECHNICAL REPORT: Study of Financial Flow Patterns Within A Market System

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EXECUTIVE SUMMARY

This study intends to identify the relationships between different types of actors within the agricultural ecosystem and also to have an understanding about their cash-flow patterns and their savings, expenditure and investment behavior. All the information has been derived from questionnaire survey (with farmers as the respondents) and in-depth interviews with market actors associated with the selected value chains and geographic boundaries.

In Bangladesh, the majority of farmers fall under the smallholder farmer category, cultivating 2.49 acres or less. Cultivating 3 crops (crop cycles) in a year is a common practice. 51 percent of farmers cultivate their own land, while 30 percent cultivate land taken on lease, mortgage or on a crop sharing basis. 19 percent of the farmers cultivate on a mix of these two, and among these the average personally owned to leased land ratio is 45:55 percent. Among high value crop farmers (mango, coir and flower) the ratio is 61:39 percent.

Financial flows are primarily cash-based with payments issued upon delivery of product. In certain cases, payment method variations are found such as credit sales, advance payments, specific lending arrangements or even formal loans. The inflow for the farmers is the sales proceeds from the crop, usually in the form of cash when the crop is brought to the market. In some cases, such as Mango farming, the farmers can get payment in advance. The common outflow for the farmers includes payments for seed, fertilizer, pesticides and labor cost. When the farmer does not own the land, outflow also includes any rental/mortgage payment on the land. Other outflows may be present depending on the type of crop and other factors.

Mango and Flower farmers usually use a piece of land for a single purpose and generally are not involved in other value chains. Mango farmers are on average more economically stable than others and are not primarily dependent on income from farming. *Farias* negotiate with mango farmers to buy mangoes from the orchard for 2 to 4 seasons and pay a portion in advance. Flower cultivation is mostly limited to a small area in Godkhali, Jessore. The price is determined by the quality of the flowers and by seasonal boost in demand due to major national festivals.

The cost of labor is ever increasing due to increasing cost of living, which farmers state puts them at risk. Farmers have the benefit of payment in cash, but are “price takers” with limited bargaining power over the offers of the *Aratdars* (middlemen/traders), *Farias* (collectors), and *Beparis* (wholesalers). A limited number of large buyers and shorter value chains impede farmers from having greater bargaining power. Flower and mango farmers enjoy higher margins and greater bargaining power.

Farmers cultivating tomatoes and other summer vegetables have higher profit to investment ratios compared to those cultivating more conventional crops such as cereals (rice and wheat) and potatoes. Studied farming households appear to be generating significant income from non-farm activities as well. On an average, a household has one to two members engaged in non-farm income generating activities. Expenses for medical treatment came up as the major cause of unforeseen household expenditure. Households in most cases resort to early selling of crop (versus storing for selling later) or take loans or spend from savings to cope up with such unforeseen expenses.

Analysis of financial management practices among the surveyed farming households have revealed most of the transactions of these households with other actors in the value chain to be on a seasonal basis. Regular value chain farmers tend to transact directly with end consumers, while their high-value crop counterparts conduct transactions through intermediaries. The majority of the regular value chain farmers get paid in cash when they sell their produce, while almost two-thirds of the high-value crop farmers do not get paid fully when selling their produce. Over half of the responding farmers have reported taking loans, mainly from micro finance service providers and commercial banks. Over 44 percent of these farmers are not satisfied with the credit service currently available to them. Significant portions of farmers from both types of value chains have expressed interest in using mobile phone based financial services to sell or buy goods.

The most common cause of financial problems for farmers is crop failure. In many cases, this is due to severe weather conditions or other circumstances beyond the control of the farmers. If weather or crop insurance policies are available to farmers to insure against such crop failure, the overall financial system in which the farmer operates will become more efficient and effective.

At present most loans availed from microfinance institutions (MFIs) have weekly repayments starting from the week after drawdown, but farmers taking such loans do not reap the rewards of the loan until the end of the crop cycle. Loan repayment timelines need to be modified to reflect this.

Farmers will benefit from 'Financial Literacy Training' to help improve understanding of various loan mechanisms, planning for future expenditures and savings options. This would also deter farmers from taking loans to fund non-productive investments, which is one of the most common reasons farmers fall into exceptionally high loan burdens.

From the AVC selected value chains, flower farming is very unique in a number of aspects. The initial investment requirement for farming high quality flowers is high. Financial products tailored to helping farmers meet the initial investment requirement for flower cultivation need to be developed to allow more farmers to shift into this high-value sector.

In the case of mango farming, a funding shortage exists on the side of the buyer. The *Aratdars* buy mango in very large quantities and also provide advance payments to mango farmers. A further study into the financial flow of actors further down the value chain but indirectly linked to the farmers can lead to better understanding to develop tailored financial products.

CHAPTER I: INTRODUCTION

This study intends to identify the relationships between different types of actors within the agricultural ecosystem and understand their cash-flow patterns and savings, expenditure and investment behavior. All the information has been derived from a questionnaire survey (with farmers as the respondents) and in-depth interviews with market actors associated with the selected value chains and geographic boundaries.

I.1 CONTEXT OF THE STUDY

DAI Global, LLC (DAI), an international development firm, is implementing the U.S. Agency for International Development's (USAID) Agricultural Value Chains project (AVC), funded under the Feed the Future Initiative (FtF). USAID's AVC project enhances long-term food security in the Southern Delta through inclusive, diverse and competitive agricultural value chains. AVC works with crops that are nutritious, and/or high income generating, while being agronomically and culturally feasible in the Southern Delta.

AVC promotes sustainable and inclusive economic growth in selected value chains by applying a market systems approach to increase on- and off-farm income at the household level and maximize retained earnings for the rural poor. The project supports increased access to and availability of diverse and nutritious fruits, vegetables, and pulses in local, regional, and national markets to improve food security in the FtF zone of influence. The project targets a portfolio of both food and non-food agricultural crops and addresses shared constraints across those agricultural value chains, including essential support services that are lacking in the targeted market systems.

In the current rural market environment, AVC observed an environment of distrust and recurrent win-lose transactional relationships among market actors. Current management practices specifically devalue suppliers and customers, plus internal staff, while over valuing short-term rent seeking behaviors leading to the abuse of power to "win" a transaction. These practices restrict economic growth and poverty reduction processes.

To address this limitation, AVC commissioned this study to provide the project with a clear understanding of financial relationships among the value chain actors as well as the behavior patterns of different actors in borrowing, saving, consumption and investment. The assignment requires farmers' behavior pattern analysis (saving, borrowing, consumption, investment and household level financial decision making behavior) and farmer segmentation analysis based on land size, level of commercialization, market relationships and investment patterns.

The study also identifies and analyzes sources, uses and patterns of formal and informal financial flows between different market actors (including informal loans, sales credits, supplier credits, terms/conditions, identifiable patterns of extractive behaviors, etc.), and cash flow analysis of different market actors (including input sellers, traders, and service providers) involved in the agriculture sector of the Southern Delta.

I.2 METHODOLOGY ADOPTED

SEGREGATION OF VALUE CHAINS

This study covered the following nine agricultural value chains: (1) Potato, (2) Tomato, (3) Ground nuts, (4) Pulses, (5) Summer vegetables, (6) Jute, (7) Coir, (8) Mango, and (9) Flower. These value chains are segregated by AVC as food value chains (e.g. Potato, Tomato, Pulses etc.) and non-food ones (Coir, Jute and Flower). For the purpose of this particular study, these 9 value chains are segregated into two broad groups – regular value chains and special (high-value) value chains. Mango, Coir and Flower are grouped under special value chain. Separate questionnaires and interview checklists were developed for these two broad groups of value chains. The logic behind these two groups is as follows:

- Those found to be involved in cultivation of Mango usually have a separate non-farm source of income. These are usually persons owning (not leasing) adequate land where a large number of mango trees are planted. They usually earn their living primarily from some non-farm job and the income from mango comes as additional income.
- Behavioral patterns are significantly (if not totally) different among flower farmers. While small flower farmers are usually involved in cultivation of flowers only, medium and large flower farmers may be involved in cultivation of other crops. Flower farmers involved in cultivation of other crops usually cultivate those other crops for their own household consumption or on quasi-commercial basis.
- No farmer is involved solely in the coir value chain as coir is a byproduct of coconut cultivation, which is mainly cultivated for coconut oil. Hence behavioral patterns and the responses to the survey questions are significantly different.

QUESTIONNAIRE BASED SURVEY OF FARMERS

According to the Bangladesh Bureau of Statistics (BBS), the population (members of farmer communities) in the twenty Feed the Future districts is larger than 100,000. Therefore, for sample determination for this particular study, the following sample size selection formula for infinite population will be used¹.

$$SS = [Z^2 * (p) * (1-p)] / c^2$$

Where,

SS = Sample Size;

Z = Z value, which varies with the confidence level;

p = a dichotomous probability variable, for p = 50% the formula results in highest sample size;

C = Level of Precision.

Considering the 95% Confidence level and the 5% Level of Precision, the sample size (SS) equals to **384** ≈ 400. The table below shows the distribution of the samples across the selected districts, sub-districts, and value chains.

Value Chain	District	Upazilla	Sample size
Flower	Jessore	Jheekargacha	40
Coir	Bagerhat	Bagerhat sadar	40
Mango	Satkhira	Satkhira sadar	40
Potato	Shariatpur	Damudda	40
Tomato	Bagerhat	Damudda	40
Jute	Faridpur	Boalmari	40
	Narail	Narail Sadar	
Ground Nut	Bhola	Char Fassion	40
Lentil & Mug bean	Jhenaidah	Sadar & Shaillkupa	40
Summer Veg 1	Bagerhat	Mollarhat	40
Summer Veg 2	Jessore	Chauagacha	40

¹ a) Cochran, W. G. 1963. Sampling Techniques, 2nd Ed., New York: John Wiley and Sons, Inc (<http://onlinelibrary.wiley.com/doi/10.1002/bimj.19650070312/abstract>)

SAMPLING PLAN FOR IDI (IN-DEPTH INTERVIEW)

Consultants and their associates conducted in-depth interviews (IDI) with different stakeholders including members of farmer communities, commercial actors, input and output actors (input retailers, dealers, traders and buyers), financial service providers, support service actors, regulatory actors, etc. IDIs have been used to understand sources, uses and patterns of different types of formal and informal financial flows between different commercial actors, sales/trading systems and processing and terms/conditions and any identifiable patterns of extractive behaviors. The number of IDIs is tabulated in the table below. The judgmental sampling method has been used to determine the district and IDI sample number. Literature review and experience and suggestions from the AVC team have also determined the final number of IDIs and the sample distribution across districts.

Respondent Type for IDI	Total sample number in 4 districts
Farmers	10
Input Retailer	12
Trader	20
Transporter	5
Regulatory actor & others	3

I.3 FARMER SEGMENTATION (BASED ON LAND HOLDING AND NUMBER OF HARVESTS PER YEAR)

This section intends to portray certain basic characteristics of the sample used for the questionnaire survey of the farmers (500 farmers from 9 districts). Responding farmers are categorized against the size of the land they cultivate, number of times they harvest per year, ownership of the land they cultivate on and against the amount of money they invest in cultivation.

Among the respondents only 3 percent were women farmers. The point to be noted here is women are involved in agriculture directly on the field and at home management to a great extent, equal to that of their male counterparts. However, female heads of household are rare. Since this survey aimed to cover only household heads, female representation in the sample is much lower than their actual contribution.

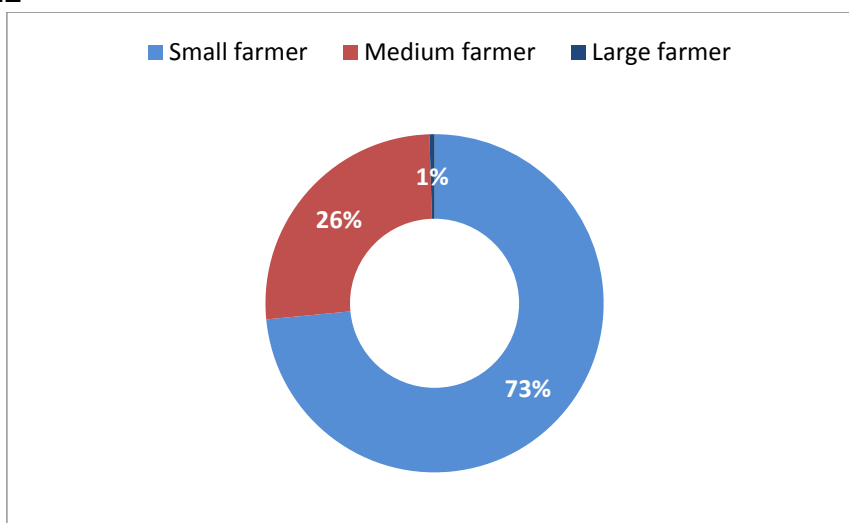
As per national statistics (BBS, 2009)² farming households cultivating on 2.49 acres or less are categorized as small agricultural households. Those cultivating on land mass ranging from 2.5 acres to 7.49 acres are categorized as medium agricultural households, while households cultivating on land mass equal or greater than 7.5 acres are categorized as large agricultural households. The study sample is also segregated following the same standards and the result is shown in Figure 1.1.

As per national data, 84 percent of the farming households are small, while the ratio of medium and large farming households is 14 percent and 2 percent respectively. As shown in the figure below, the sample may be considered as a representative one in terms of land cultivated by farmers from different groups (small, medium and large).

- The majority of the farmers fall under smallholder farmer category cultivating 2.49 acres or less of land.
- Cultivating 3 crops (crop cycles) in a year is a common practice.
- 51 percent of the farmers cultivating only on their own land.
- 30 percent of the farmers do not own any land. They cultivate on land taken on lease, mortgage or crop sharing.
- 19 percent of the farmers cultivate on a mix of these two
- Among these the average personally owned to leased land ratio is 45:55 percent. Among high value crop farmers the ratio is 61:39 percent

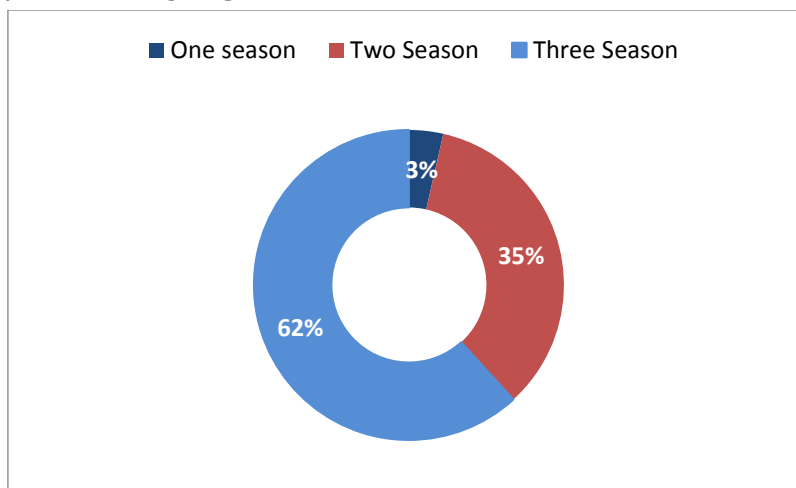
² BBS, Agricultural Census 2008, Bangladesh Bureau of Statistics, Ministry of Planning, Government of the People's Republic of Bangladesh.

FIGURE 1.1: CATEGORIZING RESPONDING FARMERS IN TERMS OF FARM (LAND) SIZE



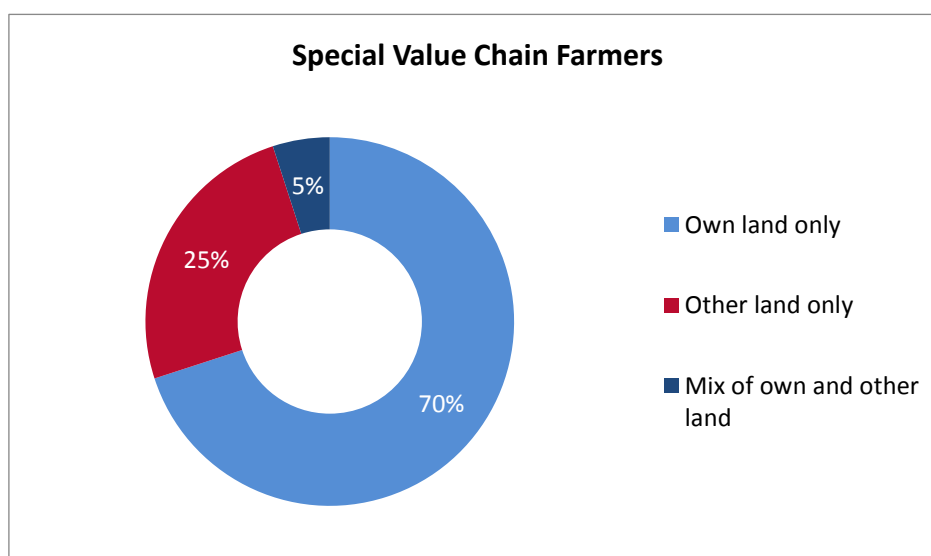
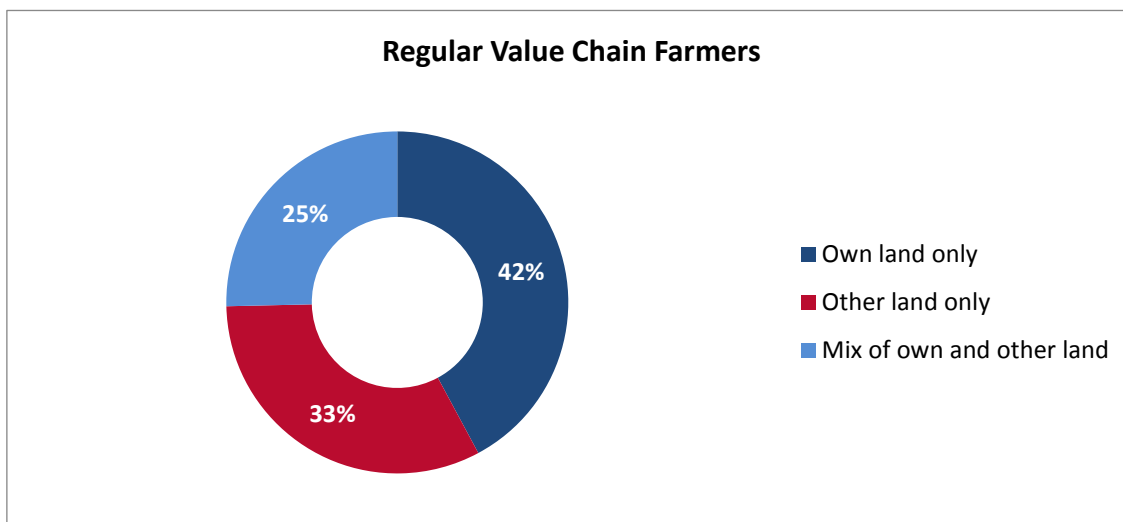
Farmers very rarely have only one harvest in a year. They are usually cultivating different crops in different seasons. Survey results show that only 3 percent of farmers cultivate during only one season. Thirty-five percent of respondent farmers cover two seasons, and as expected the majority of the farmers (62 percent) cultivate three seasons per year. An additional point here is that during a single season a farmer may cultivate more than one crop. For example, a farmer who cultivates in summer may use some of his/her land for cultivating a variety of rice and some for cultivating vegetables. Segmentation of the respondents in accordance with the number of seasons they cultivate in a single year is shown in figure 1.2).

FIGURE 1.2: FARMER SEGMENTATION BASED ON THE NUMBER OF SEASONS THEY CULTIVATE IN A SINGLE YEAR



As stated previously, not all farmers cultivate only on their own land. Thirty-three percent of regular value chain farmers do not cultivate on their own land at all (either because they do not have land or the land they have is being used for other purpose or is not good enough to cultivate on). These farmers cultivate on land owned by others who lease or mortgage the land to these farmers, or provide land through a share crop system. The following 4 types of land ownership modalities are found in this survey: (1) own land, (2) leased land, (3) mortgaged land and (4) share cropping. A single farmer may be relying on a mix of multiple modalities (e.g. cultivate some crop on his/her own land and some on leased land). Land ownership related patterns appear to vary significantly between regular value chain crops and special value chain crops. Land ownership patterns for regular value chain farmers versus special value chain farmers are given in Figure 1.3.

FIGURE 1.3: LAND (USED FOR CULTIVATION) OWNERSHIP PATTERNS OF THE RESPONDING FARMERS



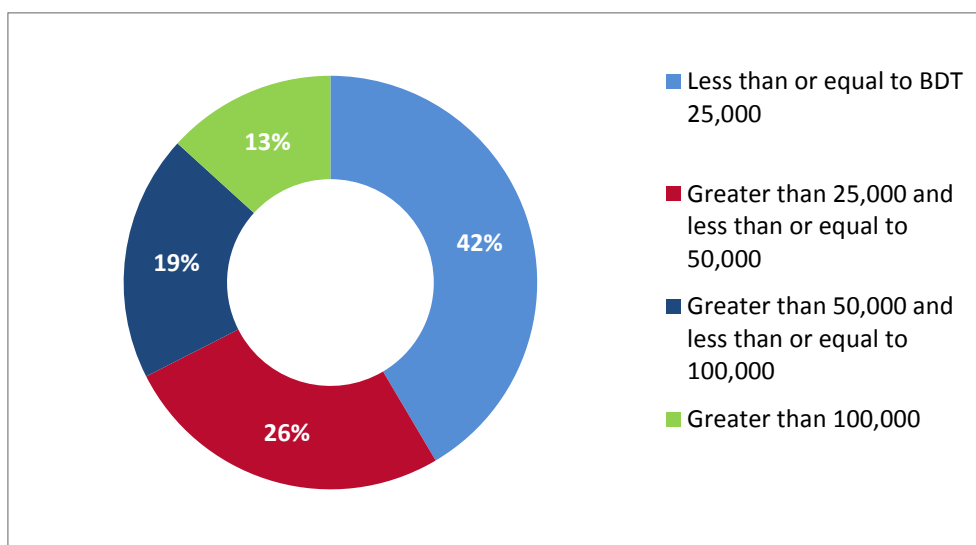
RESPONDING FARMERS

In the case of regular value chains over 40 percent of the farmers have been found to be cultivating on their own land only. On average these farmers cultivate on 69 decimals of land. On the other hand, one third of the regular value chain farmers do not own any land of their own. These farmers on average cultivate on 88 decimals of land per farmer. The average amount of land cultivated by a single farmer appears to be higher for farmers cultivating on leased/mortgaged land than farmers cultivating on owned land. The average amount of land cultivated by a single farmer is 88 decimals for farmers who cultivate on both owned and rented land. These farmers constitute one-fourth (25 percent) of the total responding farmers. For farmers who cultivate on both types of land, on average 45 percent of the land is owned by the farmer himself/herself, while the remaining is from other sources.

The ratio of the farmers cultivating on owned land is much higher (70 percent) among special value chain farmers compared to their regular value chain counterparts. In the case of special value chains, around 25 percent of farmers do not own any land. Only 5 percent of the special value chain farmers have been found to be cultivating on both owned and other land, and in such cases over 60 percent of the cultivated land is owned by the farmer himself/herself. The average cultivated land size among farmers cultivating on both types of land is 124 decimals, while among farmers cultivating on owned land only and farmers cultivating on other land only, it is 121 decimals and 62 decimals respectively.

The final figure in this chapter shows the segmentation of the responding farmers in terms of the amount of money they invest in cultivation (for all the crops they cultivate) in a year.

FIGURE I.4: SEGMENTATION OF FARMERS IN TERMS OF INVESTMENT (EXPENSES) FOR CULTIVATION



As shown in the figure above, over 40 percent of farmers spend less than or equal to BDT 25,000 annually on cultivation of crops. This implies that if a farmer from this group is cultivating 3 crops (3 harvests) in a year, then s/he on average invests a maximum of just over BDT 8,000 per crop. Farmers spending more than BDT 25,000 but less than or equal to BDT 50,000 per year for cultivation constitute 26 percent of the total farmers (this is the second largest group). Combining these two groups, almost 60 percent of the farmers invest less than or equal to BDT 50,000 per year for cultivation, which aligns with the fact that 73 percent of responding farmers are smallholder farmers.

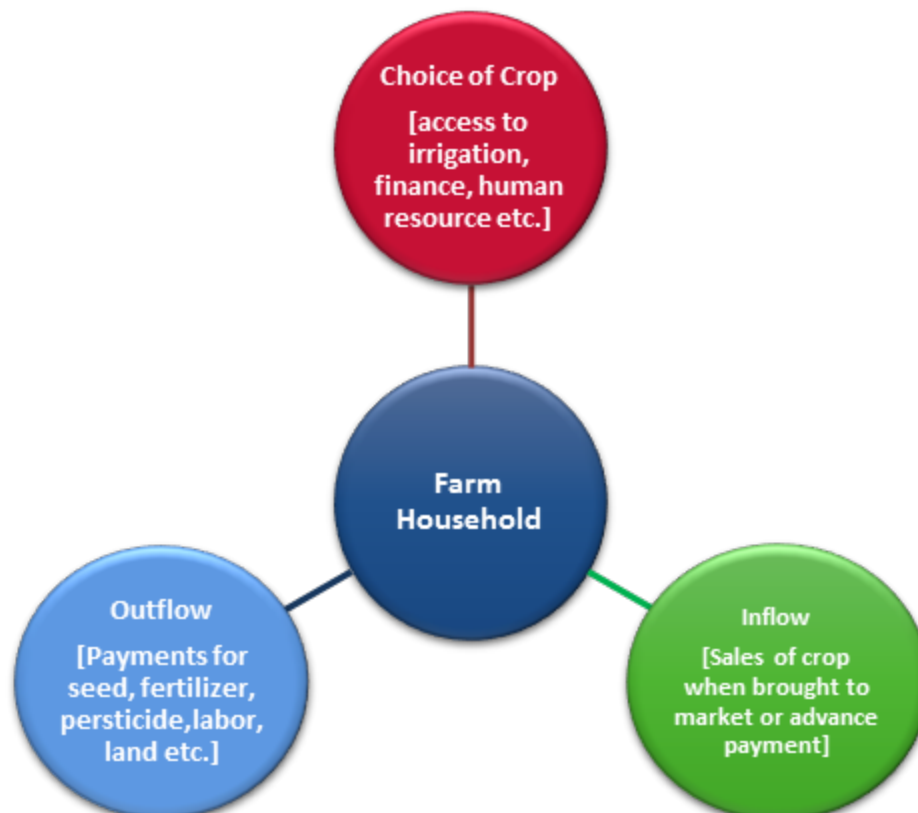
CHAPTER 2: FLOW OF FUNDS IN SELECTED VALUE CHAINS

Financial flows are primarily cash-based with payments issued upon delivery of product. In certain cases, payment method variations are found such as credit sales, advance payments, specific lending arrangements or even formal loans. The inflow for the farmers is the sales proceeds from the crop, usually in the form of cash when the crop is brought to the market. In some cases, such as Mango farming, the farmers can get payment in advance. The common outflow for the farmers includes payments for seed, fertilizer, pesticides and labor cost. When the farmer does not own the land, outflow also includes any rental/ mortgage payment on the land. Other outflows may be present depending on the type of crop and other factors.

2.1 OVERALL FINANCIAL INFLOW & OUTFLOW IN THE SELECTED VALUE CHAINS

Each farmer is usually involved in multiple value chains. A single farmer usually cultivates more than one crop on the piece of land he has access to (as tenant or as owner). The number of crops a farmer will cultivate on a piece of land depends on many factors, such as inundation during rainy season (low lying land is often not cultivated during rainy season), access to water for irrigation, access to finance, availability of human resources, etc. Based on these factors a farmer may choose to cultivate 2 to 4 crops a year on a single piece of land.

FIGURE 2.1: FACTORS DETERMINING CHOICE OF CROP AND BASIC INFLOW-OUTFLOW OF MONEY FOR FARM HOUSEHOLDS

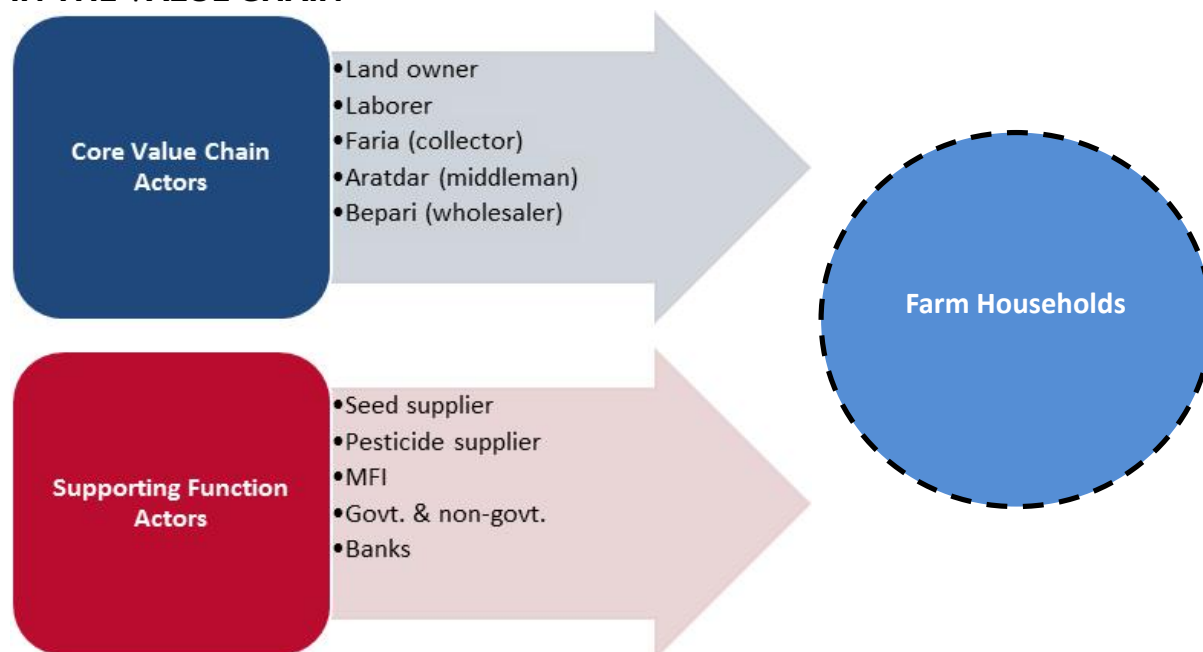


2.2 ACTORS IN THE VALUE CHAIN

There are a number of actors who have financial relationships with the farmers in the selected value chains. We have divided these actors into categories. The first category is actors who are active in the core value chain and have a much greater influence on the farmer's financial flows. The second category is actors who have a smaller supporting function in the value chain.

The actors in the core value chain are land owners, laborers, Faria (collectors), Aratdar (middlemen/traders), and Bepari (wholesalers). The actors assuming the supporting functions of the value chain include seed suppliers, pesticide suppliers, MFIs, government, and commercial banks.

FIGURE 2.2: CORE VALUE CHAIN ACTORS AND SUPPORT FUNCTION ACTORS IN THE VALUE CHAIN



2.3 FINANCIAL RELATIONSHIPS BETWEEN FARMERS AND OTHER ACTORS

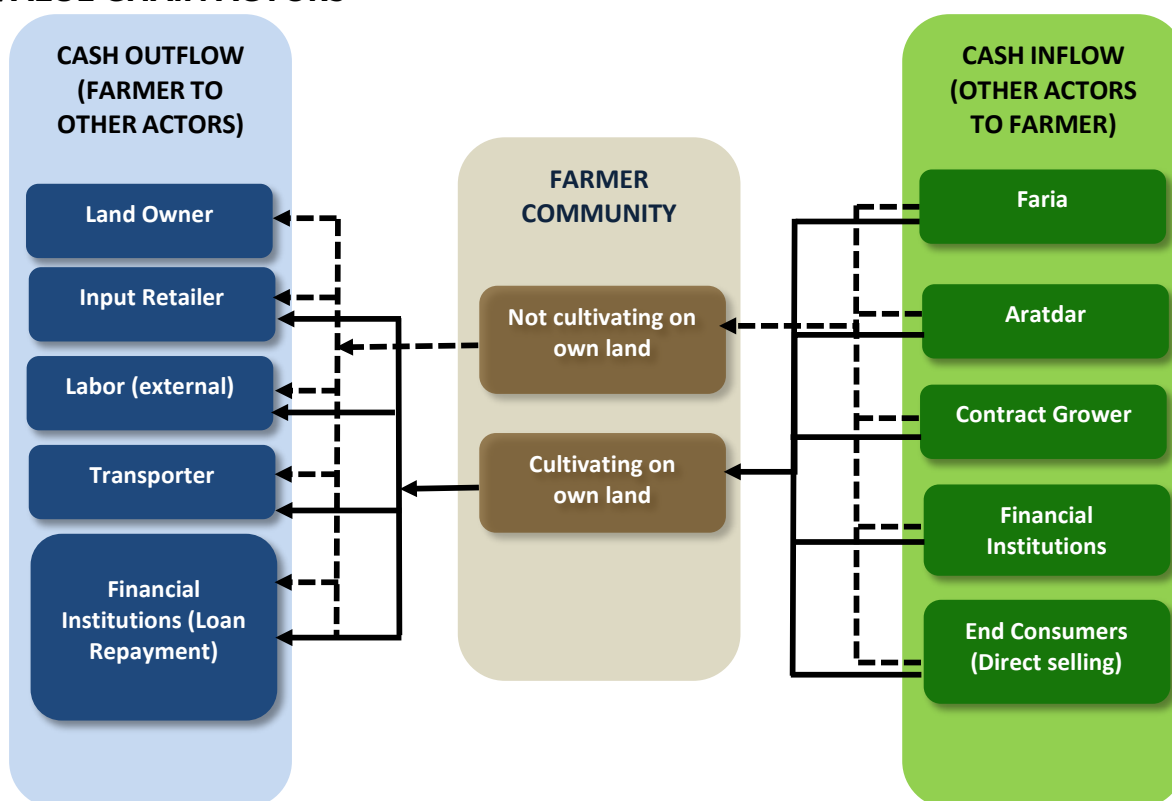
Vertical relationships between farmers and other actors vary depending on the type of value chain and also the individual farmer. Observations regarding these relationships are summarized below:

The farmer's initial transaction is with landowners, in cases where the farmer himself does not own land or wants to farm on more than land than he owns. In some cases, this is an upfront direct cash transaction; however, in most cases, this is settled by means of crop sharing or sharing a portion of the proceeds from final sales. The next step is the purchase of seeds. Although some farmers use seeds collected from previous crop cycles, most seeds are bought from input retailers. In certain value chains, retained seeds can account for up to 50% of a farmer's total seed requirement. Financial flows related to seed purchasing vary from up front cash payment, in which case the farmer usually enjoys some form of cash discount (up to 10%), or payment scheduled for a later date. The repayment terms usually depend on the relationship between the farmer and the retailer.

The nature of financial relationships surrounding fertilizer and pesticides are similar to that of seeds. In general, the amount spent on these three aspects tends to be very low relative to the income from the crop and does not have a substantial impact in the cash flows of the farmer. The majority of the input expenses of the farmer are in the form of labor costs. These are almost always paid in cash on a day-to-day basis, but there are some instances where laborers work on the agreement that a portion of the produce will be shared with them at the end of the crop cycle.

Once the crop is harvested, the farmer takes the crops to the local markets (*Arats*) for sale. These local markets are typically open two days a week. In some cases, *Farias* collect the produce directly from the farmer and pay cash. The produce is sold at the prevailing market rate at the local market and the majority of buyers are *Farias* and *Beparis*. It is common practice for purchases to be made by means of *Aratdars*. Their role is primarily to act as an intermediary between the farmers and the buyers and in return they take a commission, which is set based on either the value of the transaction or the volume. The *Faria* and *Beparis* can buy on credit, which is settled with the *Aratdar* on mutually agreed payment terms, who pays the farmers cash on delivery. The responsibility of collection from the *Faria* and *Beparis* lies with the *Aratdars*. The credit is on a revolving basis. The produce purchased from these smaller *Arats* is typically taken by the *Farias* and *Beparis* to be sold in larger regional *Arats* at higher prices. Wholesalers from across the country as well as large manufacturing companies come to the large regional *Arats* to buy.

FIGURE 2.3: FINANCIAL TRANSACTION RELATIONSHIPS AMONG DIFFERENT VALUE CHAIN ACTORS



The vertical relationships are relatively similar for most value chains with the exception of Mango and Flowers. Those involved in cultivation of mango and flowers appear to have significantly different conditions and modalities than those involved in the rest of the crops. Farmers cultivating mango and flowers usually use the piece of land for a single purpose and they are generally not involved in other value chains.

Mango farms on average are larger and more economically stable compared to other farmers

They usually have other sources of income, are not primarily dependent on the income from mango and do not need credit to buy inputs for cultivation. *Farias* usually visit mango orchards and reserve output from the farmers by paying part of the amount in advance. It is common practice for *Farias* to negotiate with mango farmers to buy all mangoes of a whole orchard for 2 to 4 consecutive seasons. The contracts are for multiple seasons, as it is believed that harvests across alternative seasons and over multiple periods will stabilize income. The risk of price fluctuations is borne by the *Farias*.

These *Farias* may act independently or work for larger *Aratdars* and *Beparis* from all over the country that provide advance payment in return for securing the produce for the upcoming season. The *Farias* pay the remaining amount to the farmers once they have sold the produce to the larger *Beparis* and *Aratdars*.

Flower cultivation is limited to a small geographical area in Godkhali, Jessore. Flower farmers have the required skills for farming different varieties of flowers and given the higher margins, they are economically better off than farmers of other crops. The local *Arat* in this case is the point of purchase of flowers for selling all over the country. The production of flowers also varies from other crops, as flowers can be harvested on a daily basis rather than harvesting at the end of a crop cycle. The price is determined by the quality of the flower as well as seasonal boost in demand due to major national festivals, such as Valentine's Day and Pohela Baishak.

- Farmers cultivating mango and flowers usually use the piece of land for a single purpose and they are generally not involved in other value chains.
- Mango farms on average are larger and more economically stable compared to other farmers.
- *Farias* usually negotiate with mango farmers to reserve output from the orchard for 2 to 4 seasons by paying a portion in advance.
- Flower cultivation is limited to a small area in Godkhali, Jessore.
- The price is determined by the quality of the flowers and by seasonal boost in demand due to major national festivals.

In other value chains, there are minor variations in these relationships. In the case of lentils, the farmers sell at *Arats* which *Aratdars* buy and stock themselves or on behalf of processing mills and retailing brands. In the potato value chain, a significant portion of the output is collected by *Beparis* to be stored in cold storages and sold at better prices over the rest of the year.

Horizontal relationships are not significant and the occurrences are rare. The instances observed of such relationships are as follows:

- Farmers combine land and work together on larger portions of land, thereby reducing the requirement of external labor.
- Smaller farmers work as laborers for larger farmers in addition to working on their own land, and this acts as an additional source of income.
- Farmers can borrow from other farmers in the neighboring areas or relatives who are also farmers. However, this relation is based on social connections rather than the capacity of farmers and therefore may not be considered as a horizontal relationship.

The relationship with **financial service providers** varies significantly between the type of farmers and the value chain they are associated with.

The widespread reach of micro finance institutions remains the primary source of finance for most players in the selected value chains. Unsecured loans at higher rates of interest are very common and a very high percentage of farmers avail them. In most cases, the finance is not directly related to requirements of crop cultivation but to satisfy fund shortage of farmer's household in general.

In the case of flower farmers, the amount of loans required is much larger and requirements can be identified in advance. These tend to be from formal banking channels and in most cases from government or commercial banks at a lower rate of interest. These funds are used to invest in the improvement of infrastructure required for cultivation of higher quality flowers. Typical loan amounts are usually around BDT 1,000,000 to BDT 2,000,000 (~USD 13,000 – USD 25,000)

In the case of mango farming, the larger *Aratdars* make advanced payments (usually by means of *Farias*) and the transaction volume is very large (up to BDT 10,000,000 per *Aratdar* in a given season). They avail working capital loans from commercial banks to make these advanced payments.

Although specific loan requirements are relatively small in other value chains, Tomato farming can require loans. These may be through formal or informal channels. These farmers can spend up to BDT 60,000 on input products with the majority for polythene protection required for cultivation when there is risk of rain.

2.4 MODALITIES, FORMALITIES AND POWER PLAY IN FINANCIAL RELATIONSHIPS

The relationships between farmers and the input actors are largely based on the social relationship maintained between the actors

Seed vendors in many instances can sell with high profit margins, without the knowledge of the farmers/buyers. Even with an offer for a cash discount, the farmer rarely pays at competitive prices. However, the total expenditure on seeds is a very small portion of the farmers' cost and the purchase is made from the most convenient source. This usually depends on geographic proximity and strength of relationship. In many cases, the farmers are able to buy on short term credit and trust the seed seller regarding the type/grade of seed; however, vegetable seeds are generally not sold on credit as farmers tend to blame poor yields on poor quality of seeds.

Labor costs are usually at the existing market rate and the farmer has very low negotiating power here. In general, there is a shortage of manpower willing to work on the farms and their payments are ever increasing as cost of living increases. The farmer may not be experiencing the same increase in income from selling his crops and must also take on the risk of poor crop or unusually low prices in that season.

Overall, the farmer does not have much bargaining power over the cost from input actors and is forced to pay prices as demanded by those actors.

On the output side, the farmer has the benefit of cash payments and does not bear risk of non-payment. This is usually borne by local *Aratdars*. But this also means that the farmers are parting from a portion of their revenue as commission to the *Artodars*. The commission rate at each *Arat* is fixed and the farmers can only sell at these *Arats* if they agree to the rate. The farmer is also dependent on the prices offered by *Farias* and *Beparis* for their produce. As most of the selected value chains deal in perishables, the farmer is forced to sell the harvested produce. In rare instances, the farmer can take purchased produce back to the *Arat* if the price is too low, but after bearing additional transport costs that also becomes an unattractive option.

With access to mobile phones, the farmers are able to find out prices in advance (previous day) or prices in other *Arats*. But the benefit of the greater access to information is limited especially for perishable produce. Additional transport costs of carrying the produce to a different *Arat* offsets the benefits.

In the case of produce with longer shelf life such as potato and lentils, the farmers should enjoy slightly better negotiating opportunities, but this is not always the case. For instance with lentils, the *Aratdars* work as *Beparis* to store the produce. The produce is then aggregated by larger *Beparis* and eventually taken to large mills for processing. However, since there are a limited number of very large buyers and relatively shorter value chains, the farmers may not experience the higher bargaining strength.

Across the selected value chains, due to the nature of their production cycles and higher transaction margins, the least exploited farmers are mango and flower farmers.

- The cost of labor is ever increasing due to increasing cost of living.
- Farmers have the benefit of payment in cash, but are "price takers" with limited bargaining power over the offers of the *Aratdars*, *Farias*, and *Beparis*.
- A limited number of large buyers and shorter value chains impede farmers from having greater bargaining power.
- Flower and mango farmers enjoy higher margins and greater bargaining power.

CHAPTER 3: FUND FLOW SITUATION IN THE STUDIED FARMING COMMUNITIES

Farmers cultivating tomatoes and other summer vegetables have higher profit to investment ratios compared to those cultivating more conventional crops such as cereals (rice and wheat) and potatoes. Studied farming households appear to be generating significant income from non-farm activities as well. On an average, a household has one to two members engaged in non-farm income generating activities. Expenses for medical treatment came up as the major cause of unforeseen household expenditure. Households in most cases resort to early selling of crop (versus storing for selling later) or take loans or spend from savings to cope up with such unforeseen expenses.

3.1 INCOME SITUATION IN STUDIES FARMING COMMUNITIES

Although surveyed households were all part of “farming communities,” the income of the studied households was found to include non-farm activities in addition to incomes from cultivation. In farm activities, the survey found that farmers do not distinguish between revenue and income. Hence, the survey results looked at information on revenue of their agricultural products’ sales and also the direct expenditure in producing them. Farmers in regular value chains (Potato, Tomato, Ground Nuts, Summer Vegetables, Lentil and Jute) were found to be engaged in a number of crops and farmers were not participating in one value chain exclusively. However, for special value chains (Coir, Flower and Mango), farmers were found to be working exclusively within the respective value chain.

Table below shows revenues and expenditures of the studied households separated by crop. At a is from 2015. Income was considered be the sales after removing direct expenditures related to the respective crop production.

TABLE 3.1: INCOME FROM AGRICULTURAL PRODUCTION (BDT/YEAR/HOUSEHOLD)

Value Chains	Product Name	Expenditure (BDT/Year)	Sales (BDT/Year)	Income (BDT/Year)
Regular Value Chains (Potato, Tomato, Ground Nut, Summer Vegetable, Lentil and Jute) (n = 280)	Summer Vegetables	13,378	46,730	33,352
	Lentil	4,894	14,312	9,418
	Maize	18,965	39,608	20,643
	Rice	15,248	24,594	9,346
	Jute	14,572	31,520	16,948
	Onion, Chili and Garlic	16,394	27,667	11,273
	Tomato	9,385	34,330	24,945
	Winter Vegetables	12,385	35,615	23,230
	Wheat	5,193	6,959	1,766
	Ground Nut	7,397	11,321	3,924
	Fruits	64,394	112,875	48,481
	Potato	94,000	123,865	29,865
	Oilseed	5,855	10,990	5,135
	Others	2,277	6,362	4,085
	Special Value Chains (Coir, Flower and Mango) Cycle I (n=120)	Coir	34,901	64,228
Flower		44,226	104,872	60,646
Mango		25,508	62,528	37,020

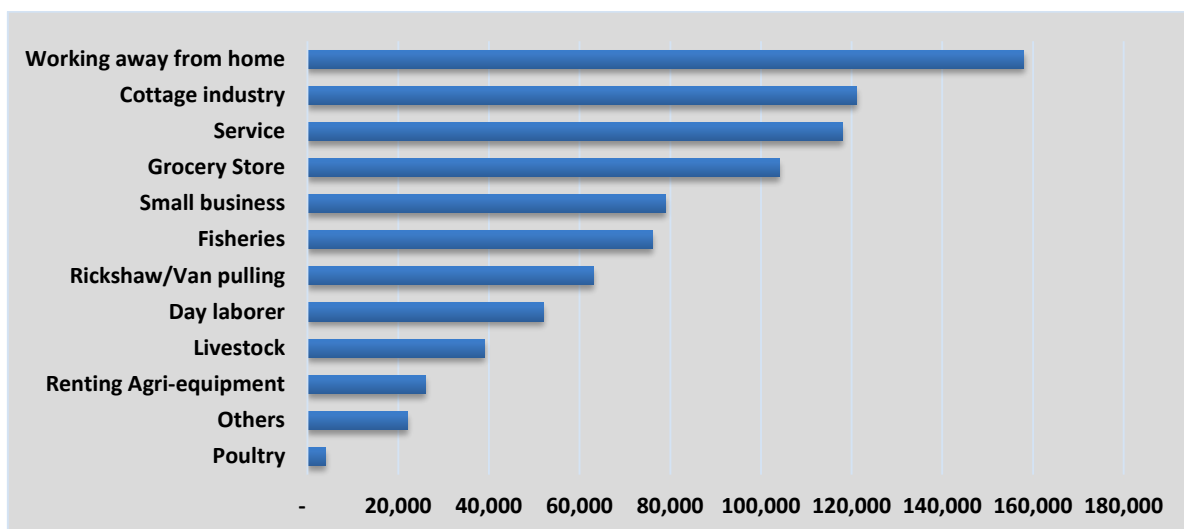
It can be seen from the above table that the farmers involved in flower production have the highest income. Fruits (including Mango) and summer vegetables also generate significant income for the farming households. The next figure shows the income from cultivation of these crops as percentage of the expenditure incurred for cultivating them. This shows that Tomato cultivation has the highest income to expenditure ratio, followed by summer vegetables and lentils.

FIGURE 3.1: INCOME FROM CULTIVATION OF DIFFERENT CROPS AS PERCENT OF THE EXPENDITURE INCURRED



As mentioned before, there were a number of non-farm activities in which the studied farming households were involved. An estimation of the annual income of these farming households from these non-farm activities is shown in the figure below.

FIGURE 3.2: INCOME OF FARM HOUSEHOLDS FROM NON-FARM ACTIVITIES (BDT/HH/YEAR)



There were significant differences found between engagement in farm and non-farm activities for the studied households. While the engagement in farm activities from the household is almost year round with at least one type of agricultural production, in case of non-farm activities, there were variations seen. Certain activities such as service, grocery store, cottage industry, small business, poultry, etc. have almost year round engagement from the households. On the other hand, more farm households were found to have involvement in activities like livestock rearing and day labor, which are seasonal. There were also variations observed in terms of engagement from the household members. More household members in a

household were seen engaged in livestock, while less numbers are engaged in laborious activities like day labor and rickshaw/van pulling.

FIGURE 3.3: PERCENT OF HOUSEHOLDS INVOLVED IN NON-FARM ACTIVITIES (MULTIPLE ENGAGEMENT POSSIBLE, I.E. SAME HOUSEHOLD CAN BE ENGAGED IN MULTIPLE ACTIVITIES)

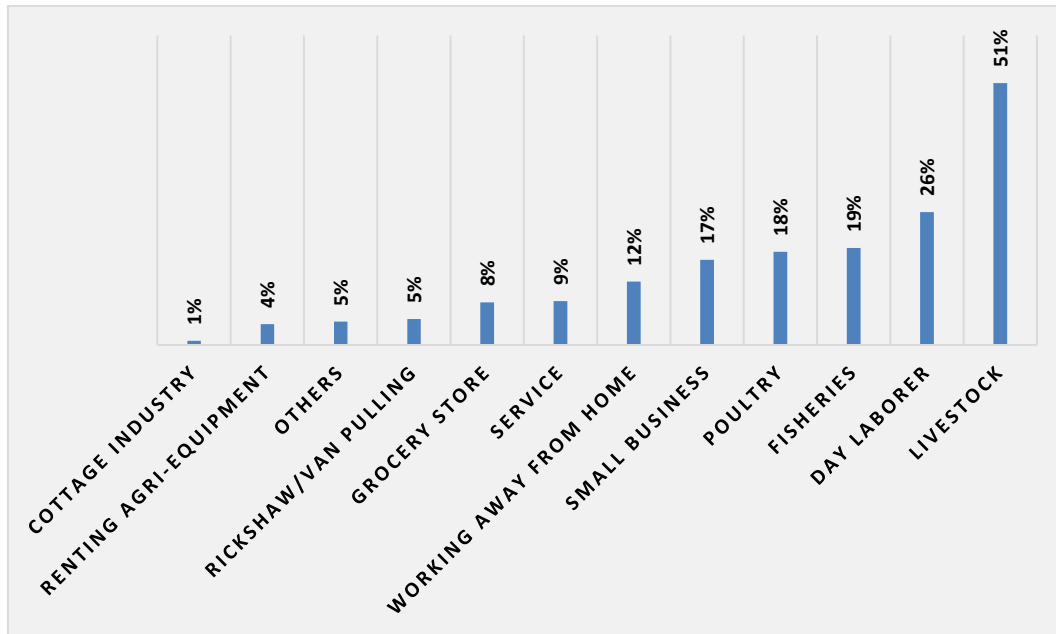


FIGURE 3.4: AVERAGE ENGAGEMENT OF HOUSEHOLDS (IN MONTHS) IN DIFFERENT NON-FARM ACTIVITIES

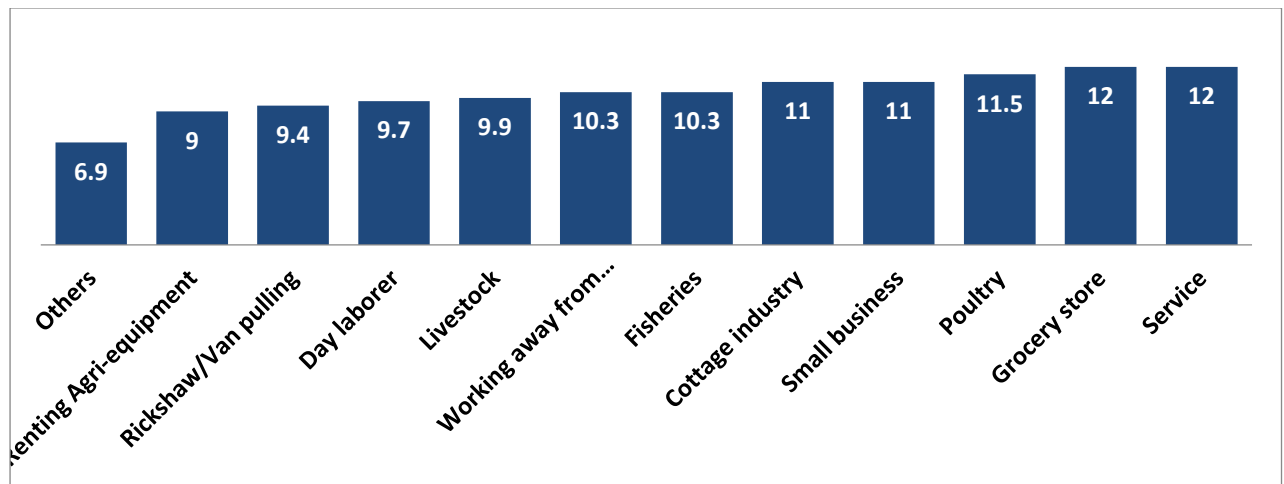
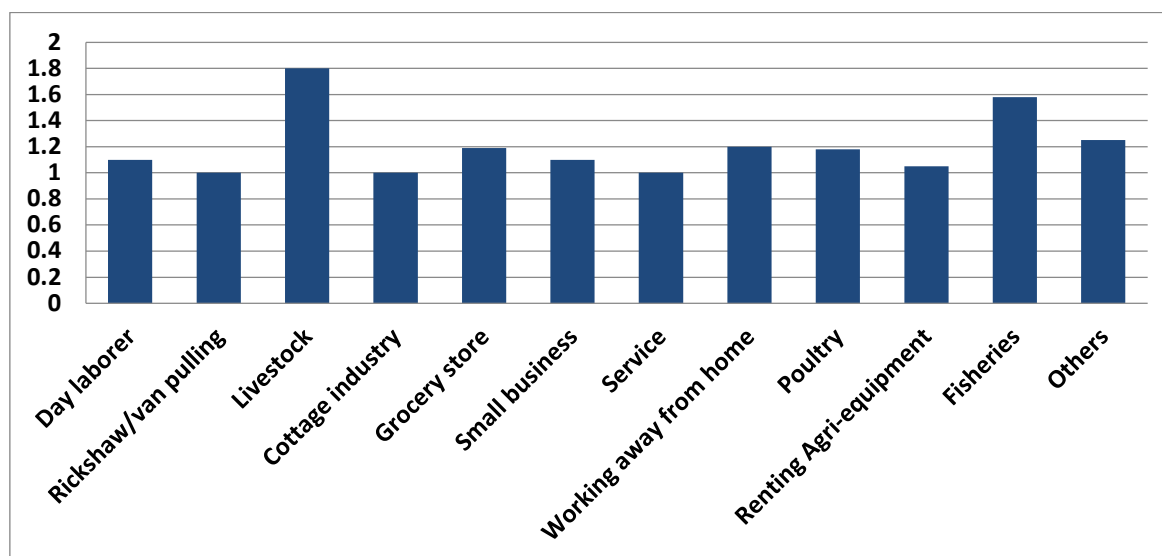


FIGURE 3.5: AVERAGE NO. OF HOUSEHOLD MEMBERS ENGAGED IN DIFFERENT NON-FARM ACTIVITIES



3.2 EXPENDITURE & CONSUMPTION PATTERN IN STUDIED FARMING COMMUNITIES

Studied farm households were found to have average monthly expenses of 9,936 BDT/Month. The Mango farmers were found to have the highest average monthly expenses of BDT 12,783 per month and the farmers from the regular value chains, i.e. potato, tomato, ground nut, summer vegetables, lentil and jute had the lowest average expenses of BDT 9,211 per month.

TABLE 3.2: EXPENDITURE PATTERN (FARM & NON-FARM COMBINED) OF THE STUDIED FARM HOUSEHOLDS

Value Chain	Minimum Expense (BDT/Month)	Maximum Expense (BDT/Month)	Average Expense (BDT/Month)
Regular Value Chain (n = 280)	1,200	40,000	9,211
Coir (n = 40)	4,500	20,000	9,838
Flower (n = 40)	1,000	30,000	12,263
Mango (n = 40)	2,500	30,000	12,783
Average of all farmers (n = 400)	1,000	40,000	9,936

Expenses of the farmers have been categorized into two groups in this study – **regular and irregular**. **Regular expenses** are those that the households have incurred consistently over the months in the last year, while **irregular expenses** were intermittent expenditures incurred. After analysis of the regular expenditure, it was found that food expense was common among all the studied farming households. As majority of the studied households were found to be living in self-owned homes, expenditure on house rent was not a regular expense among most of the households. However, some of the basic needs like Education and Health did not result in 100 percent occurrence, which indicates that all farming households do not have expenditure on these amenities. Surprisingly almost all the households studied were found to list mobile phone as a regular expense, which means this has become a necessity for the farming households under study.

TABLE 3.3: HOUSEHOLDS REGULAR EXPENDITURE PATTERN

Value Chains								
	Food	Education	Health	Entertainment	Housing	Mobile phone	Electricity, Fuel, etc.	Others
Regular Value Chain (n = 280)	100	77	92	46	22	96	78	10
Coir (n = 40)	100	80	90	80	0	100	100	80
Flower (n = 40)	100	67.5	75	70	10	100	100	80
Mango (n = 40)	100	72.5	82.5	72.5	0	95	70	95

Irregular expenditures were further classified into two categories – forced expenses and voluntary expenses. Forced expenses were irregular expenses for which the household did not have any preparation, did not have a willingness to pay and/or came as a sudden incidence. On the other hand, irregular expenses that the households willingly incurred, had preparation for, or foresaw were defined as voluntary expenses. The study revealed that for all types of farm households, treatment was the predominant category of forced expense in 2015. Around 21% of the regular value chain households and 82% of the special value chain households experienced this type of expense. Other significant irregular expense types were house building/repairing, marriage/dowry, education (mainly higher education), etc.

FIGURE 3.6: PERCENT OF HOUSEHOLDS INCURRING DIFFERENT FORCED EXPENSES

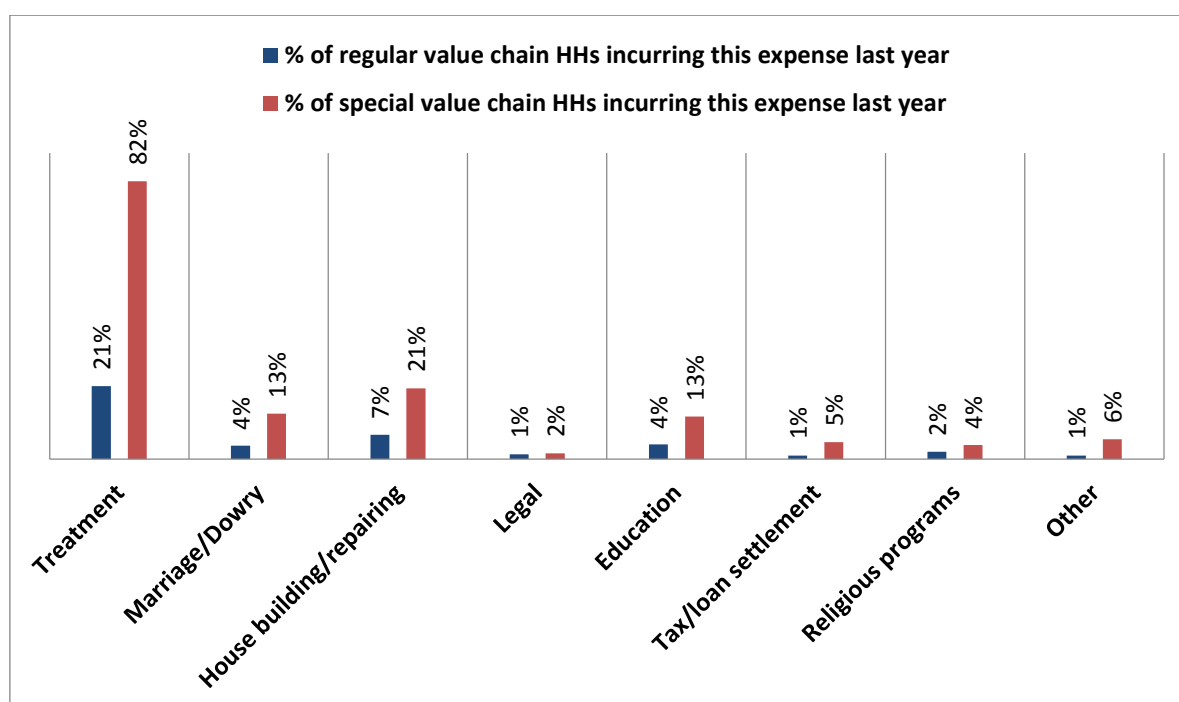
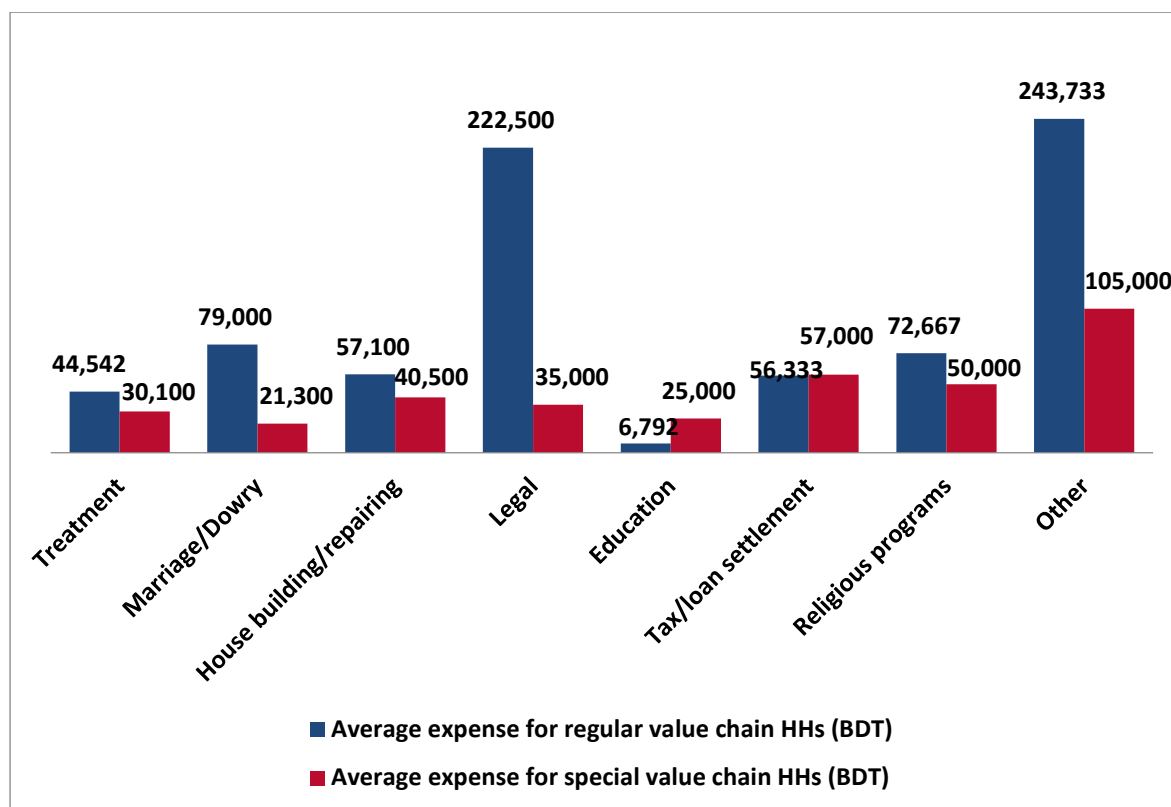
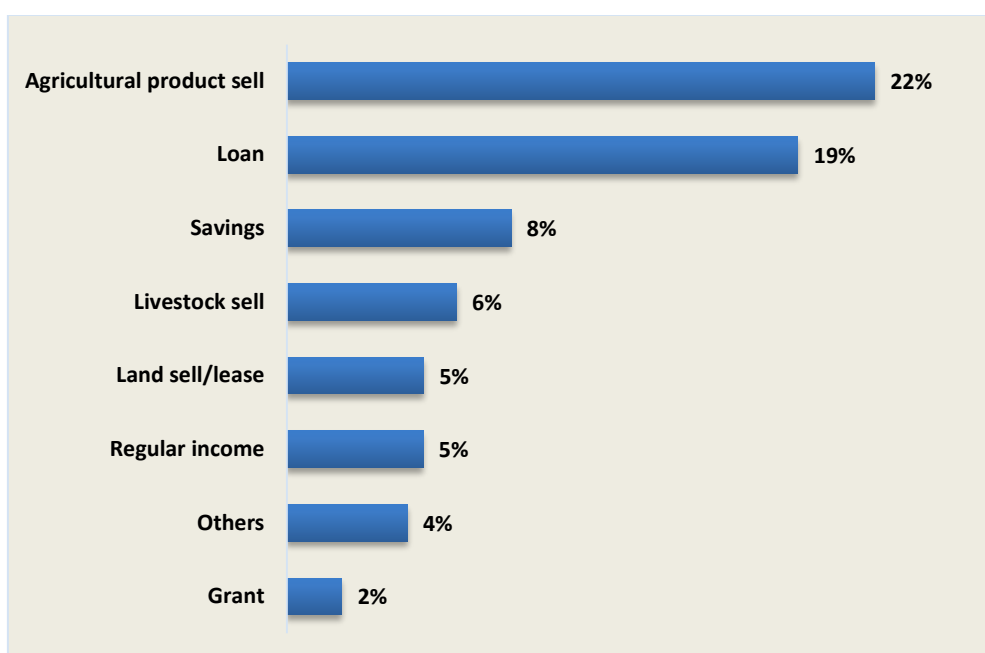


TABLE 3.7: AVERAGE ANNUAL EXPENSES (BDT/YEAR) FOR DIFFERENT TYPES OF FORCED EXPENSES



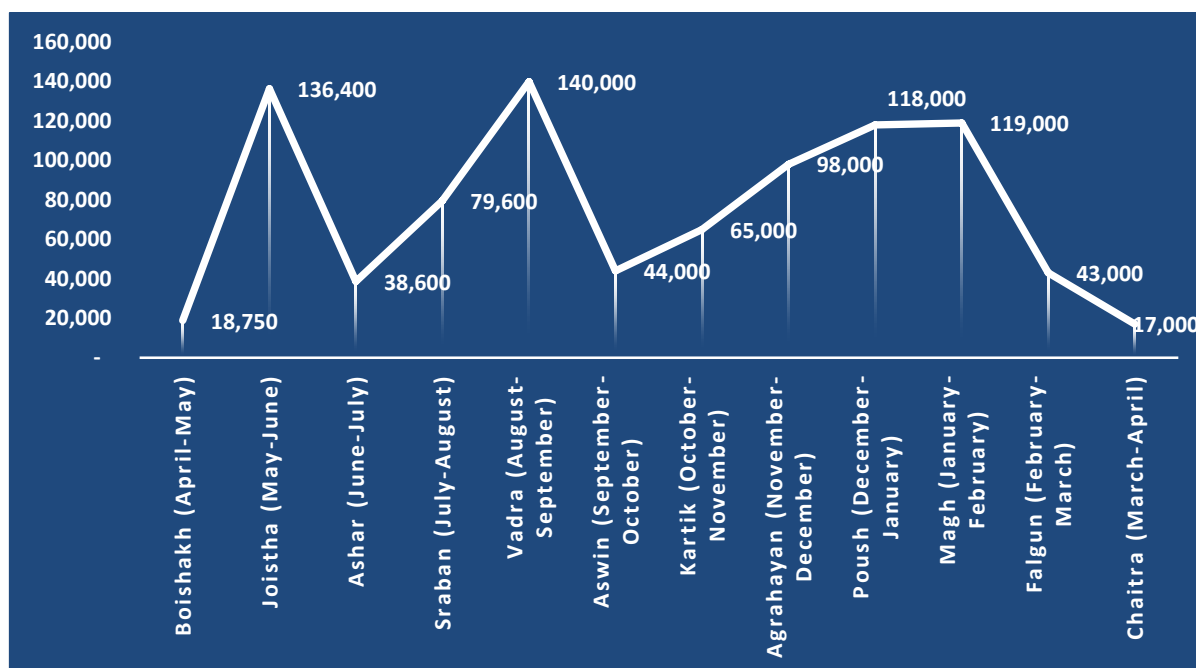
As mentioned before, the forced expenses were sudden, unforeseen and in most cases, the households did not have preparation. The study showed that most of the households either sold different agricultural products (which they did not have plans to sell at that time or did not have plans to sell at all) or took loans to mitigate the expenditure.

FIGURE 3.8: WAYS TO FUND FORCED EXPENDITURE FOR THE FARMERS (% OF STUDIED HOUSEHOLDS)



The study conducted a seasonality analysis for the requirement in forced expenses for the studied farm households. It was found that the average requirement is the least during mid-February to mid-May (*Chaitra* and *Boishakh* months of Bengali calendar). The requirement rises to a peaks in mid-May to mid-June (*Joistha* month of Bengali calendar), which falls drastically again in the next month. During mid-August to mid-September (*Vadra* month in Bengali calendar), the requirement was found to be the highest, which again drops in the next month. There seems to be a steady requirement of force expenditure during the winter, i.e. December to February, which again drops throughout spring.

FIGURE 3.9: SEASONALITY IN FORCED EXPENSE (BDT/HH/MONTH)



The second category of irregular expense is voluntary expenses for which farm households either had willingness to pay or had preparation/could foresee. A pattern of such expenditure in the studied households is shown in the table below.

FIGURE 3.10: PERCENT OF HOUSEHOLDS INCURRING DIFFERENT VOLUNTARY EXPENSES

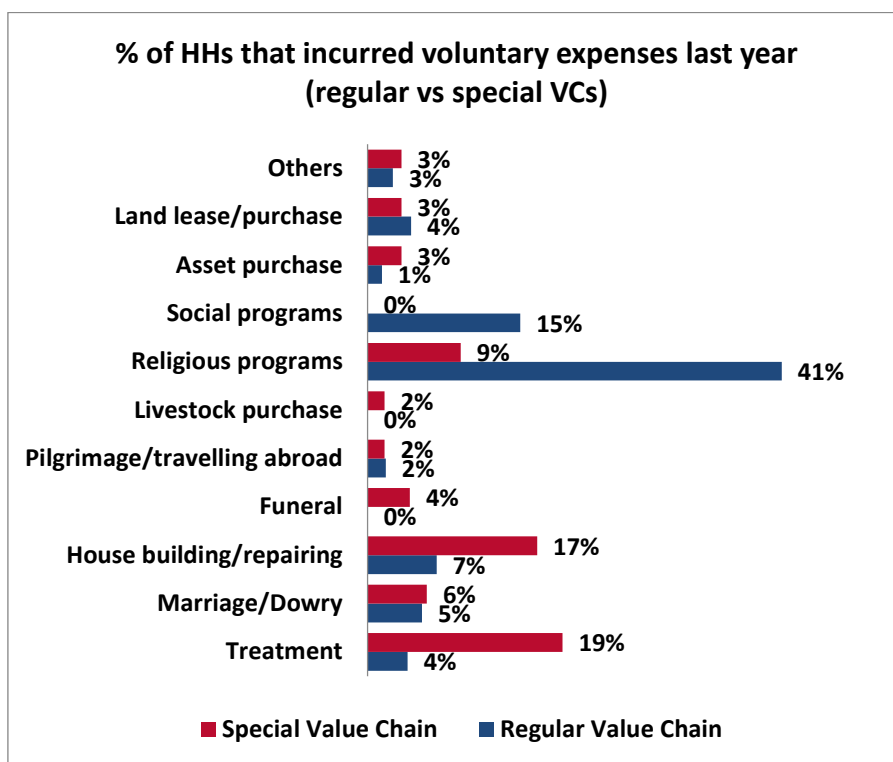


TABLE 3.11: AVERAGE ANNUAL EXPENSES (BDT/YEAR) FOR DIFFERENT TYPES OF VOLUNTARY EXPENSES

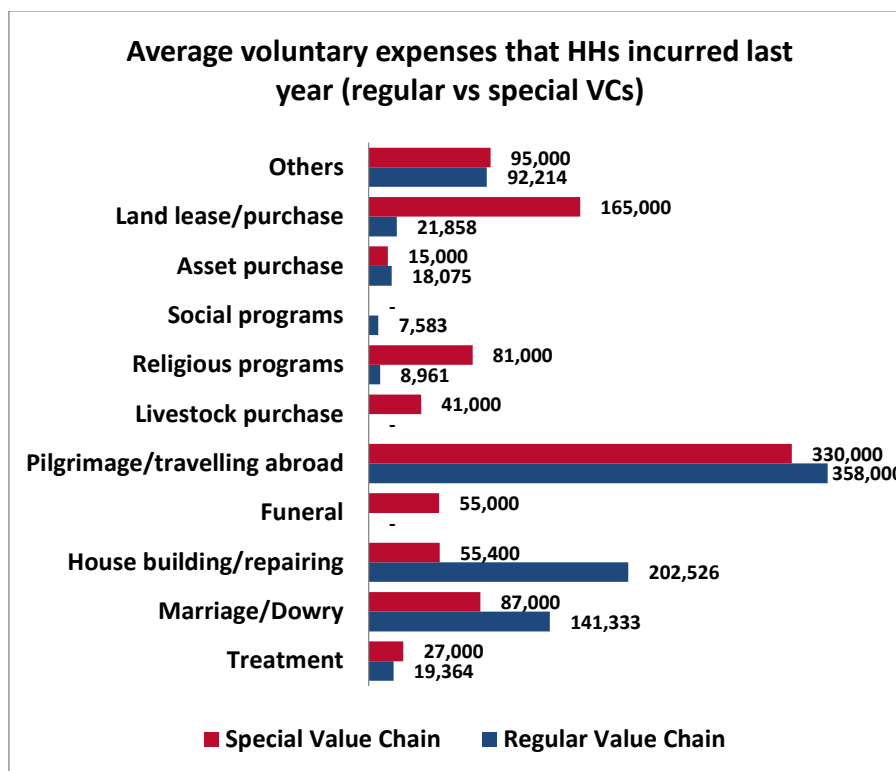


Figure 3.12 below shows the ways in which farm households mitigate voluntary expenses. It is quite clear that majority of the households incur the cost from their regular income, which is an indication that these expenses were foreseen by the households and they had preparation.

FIGURE 3.12: WAYS IN WHICH FARM HOUSEHOLDS FUND VOLUNTARY EXPENSES

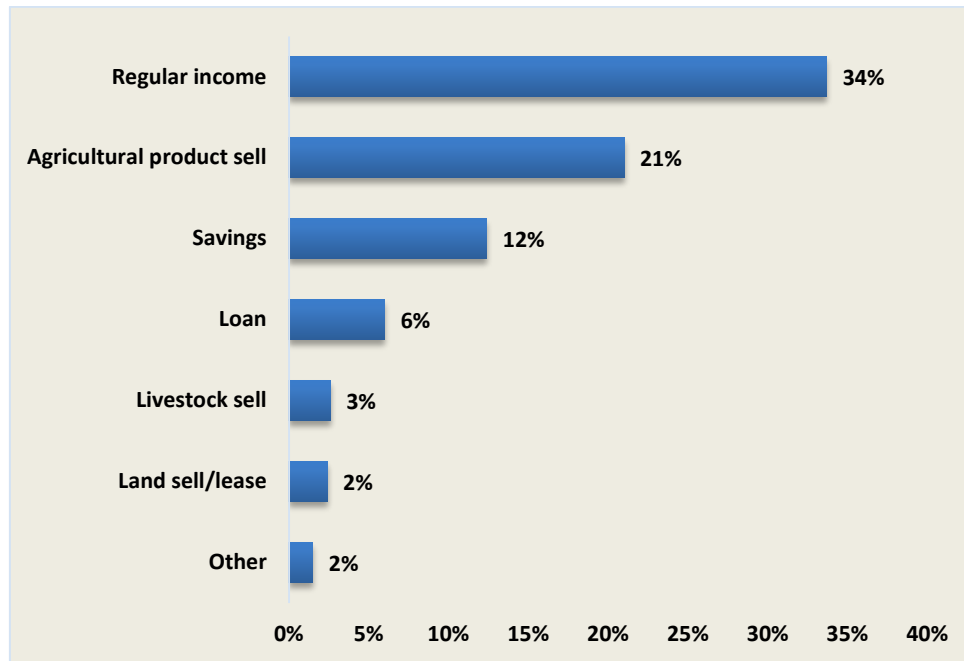
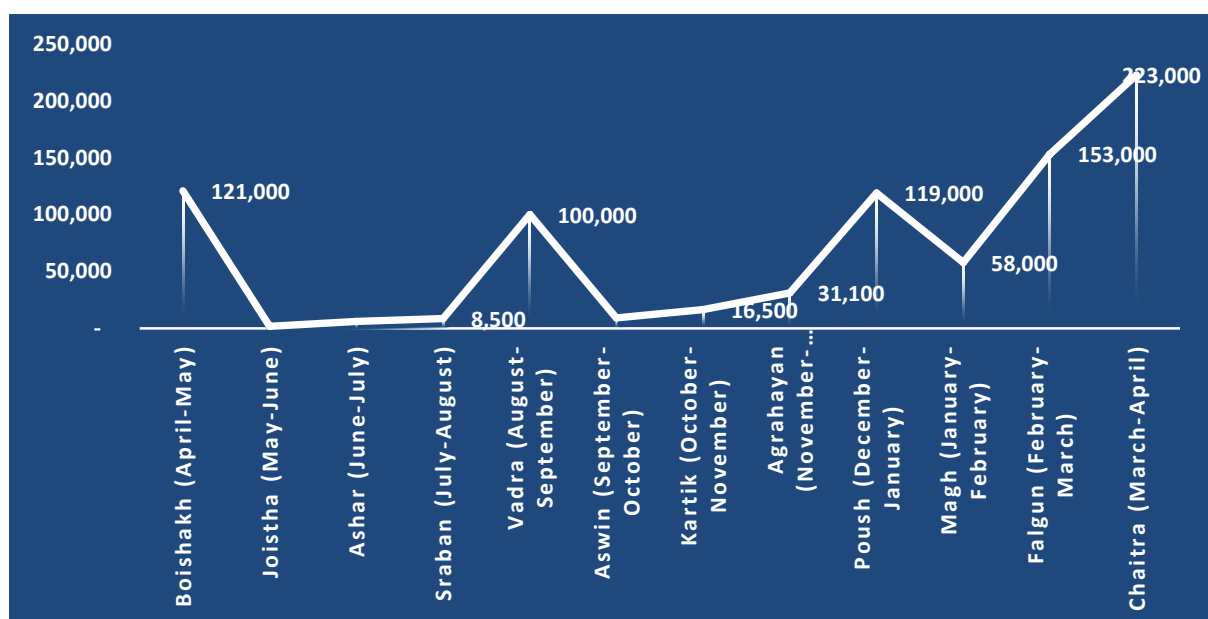


Figure 3.13 shows the seasonal trend in voluntary expenses of the farm household. Comparing this trend with forced expenses, a completely different scenario can be seen. It was found that the farm households have more voluntary expenditure during spring (mid-February to mid-April), early summer (mid-April to mid-May) and mid-winter (mid-December to mid-January), and less in later part of summer, the whole rainy season and early winter. Further analyzing these two categories of irregular expenses we can conclude that irregular expenses are quite common throughout the year; however, while some of these expenses are foreseeable to the farm households and can be prepared for others are not.

FIGURE 3.13: SEASONALITY IN VOLUNTARY EXPENSES



3.3 SAVINGS OF THE FARMING COMMUNITIES

The study asked for information regarding savings of the farm households. Sixty-eight percent of the studied households were found have some savings in their respective households. Considering the value chains, it was identified that slightly more of the special value chain households (i.e. coir, mango and flower) have savings than the regular value chain households (i.e. ground nut, potato, tomato, lentil, summer vegetables and jute).

FIGURE 3.14: PERCENT OF SURVEYED HOUSEHOLDS THAT ARE ABLE TO SAVE FROM THEIR INCOME

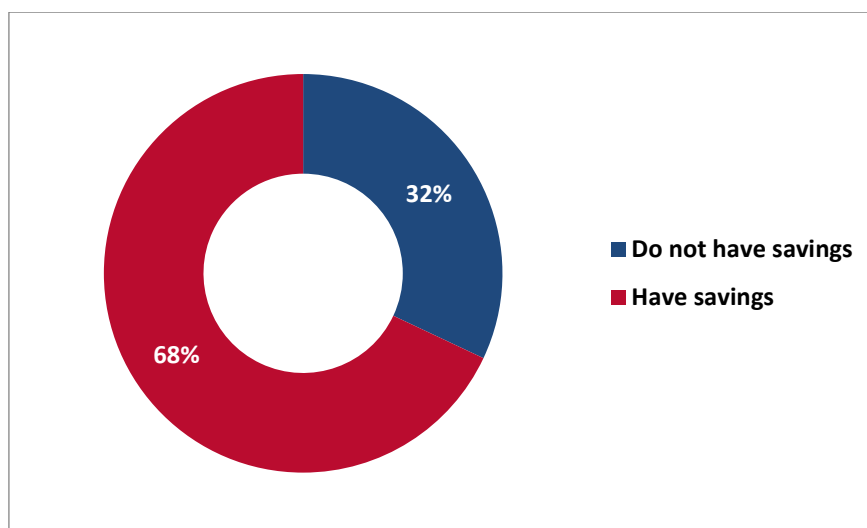
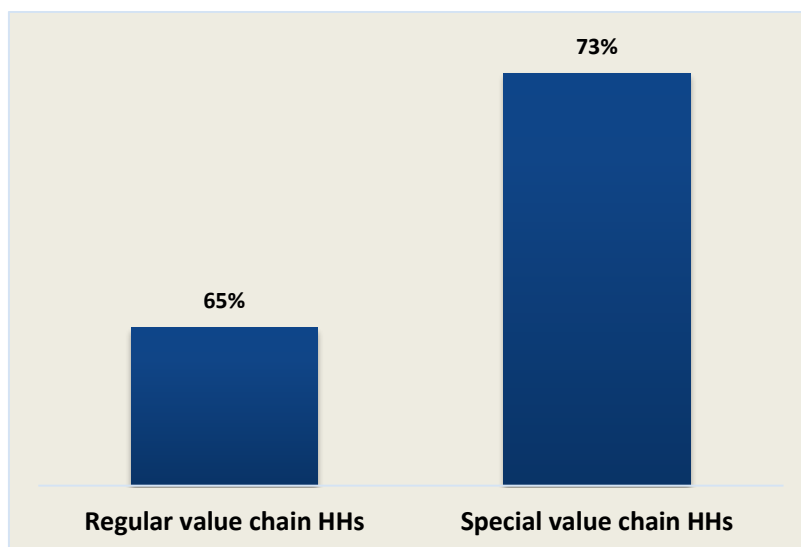
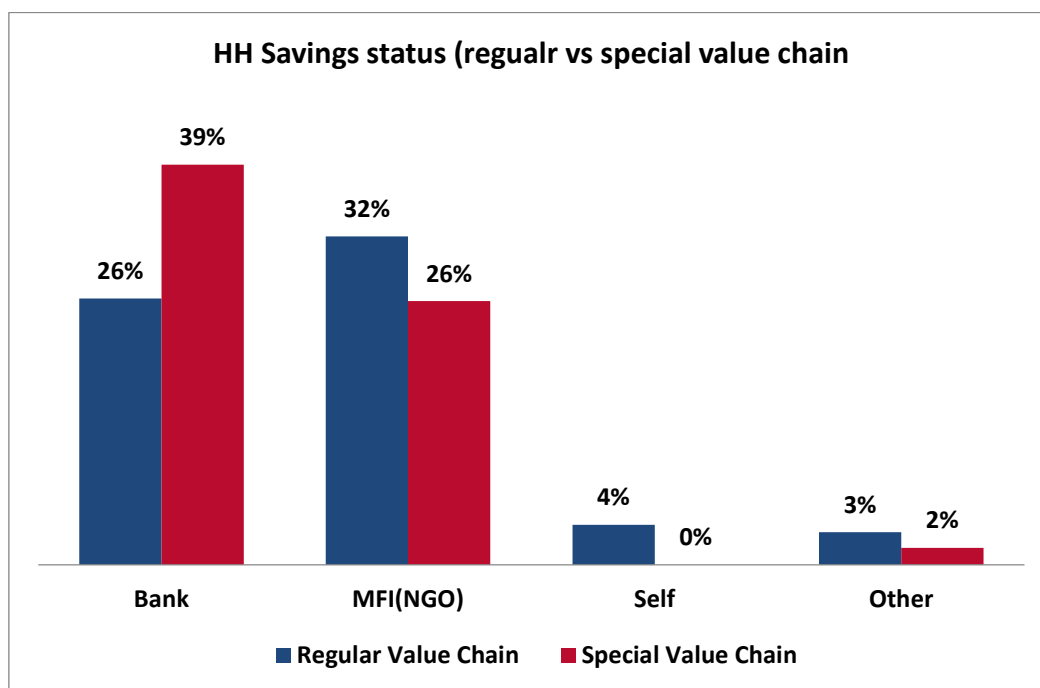


FIGURE 3.15: PERCENT OF REGULAR VALUE CHAIN HOUSEHOLDS (LEFT) AND THAT OF SPECIAL VALUE CHAIN HOUSEHOLDS (RIGHT) HAVING SAVINGS



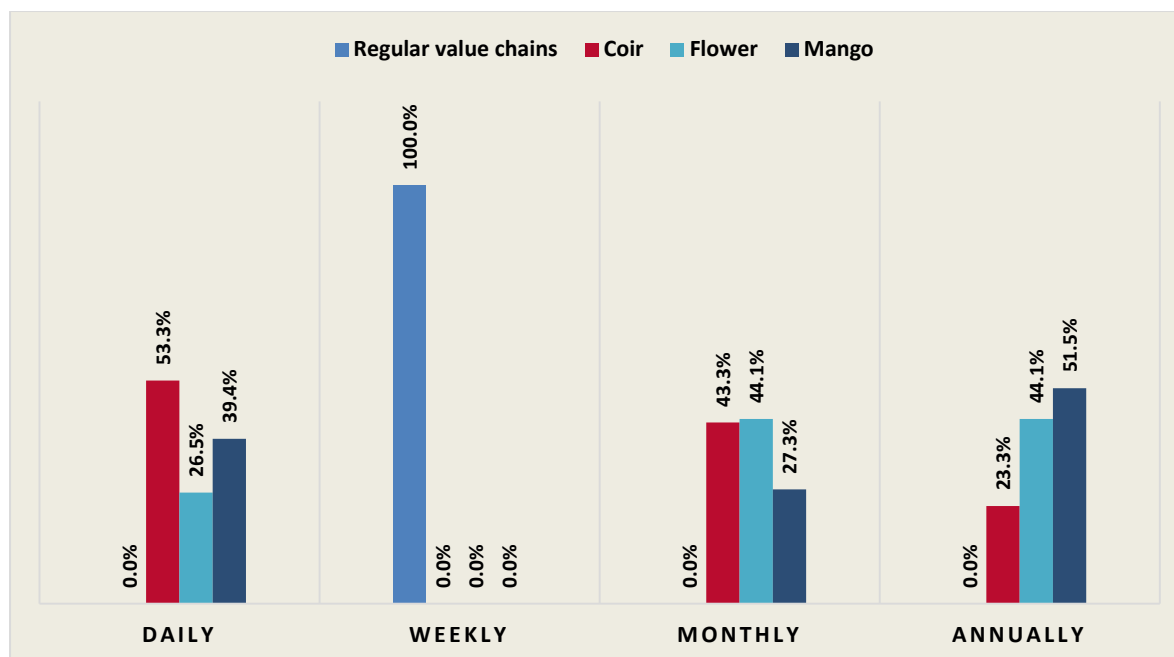
Most of the households under this survey mentioned that they maintain savings with different NGOs. Another significant portion of the farm households save with different banks.

FIGURE 3.16: PLACES WHERE FARM HOUSEHOLDS RETAIN THEIR SAVINGS (ONLY THOSE ABLE TO SAVE SHOWN AS % OF TOTAL)



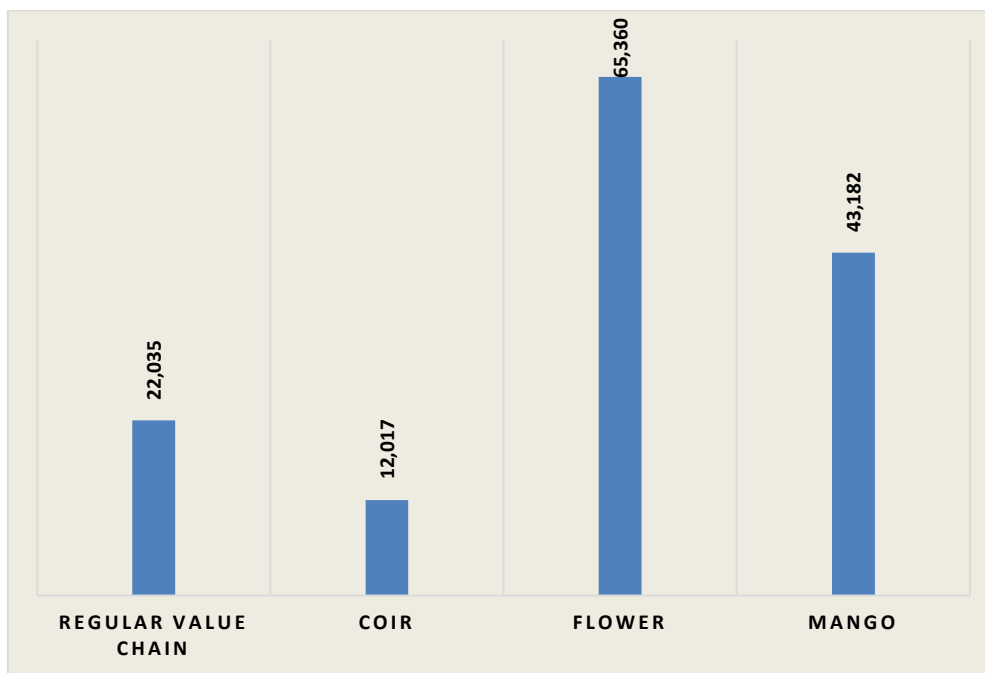
There were significant differences found in saving frequencies between farming households from different value chains. Those who have savings in the regular value chain households prefer to save weekly. On the other hand, coir farmers like to save daily or monthly. Flower farmers mostly prefer to save on a monthly or annual basis, and around half the mango farmers save on annual basis.

TABLE 3.5: SAVINGS FREQUENCY OF FARM HOUSEHOLDS (% OF THOSE HAVING SAVINGS)



Significant differences were observed in terms of the savings amounts of farm households from different value chains. Flower and Mango value chain households have a high savings rate in comparison to others.

FIGURE 3.17: AVERAGE SAVINGS OF HOUSEHOLDS FROM DIFFERENT VALUE CHAINS (BDT/YEAR)



CHAPTER 4: FINANCIAL MANAGEMENT PRACTICES IN FARMING COMMUNITIES

Analysis of financial management practices among the surveyed farming households have revealed most of the transactions of these households with other actors in the value chain to be on a seasonal basis. Regular value chain farmers tend to transact directly with end consumers, while their high-value crop counterparts conduct transactions through intermediaries. The majority of the regular value chain farmers get paid in cash when they sell their produce, while almost two-thirds of the high-value crop farmers do not get paid fully when selling their produce. Over half of the responding farmers have reported taking loans, mainly from micro finance service providers and commercial banks. Over 44 percent of these farmers are not satisfied with the credit service currently available to them. Significant portions of farmers from both types of value chains have expressed interest in using mobile phone based financial services to sell or buy goods.

4.1 TRANSACTION PRACTICES IN FARMING COMMUNITIES

4.1.1 TRANSACTION RELATIONSHIP

Figure 4.1 below shows the transaction relationship between farm households and different market actors. The percentage of households engaging in transactions with land owners is less for the special value chain households since the majority of these farmers cultivate on their own land only. A high percentage of households for all surveyed value chains were found to be in transaction relationships with input retailers. Relationships with block supervisors and different NGOs for advisory and technical assistance were found; however, in many cases the farmers pay fees against this technical assistance. More regular value chain farm households have transaction relationships with block supervisors and NGOs. Day laborers are required for almost all types of farms and a high percentage of farm households have transaction relationships with them. Special value chains are cash crops and more likely to be sold to intermediaries than to end consumers. As a result, a higher percentage of special value chain farm households have transaction relationships with large wholesalers, *Aratdars* and *Farias*. On the other hand, around 30 percent of the regular value chain farm households sell product at farm gates and the rest of them take the product to the nearest bazaar/hut where they mainly sell the product directly to end consumers. A small percentage of these households sell products to *Aratdars* and large wholesalers.

The average annual transactions between farming households is shown in Figure 4.2. This figure shows that the largest transactions take place between the farming households and large wholesalers. An important note about this figure is that not all households transact with large wholesalers (1 percent of regular value chain farmers and 68 percent of special value chain farmers) and this figure shows average transactions for *only* those households that transact with large wholesalers. Average transactions between large wholesalers and special value chain farmers are higher compared to general value chain farmers. This is most likely because special value chain crops are high-value crops.

Average transactions with other actors also appear to be significantly high for some farmers. Only 1 percent of the regular value chain farmers have transaction relationships with other actors. Other actors here refer to sellers of expensive agricultural equipment (e.g. irrigation machine, tractor) and buyers purchasing land from farmers. Hence, the average annual transactions figures for 'other actors' in Figure 4.2 are larger, as each transaction is high value.

FIGURE 4.1: TRANSACTION RELATIONSHIP OF FARM HOUSEHOLDS WITH DIFFERENT MARKET ACTORS (PERCENTAGE OF HOUSEHOLDS HAVING TRANSACTION RELATIONSHIPS WITH DIFFERENT ACTORS)

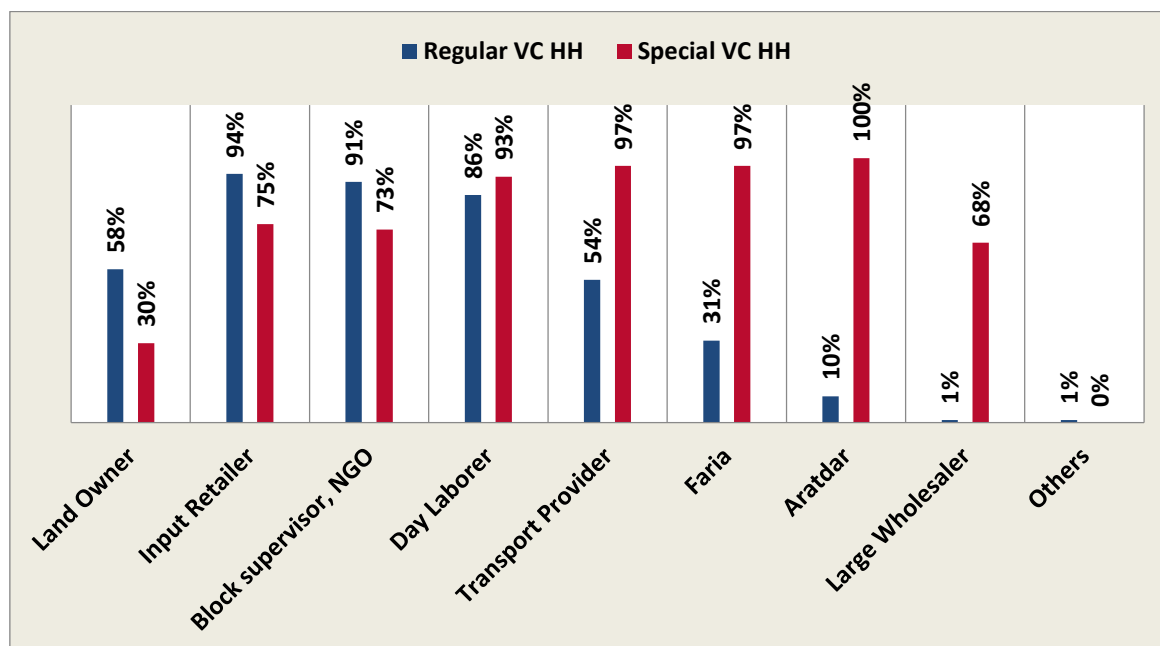
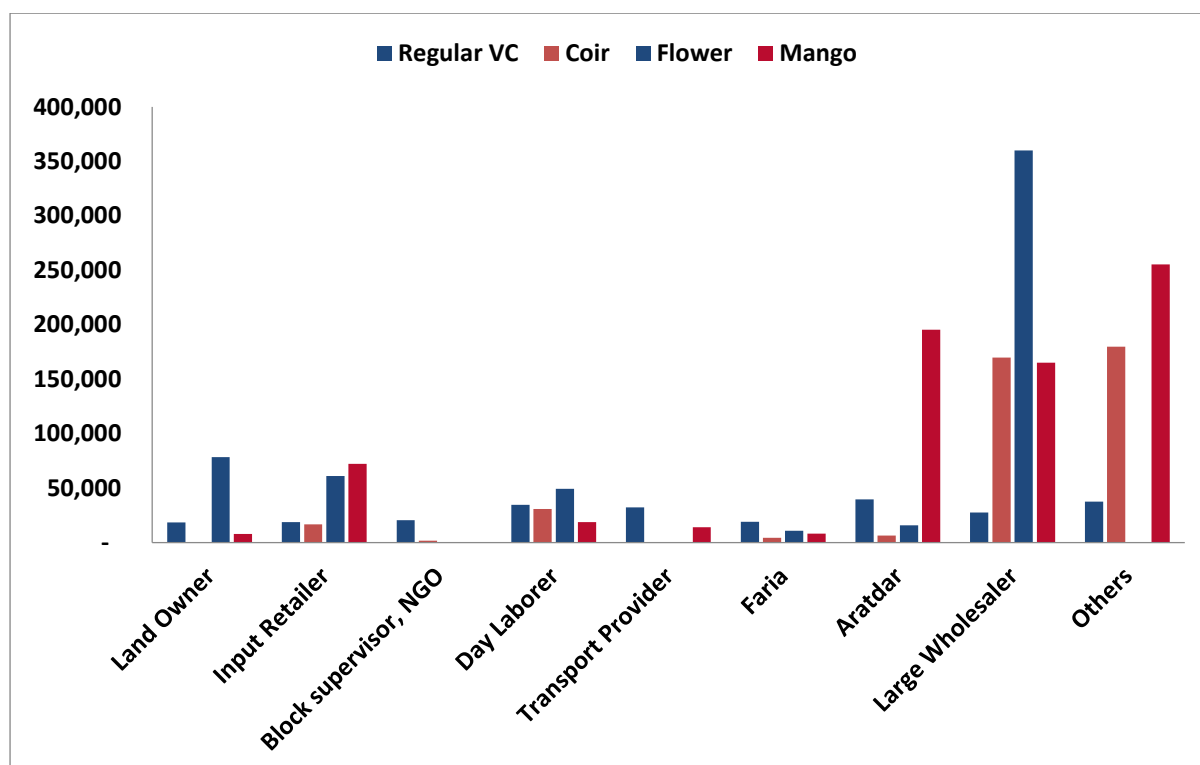


FIGURE 4.2: AVERAGE ANNUAL TRANSACTION (BDT) WITH DIFFERENT ACTORS (AVERAGES ARE NOT FOR ALL HOUSEHOLDS, RATHER ONLY THE HOUSEHOLD THAT TRANSACT WITH A PARTICULAR ACTOR ARE CONSIDERED WHEN DOING THE AVERAGE)



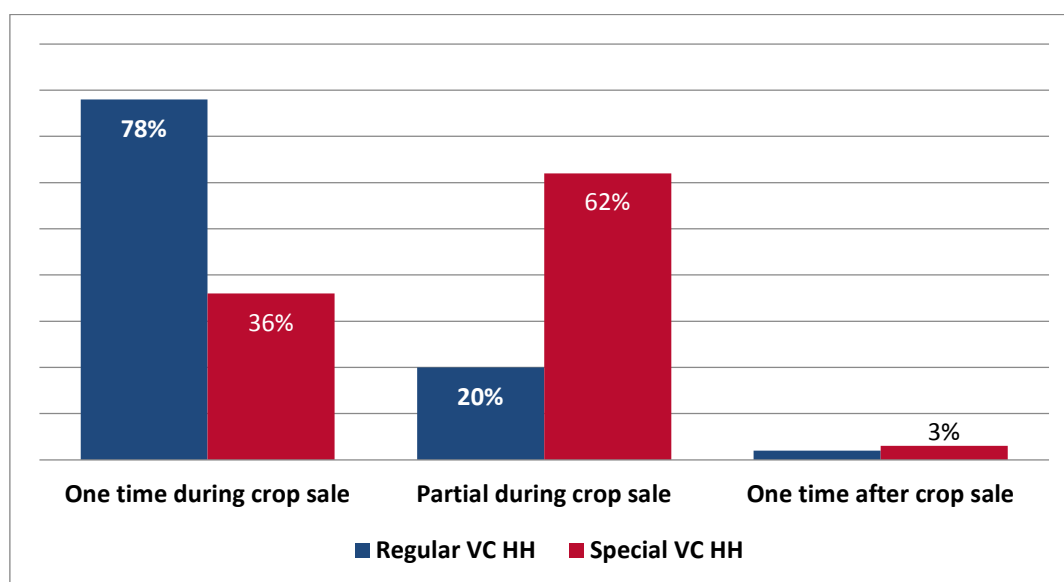
The transaction frequencies of the farmers were classified into the following categories: daily, weekly, monthly, seasonal, and irregular. It can be seen from the table below that in the majority of cases, the transactions are seasonal, i.e. done at the beginning or end of the season for the respective crop.

TABLE 4.1: TRANSACTION FREQUENCY OF FARM HOUSEHOLDS (FIGURES REFER TO PERCENT OF HOUSEHOLDS TRANSACTING IN A RESPECTIVE FREQUENCY)

Actors	Transaction Frequency (for Percent of Studied Households)					
	Daily	Weekly	Monthly	Seasonal	Irregular	Do not Transact
Land Owner	0%	2%	1%	58%	9%	30%
Input Retailer	4%	3%	2%	70%	12%	9%
Block Supervisor, NGO	10%	2%	1%	61%	13%	13%
Day Laborer	9%	1%	1%	53%	21%	15%
Transport Provider	7%	1%	2%	38%	12%	40%
Faria	5%	2%	1%	65%	3%	24%
Bepari	1%	0%	2%	34%	2%	61%
Aratdar	2%	1%	1%	10%	1%	85%
Large Wholesaler	0%	0%	1%	2%	1%	96%
Others	0%	0%	0%	2%	2%	97%

The majority of households in regular value chains receive the price in full at the point of sale. In cases where farmers are not receiving cash for crop sales, on average 11.7 days are required to get the full payment.

FIGURE 4.3: TIME OF RECEIVING PAYMENT AFTER SELLING CROP



4.1.2 INFLUENCE IN TRANSACTION DECISIONS OF FARMING HOUSEHOLDS

We wanted to see the influence of different persons in household transaction decisions within farm households. We found that persons outside households do not have influence on transactions of the

respective households. Among the household members, the household head has the highest influence among all types of transaction decisions.

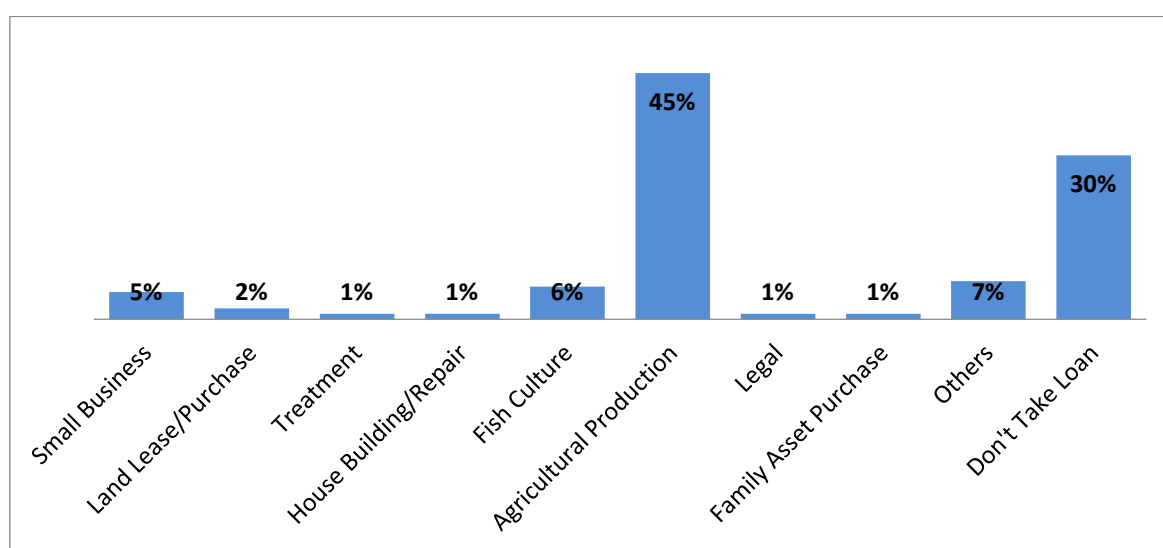
TABLE 4.3: INFLUENCE OF HOUSEHOLD MEMBERS IN DIFFERENT TYPES OF TRANSACTION RELATED DECISIONS (FIGURES REFER TO PERCENT OF HOUSEHOLD MEMBERS ENJOYING A CERTAIN LEVEL (HIGH, MEDIUM OR LOW) OF INFLUENCE IN HOUSEHOLD TRANSACTION RELATED DECISION MAKING)

Decision Areas	HH Head			Other Male Members			Other Female Members		
	High	Mid	Low	High	Mid	Low	High	Mid	Low
Agricultural related	98%	2%	0%	14%	59%	27%	2%	31%	67%
Other IGA related	65%	26%	9%	20%	40%	40%	38%	28%	34%
General/Regular Expenses	97%	3%	1%	14%	53%	33%	4%	53%	43%
Forced Expenses (Irregular)	94%	5%	1%	30%	32%	38%	9%	45%	46%
Voluntary Expenses (Irregular)	82%	17%	1%	22%	40%	38%	18%	58%	24%
Savings	63%	27%	10%	17%	35%	48%	39%	32%	29%
Loan	68%	22%	9%	16%	31%	54%	35%	34%	31%

4.2 CREDIT SITUATION IN FARMING HOUSEHOLDS

Around 70 percent of households were found to be taking loans for various reasons. The majority of the households took loans for agricultural production.

FIGURE 4.4: PERCENT OF FARM HOUSEHOLDS TAKING LOANS FOR DIFFERENT REASONS



The table below shows the different sources from which farm households take loans. Around 75 percent of the regular value chain households and more than half of the special value chain households took loans from Microfinance Institutes (MFIs). Twenty percent and 24 percent of the regular and special value chain households respectively take out bank loans. Interestingly, 8 percent of the special value chain households were found to be taking loans from informal money lenders (also known as *Mahajon*), which was not found to be common among the regular value chain households.

FIGURE 4.5: PERCENT OF HOUSEHOLDS TAKING LOANS

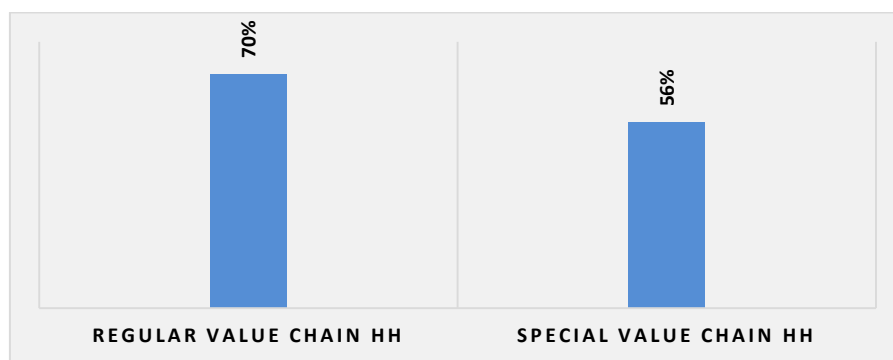


FIGURE 4.6: PERCENT OF HOUSEHOLDS TAKING LOAN FROM DIFFERENT SOURCES (ONLY THOSE TAKING LOANS HAVE BEEN CONSIDERED AND ONE HOUSEHOLD MAY BORROW FROM MULTIPLE SOURCES)

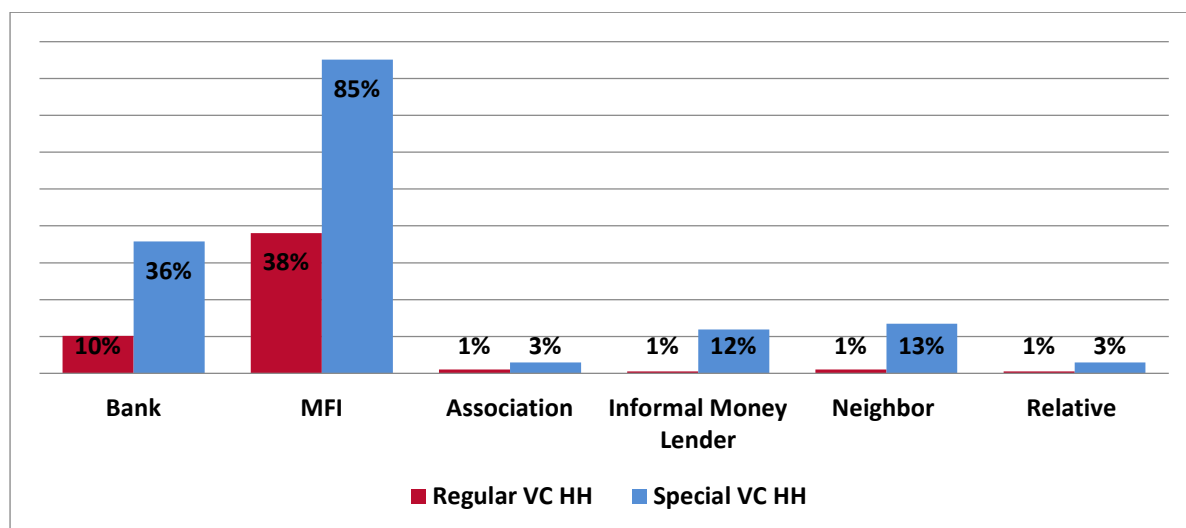
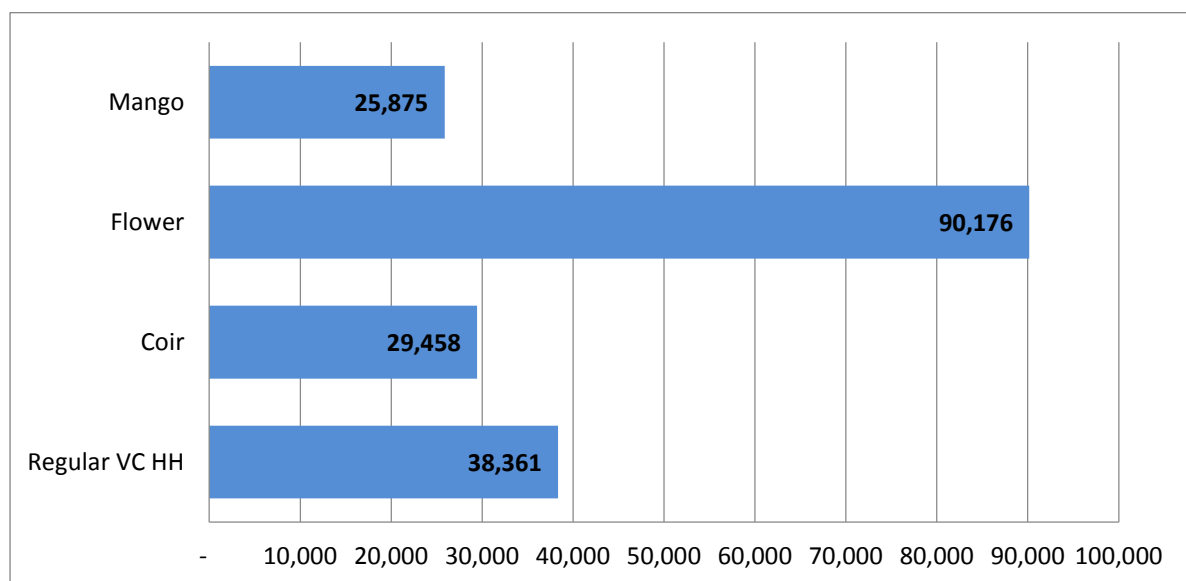
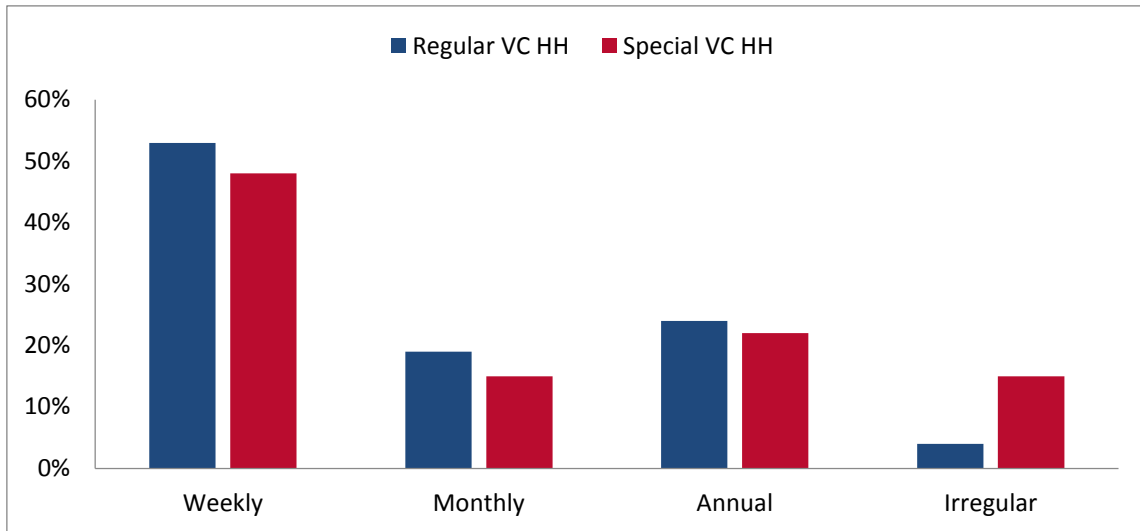


FIGURE 4.7: AVERAGE LOAN AMOUNT FOR DIFFERENT FARM HOUSEHOLDS



There was a difference seen in the average loan amount for the farm households (shown in Figure 4.7). Households involved in flower production were found to have the highest average loan size of BDT 90,176. Regular value chain households were also found to have a large average loan size, of BDT 38,361. The majority of the households from both regular and special value chains repay the loans on weekly basis.

FIGURE 4.8: REPAYMENT FREQUENCY FOR DIFFERENT HOUSEHOLDS (PERCENTAGE OF HOUSEHOLDS, CONSIDERING ONLY THOSE HAVING LOAN)



There were differences in interest rates among different households. The majority of regular value chain households have interest rates ranging between 12.01% and 15%. In the case of special value chain households, interest rates are lower and vary from 10.01% to 12%.

FIGURE 4.9: INTEREST RATE OF LOANS TAKEN BY REGULAR VALUE CHAIN HOUSEHOLDS

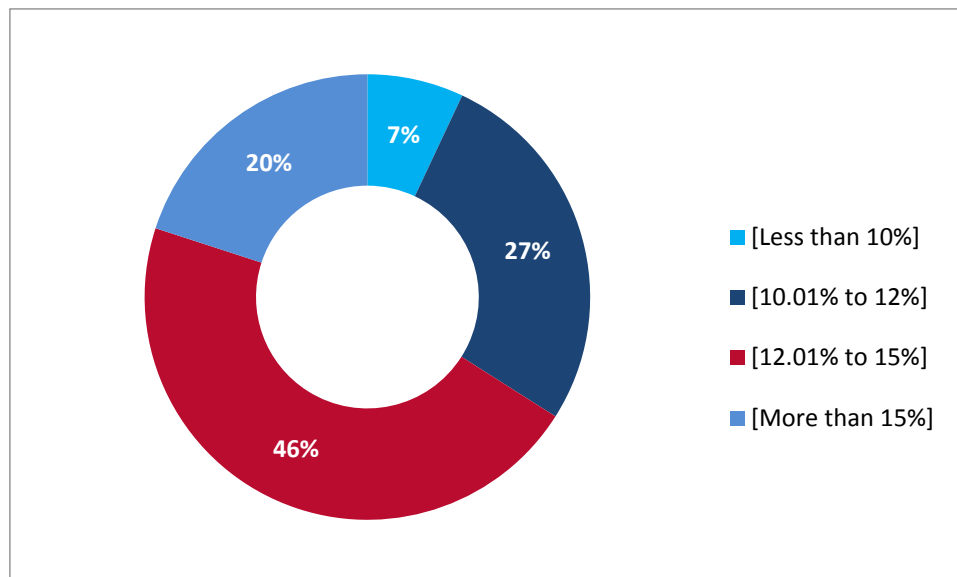
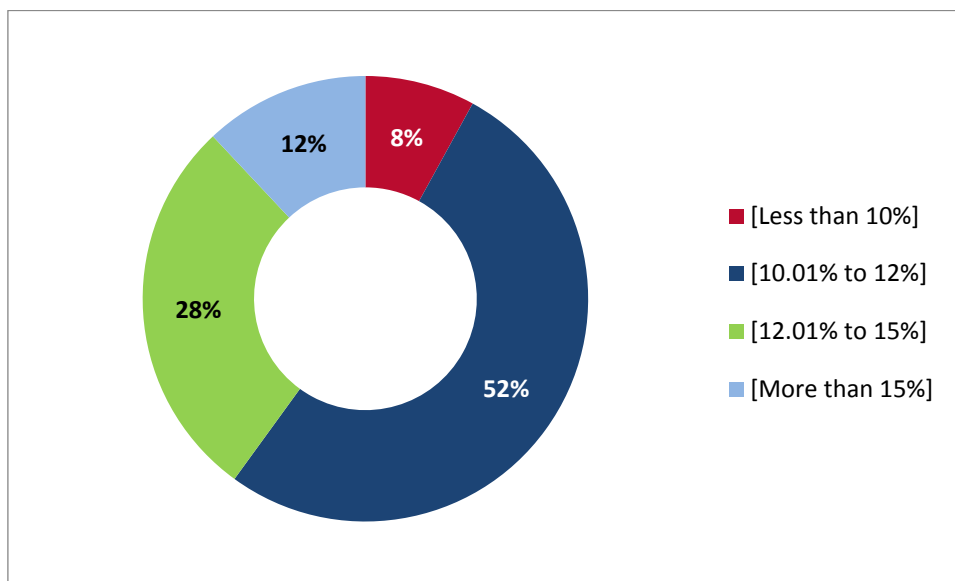
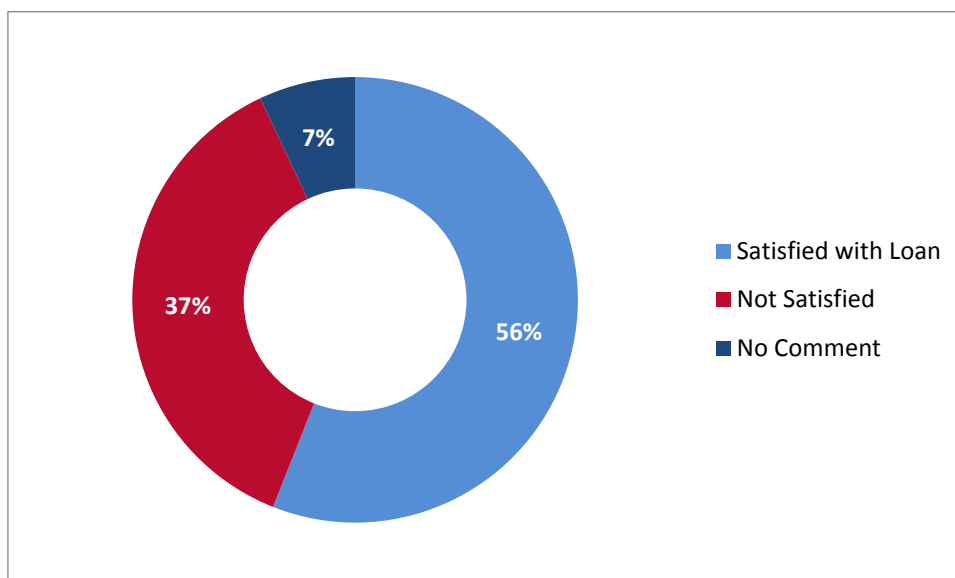


FIGURE 4.10: INTEREST RATE OF LOANS TAKEN BY SPECIAL VALUE CHAIN HOUSEHOLDS



Over half of the households taking loan expressed that they were satisfied with the terms and conditions of the loan, including the interest rate and repayment modality, while approximately one third of them reported of dissatisfaction with loan conditions.

FIGURE 4.11: SATISFACTION OF THE FARM HOUSEHOLDS REGARDING LOAN (CONSIDERING HOUSEHOLDS THAT TOOK LOAN)



4.3 ACCESS AND USAGE OF FINANCING SERVICES

Eighty-three percent of special value chain households and 71 percent of regular value chain households have accounts with at least one financial service provider. In the case of regular value chain households, 36% and 34% of the households have accounts in Microfinance Institutes (MFI) and Banks respectively.

FIGURE 4.12: PERCENTAGE OF STUDIED HOUSEHOLDS HAVING ACCOUNTS WITH A FINANCIAL SERVICE PROVIDER

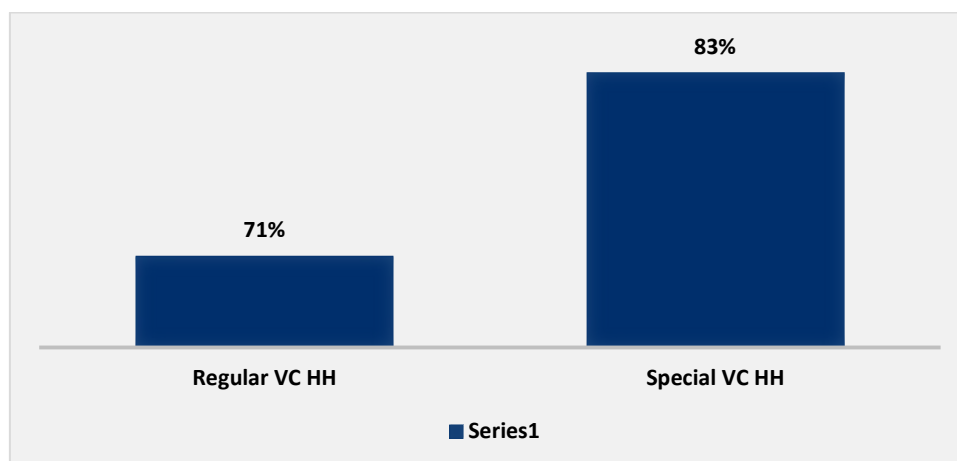
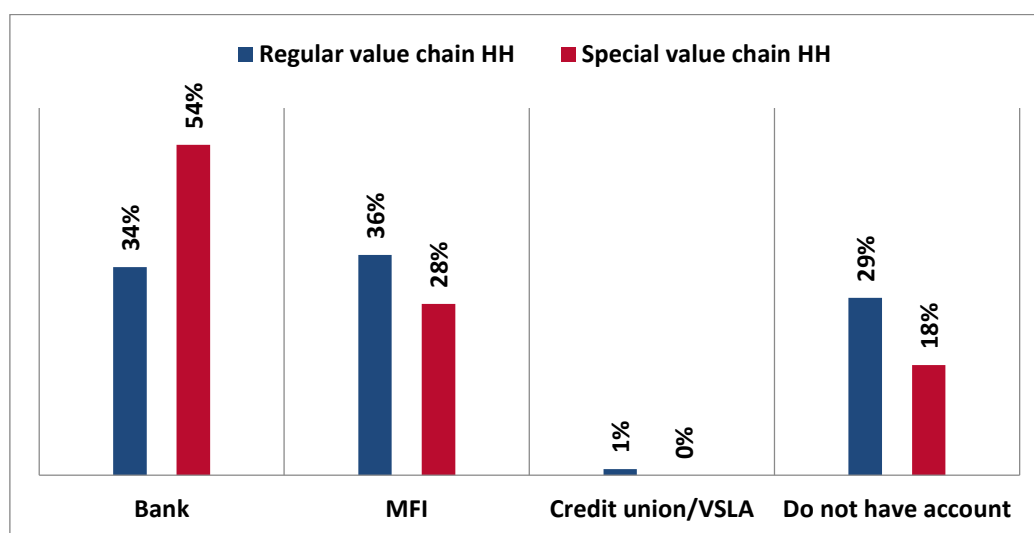


FIGURE 4.13: PERCENT OF HOUSEHOLDS HAVING ACCOUNT WITH DIFFERENT FINANCIAL SERVICE PROVIDERS (ONLY THOSE HAVING ACCOUNTS WITH FINANCIAL SERVICE PROVIDER ARE CONSIDERED)



More than half of the regular value chain households have accounts with a financial service provider to incur personal or household needs. Eighty-four percent of those with an account had transactions in their accounts within the previous six months.

FIGURE 4.14: REASONS FOR HAVING AN ACCOUNT (CONSIDERING ONLY THOSE HAVING AN ACCOUNT IN A FINANCIAL SERVICE PROVIDER)

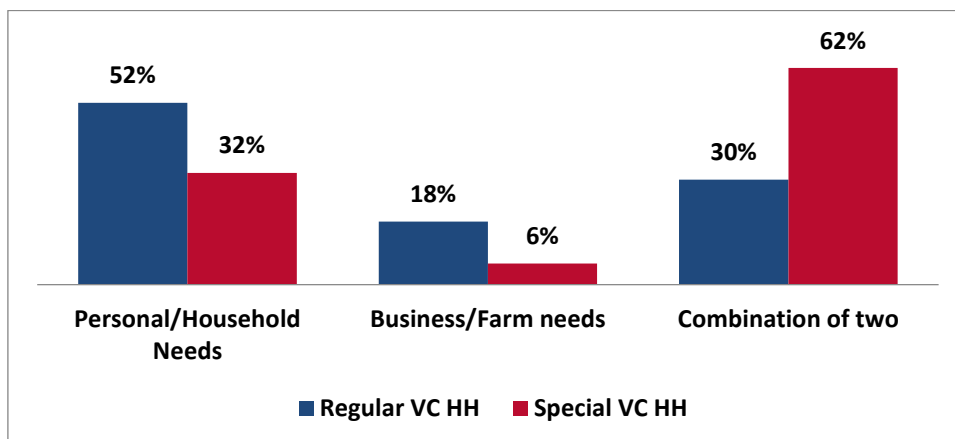
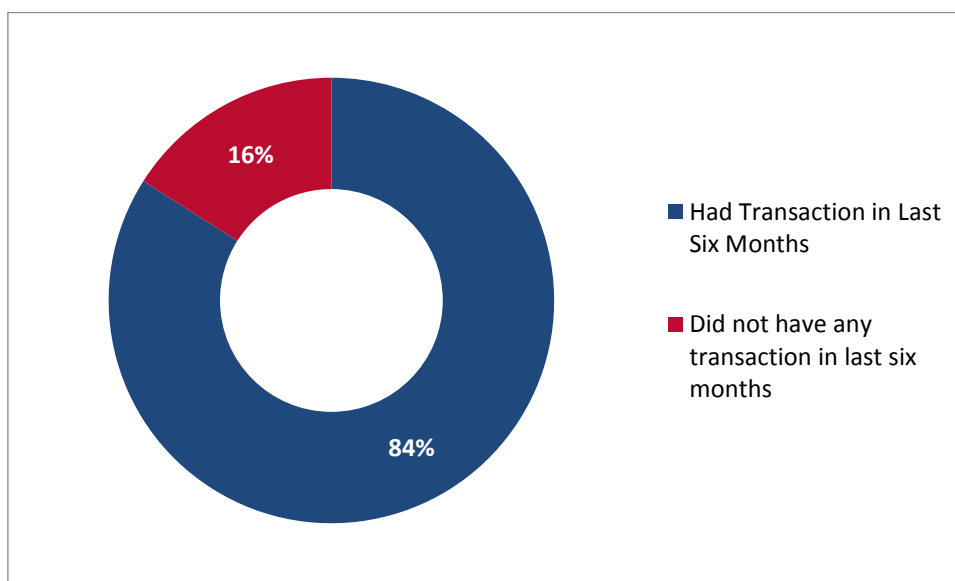
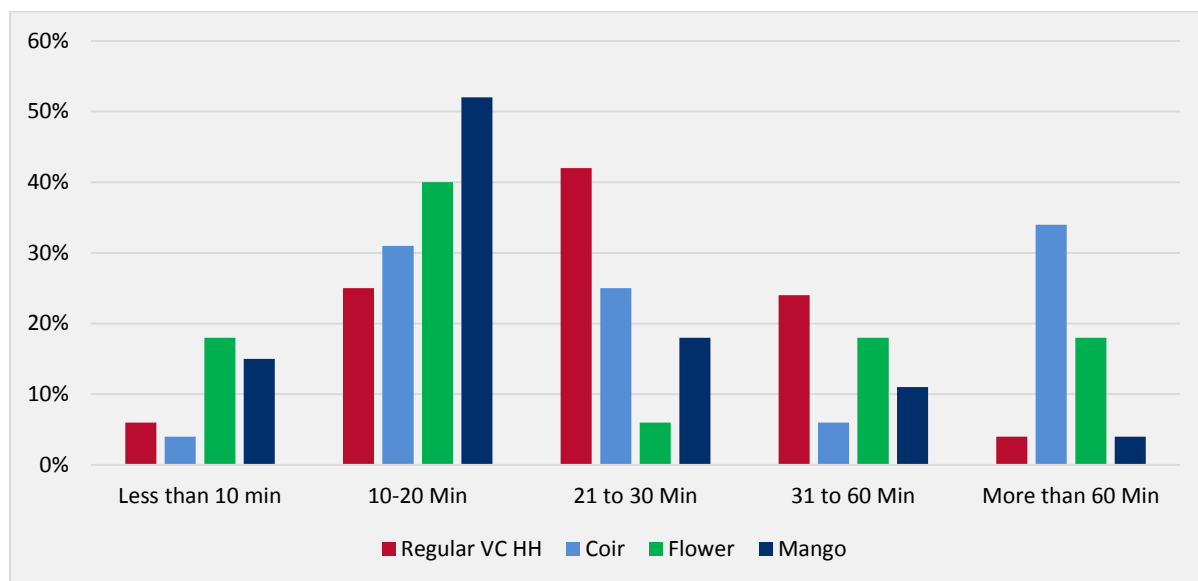


FIGURE 4.15: PERCENT OF HOUSEHOLDS HAVING TRANSACTIONS IN RESPECTIVE ACCOUNTS (CONSIDERING ONLY THOSE HAVING ACCOUNT WITH FINANCIAL SERVICE PROVIDERS)



The majority of households in regular value chains were found to be a 21 to 30 minute distance from the nearest financial service provider’s branch. In the case of coir farmers, 34% live more than 60 minutes and 31% live a 10 to 20 minute distance. Among flower farmers, the majority live a 10-20 minute distance. More than half of the mango farmers were found to be living a 10-20 minute distance from the nearest branch of a financial service provider.

FIGURE 4.16: AVERAGE TIME REQUIRED FOR STUDIED HOUSEHOLDS TO VISIT NEAREST FINANCIAL SERVICE PROVIDER WITH WHICH THEY MAINTAIN AN ACCOUNT



Farm households demonstrated a basic knowledge of Mobile Financing Services (MFS), evident from 54% and 65% of the regular and special value chain households respectively having used MFS, although owning such accounts is not common. The majority of regular value chain households that do have accounts that own these MFS accounts for more than 12 months.

FIGURE 4.17: PERCENT OF HOUSEHOLDS USING MFS AND OWNING AN ACCOUNT

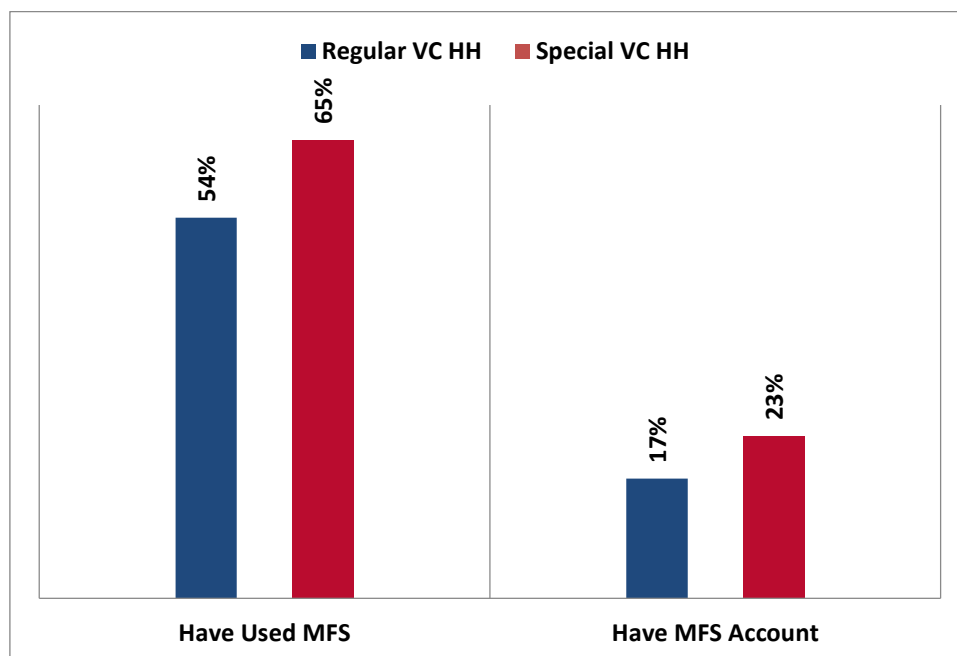


FIGURE 4.18: DURATION OF MFS ACCOUNT (CONSIDERING ONLY THOSE HAVING MFS ACCOUNT)

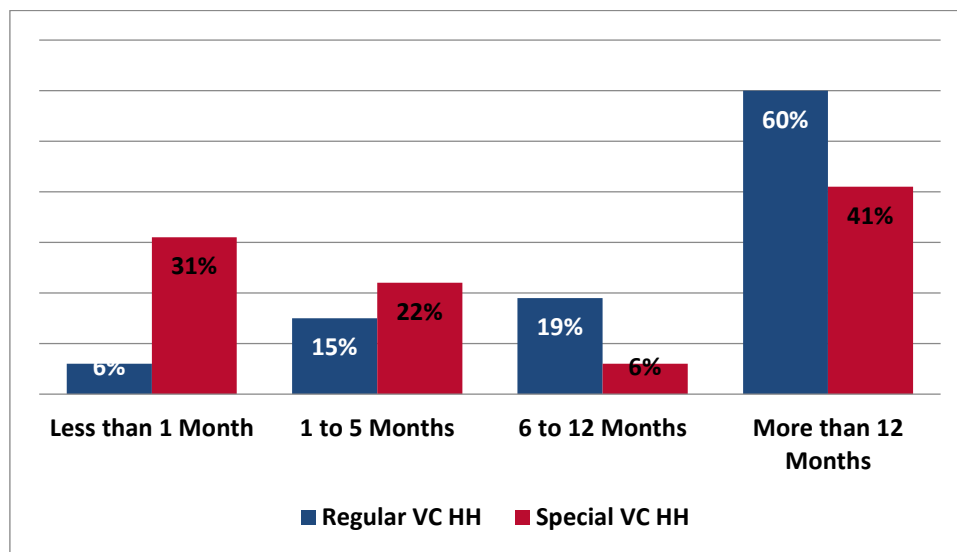
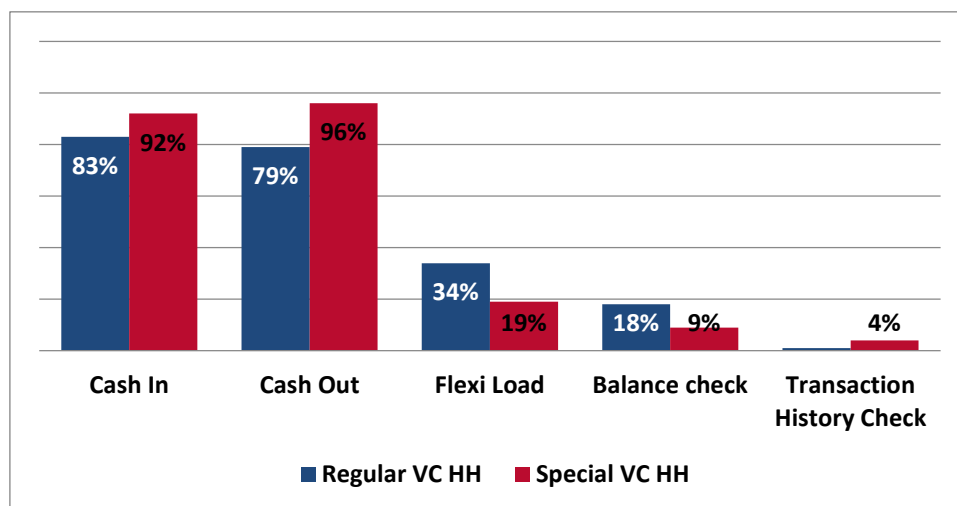


FIGURE 4.19: PERCENTAGE OF FARM HOUSEHOLDS MFS FOR DIFFERENT PURPOSES (CONSIDERING ONLY THOSE WHO USED AT LEAST ONE TYPE OF MFS)



Cash in and Cash out were found to be the most frequently used MFS among the households that used at least one type of MFS. More than 80% of the households using MFS used these two types of services. Flexiload was found to be another significant type of MFS used by the farm households.

BKash was found to be the most popular MFS among those having an account with such providers. More than 90% of the households having MFS account from both regular and special value chains have account with BKash. The rest of the households in both categories has accounts with Dutch Bangla Bank Limited (DBBL).

FIGURE 4.20: PERCENT OF HOUSEHOLDS HAVING ACCOUNTS IN DIFFERENT MFS (CONSIDERING ONLY THOSE HAVING ACCOUNT WITH MFS)

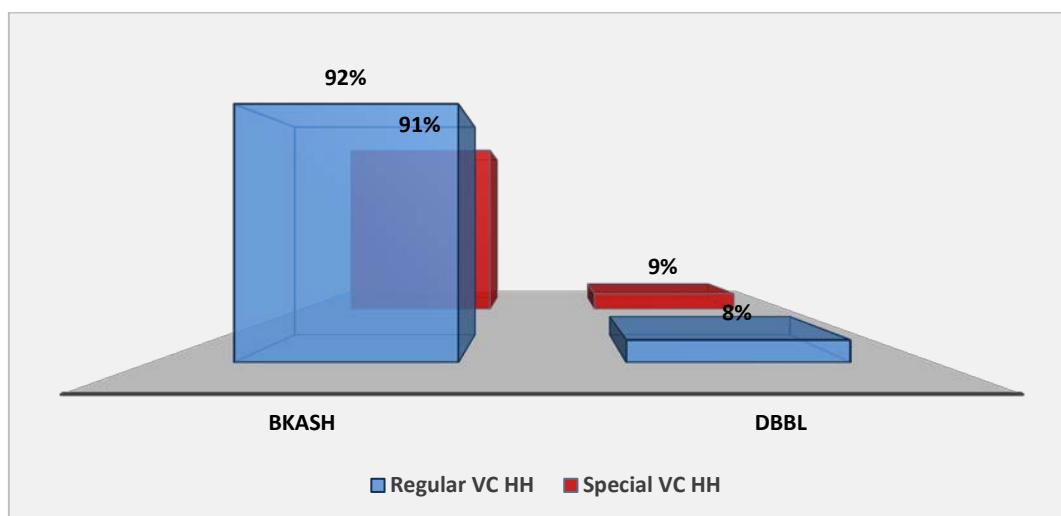
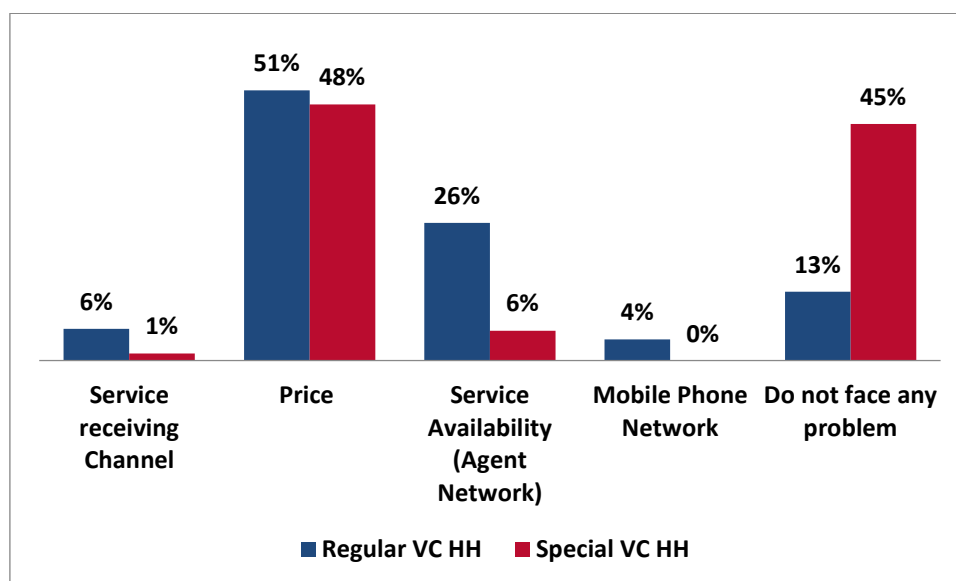


FIGURE 4.21 BELOW SHOWS PROBLEMS FACED BY FARM HOUSEHOLDS IN AVAILING SERVICES OF MFS. PRICE OF THE SERVICE WAS THE MOST COMMON PROBLEM CITED BY THOSE SURVEYED. PROBLEMS FACED BY THE MFS USERS (CONSIDERING ONLY THOSE USING MFS)



As price of MFS was a significant issue, the study asked the households to quantify the charge they had to pay for availing the services. For regular value chain households, the charges for withdrawing and sending were found to be BDT 14.80 and 16.18 respectively. For special value chain households the figures are BDT 15.1 and BDT 15.8 respectively.

TABLE 4.3: CHARGES FOR MFS AS EXPERIENCED BY THE STUDIED HOUSEHOLDS

Average Charge	Regular VC Households (BDT)	Special VC Households (BDT)
To Withdraw	14.80	15.1
To Send	16.18	15.8

The farmers were surveyed on their willingness to use MFS for transactions during crop selling, selling of agro-equipment and other agricultural products. Around 58 percent of the farm households indicated a willingness to use MFS in such cases as shown in Figure 4.22. A similar scenario was found while asking about their willingness in buying the aforementioned products, as shown in Figure 4.23 below.

FIGURE 4.22: WILLINGNESS OF FARM HOUSEHOLDS IN USING MFS TO TRANSECT IN CROP SELLING OR SELLING OF AGRO-EQUIPMENT (PERCENTAGE OF SURVEYED HOUSEHOLDS)

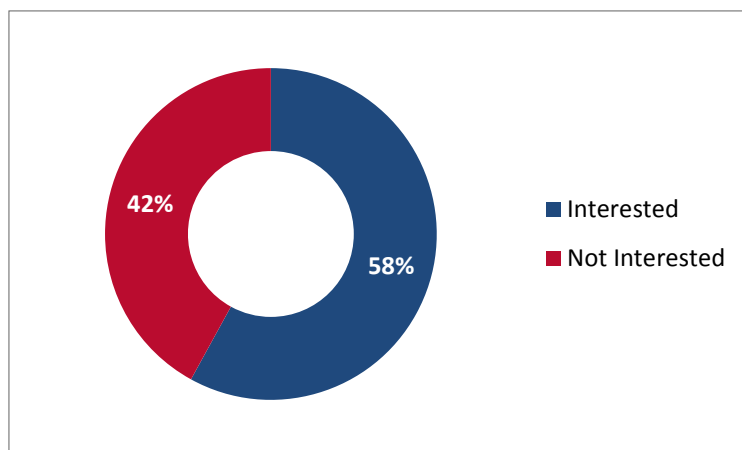


FIGURE 4.23: EXTENT OF WILLINGNESS OF FARM HOUSEHOLDS IN USING MFS FOR SELLING (PERCENT OF STUDIED HOUSEHOLDS)

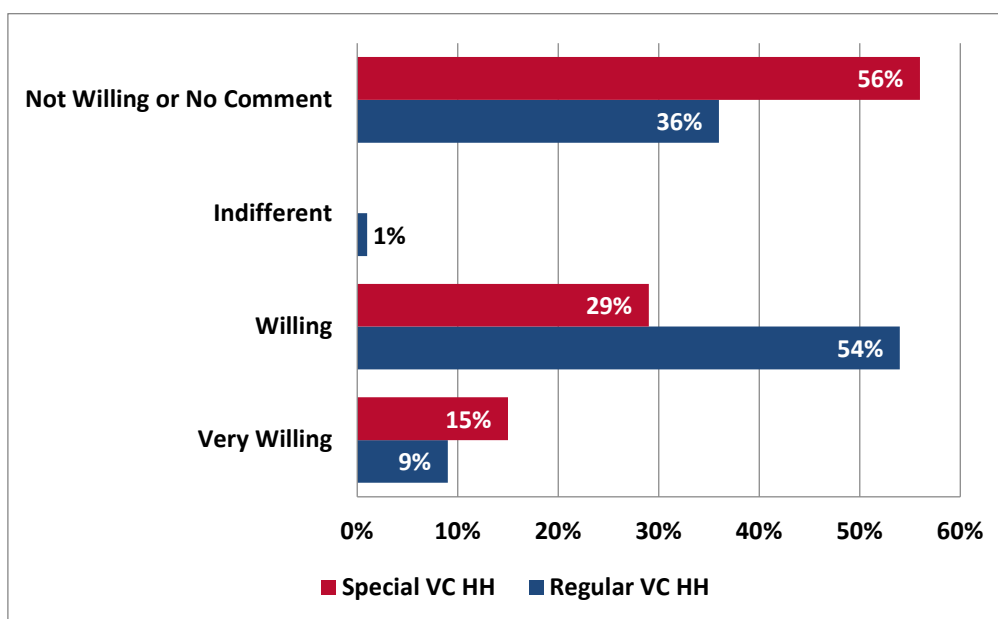


FIGURE 4.24: WILLINGNESS OF FARM HOUSEHOLDS IN USING MFS TO TRANSACT IN CROP BUYING OR BUYING OF AGRO-EQUIPMENT (PERCENTAGE OF SURVEYED HOUSEHOLDS, N = 400)

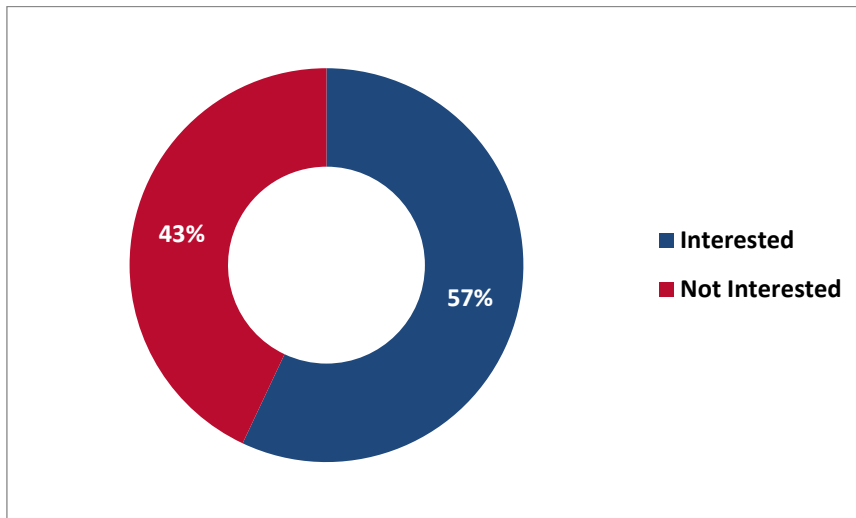
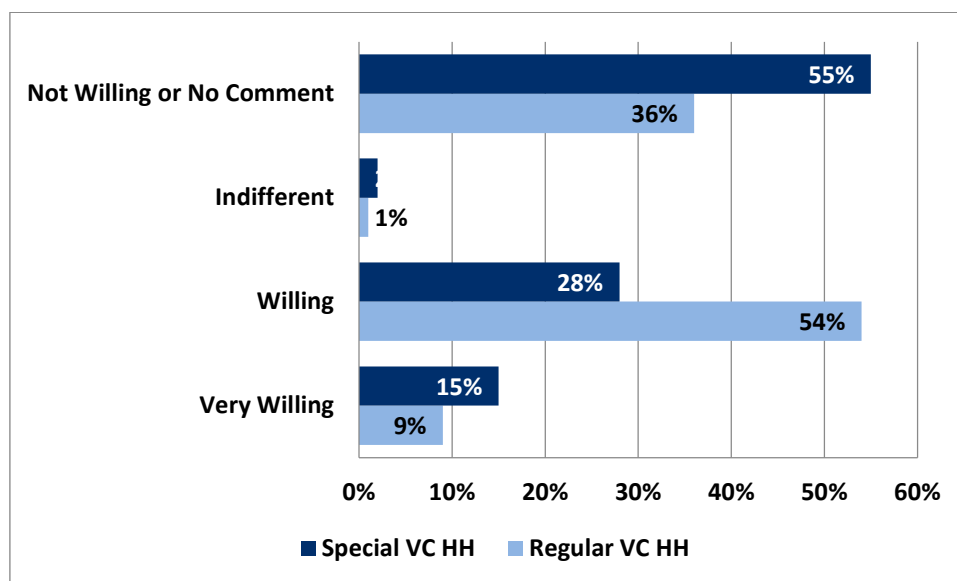


FIGURE 4.25: EXTENT OF WILLINGNESS OF FARM HOUSEHOLDS IN USING MFS FOR BUYING (PERCENT OF STUDIED HOUSEHOLDS)



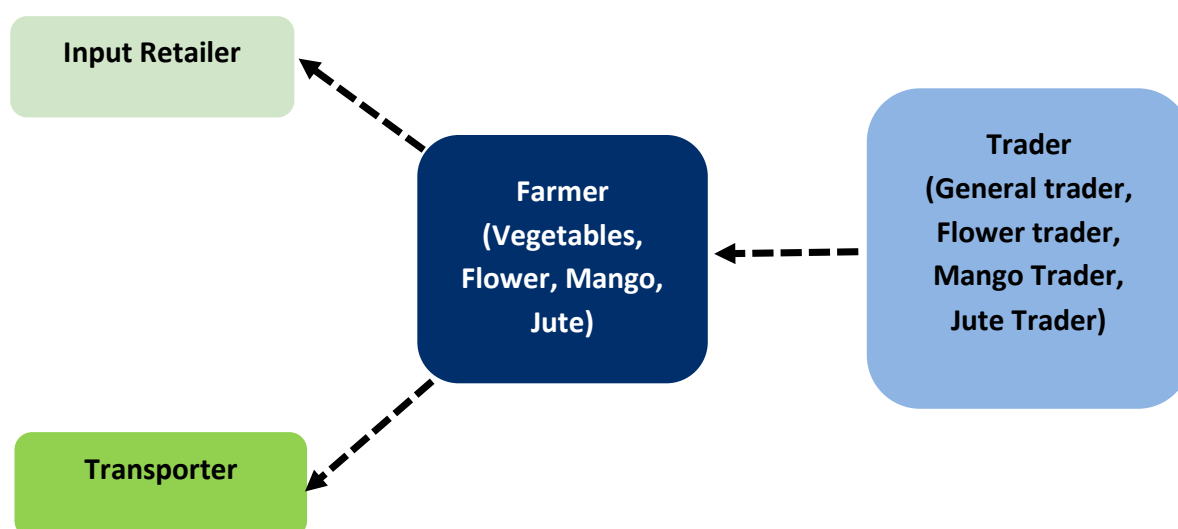
CHAPTER 5: FUND FLOW FOR OTHER ACTORS

The preceding two chapters focused on portraying the flow of funds in the studied farming households and financial management practices in farming communities. This chapter is dedicated to portraying the fund flow for other actors engaged in the selected value chains. These other actors are the ones that are not directly engaged in producing the agricultural products, but are directly or indirectly involved in transactional relationships with the farming households. Some of these actors are providing services or goods to the farmers in exchange of money, while some others are buying the agricultural products from the farmers themselves.

The following actors are covered in this chapter: (1) Input retailers (actors that supply agricultural inputs to the farmers), (2) Transporters (actors that transport the products from farm gates to the market places), (3) General traders (small traders who buy from farmers and sell to end consumers in the local market; as well as large traders who after buying from the farmers sell the products to large wholesalers in the distant cities and towns), (4) Flower traders (actors who buy from flower farmers and then sell to buyers in the towns and cities), (5) Mango traders (actors who buy mangoes from mango tree owners and sell in the market), and (6) Jute traders (small traders who buy from farmers and sell to larger traders, and large traders who sell to the jute mills).

FIGURE 5.1: FUND FLOW RELATIONSHIPS BETWEEN THE OTHER ACTORS AND THE FARMING HOUSEHOLDS

Input retailers and transporters get paid by the farmers, while the farmers themselves get paid by the traders.

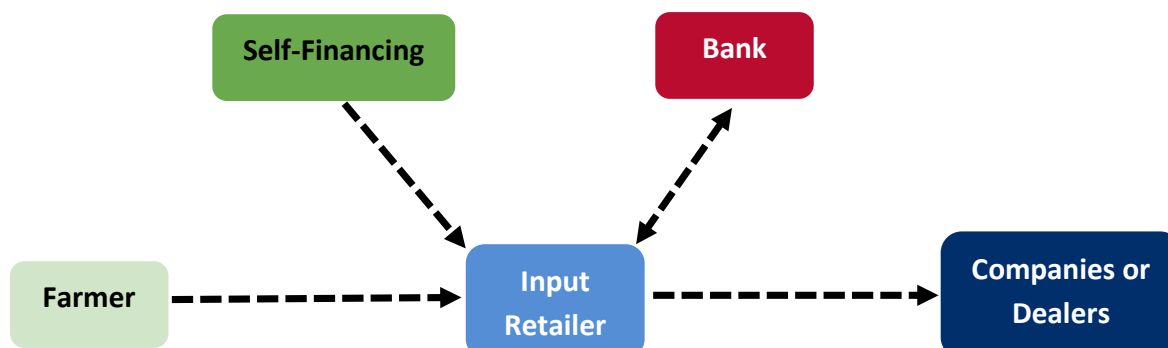


To understand the flow of funds between these other actors, in-depth interviews with these actors were conducted. We interviewed 12 input retailers, 5 transporters, 6 general traders, 5 flower traders, 3 mango traders, and 6 jute traders. Key findings from these interviews are given in the following sections.

5.1 INPUT RETAILER

FIGURE 5.2: FUND FLOW DIAGRAM FOR INPUT RETAILERS

Input retailers pay companies and dealers for collected seeds after first collecting payment for the seeds from farmers, with a 2 to 9 week payment period. Input retailers are dependent on both self-financing and bank loans.



5.1 CONTEXT OF THE STUDY

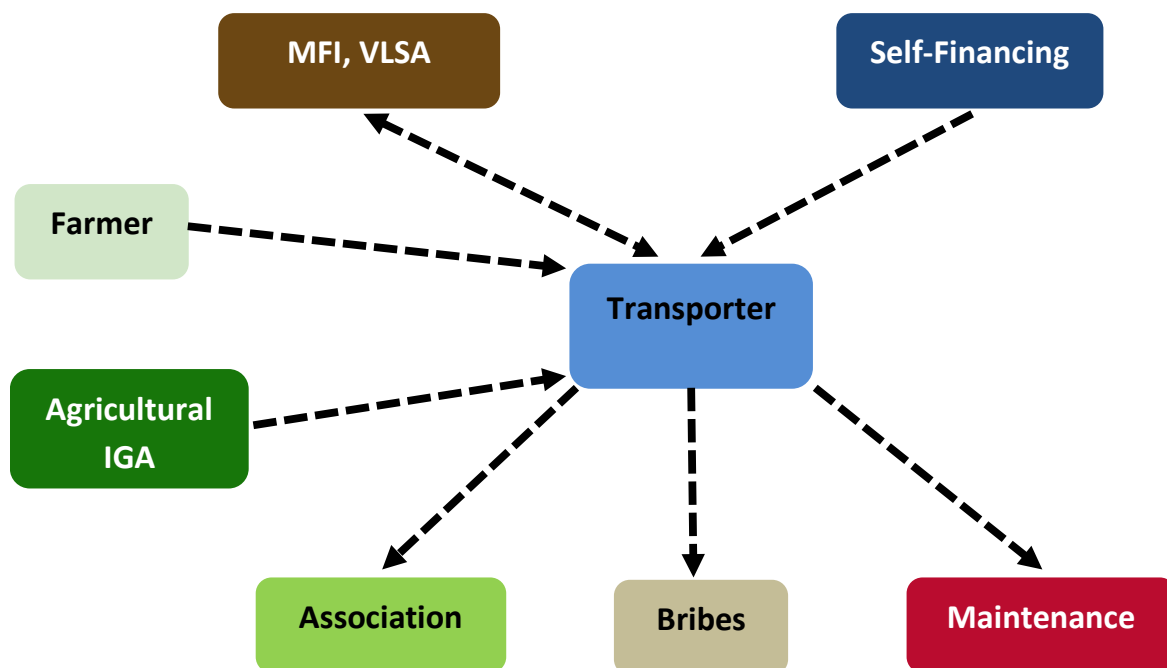
For the purpose of the study, we interviewed a total of 12 input retailers (In-depth interviews). The main agricultural inputs these retailers sell to farmers are seeds, pesticides and fertilizers (chemical and organic). Additional key findings from these interviews are as follows:

- Input retailers usually (if not always) do not have to pay the companies or dealers when they collect the seeds, pesticides, fertilizers, etc. from the companies or dealers. They are expected to pay after selling these to the farmers within a stipulated time. This **payment period varies from 2 weeks to 9 months**. The length of payment period depends on a variety of factors including the volume of product, the relationship between the retailer and the company/dealer, the size of the market and the number of input retailers operating in a specific market place.
- The company pays commission to the retailer based on the amount of product s/he sells. The **percentage of commission has been found to vary between 6 to 15 percent**.
- On an average an input retailer has to invest BDT 6,000,000 per year. This investment includes paying the rent of the shop, paying the fees to the market authority, paying loan installments, maintenance of the shop, utility bills, expenses on labor, decorating the shop (occasionally), etc. A new input retailer most often has to pay at least partially for the products s/he takes from the company or dealer.
- Surveyed input retailers revealed that on average an input retailer sells products worth BDT 10,000,000 annually. The type of product sold more varies seasonally. Customer demand also varies from one place to another. For example, in areas where more farmers are cultivating summer vegetables chemical fertilizers are more in demand.
- Input retailers often sell on credit to farmers. They provide such facilities to develop their own businesses, i.e. to keep their customers happy. A **loyal/repeat customer is more likely to get products on credit or on partial payment than a relatively new customer**. Experienced farmers as well as farmers with larger farming households are also favored more in such cases. None of the interviewed input retailers acknowledged engaging in 'product pushing' or charging more when selling on credit. When farmers buy inputs on credit the payback period has been found to vary from a week to 4 months.
- For financing their businesses input retailers are dependent on both self-financing and bank loans. While smaller input retailers are more dependent on self-financing, their larger counterparts enjoy better access to banks.

5.2 TRANSPORTER (NOSIMON/KORIMON/ALAM SADHU DRIVERS)

FIGURE 5.3: FUND FLOW DIAGRAM FOR TRANSPORTERS (NOSIMON/KORIMON/ALAM SADHU DRIVERS)

Transporter expenses include payments for vehicle maintenance, bribes, and to transport associations. Farmers usually pay the transporter as soon the goods are transported. Apart from their own money, the transporters often resort to credits from MFI/VLSAs.



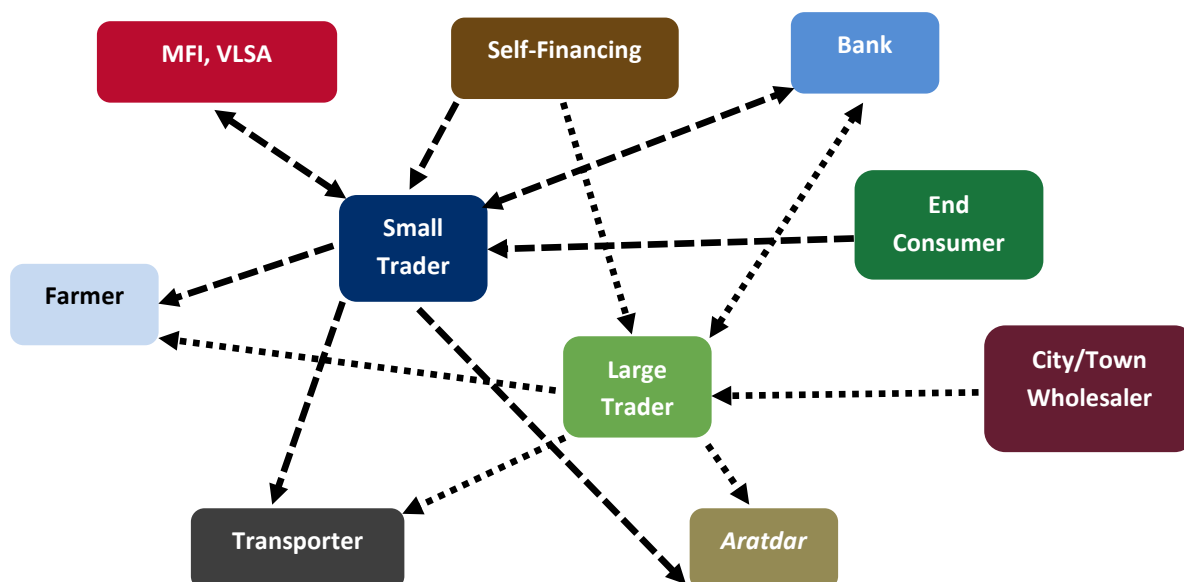
Two drivers of battery operated vans and 3 drivers of Nosimon/Korimon/Alam Sadhu (vehicles having shallow irrigation machine as engines) have been interviewed. Findings from their interviews are given below:

- Transporters (vehicle operators) usually do not depend solely on their income from transporting agricultural products for farmers (from farms to market places). All the interviewed **transporters reported being dependent on income from cultivation of crops (vegetables mainly) along with their income from driving** the said vehicles.
- The average cost of buying a battery operated van is BDT 40,000 and that of a Nosimon is BDT 100,000. Most of the drivers have their own vehicles while some drive vehicles owned by others. Second hand vehicles are also available for purchase for a reduced price. There is also a **scope of credit purchase, where the buyer can payback in installments (40 to 46 installments) with an interest (this interest varies from 12 to 15 percent)**.
- Operational cost for the two types of vehicle operators are BDT 3,000 and BDT 7,000. This includes maintenance cost as well as other costs such as fees of associations, bribes to the authorities etc.
- Rainy season (May to July) and winter (December to February) have been reported to be the busiest seasons for transporters.
- Farmers usually pay the transporter as soon the goods are transported. The average cost of carrying agricultural goods ranges from BDT 25 to 40 per maund, while average income of a transporter varies from BDT 600 to 800.
- Apart from their own money, the transporters often resort to credits from MFI/VLSAs. Some transporters have reported to be able to save BDT 200 per month on an average and they usually rely on MFIs and/or VLSAs for saving.

5.3 GENERAL TRADER (LARGE AND SMALL)

FIGURE 5.4: FUND FLOW DIAGRAM FOR GENERAL TRADER (LARGE AND SMALL)

Traders buy the agricultural products directly from the farmers and then either sell in the nearby market places to local consumers (small traders) or ship these to wholesalers in distant cities or towns (large traders). All buying (from farmers) and selling to wholesalers in the city/town is facilitated by the Aratdars. All traders are reliant on self-financing, at least partially and large traders also buy or sell on credit.



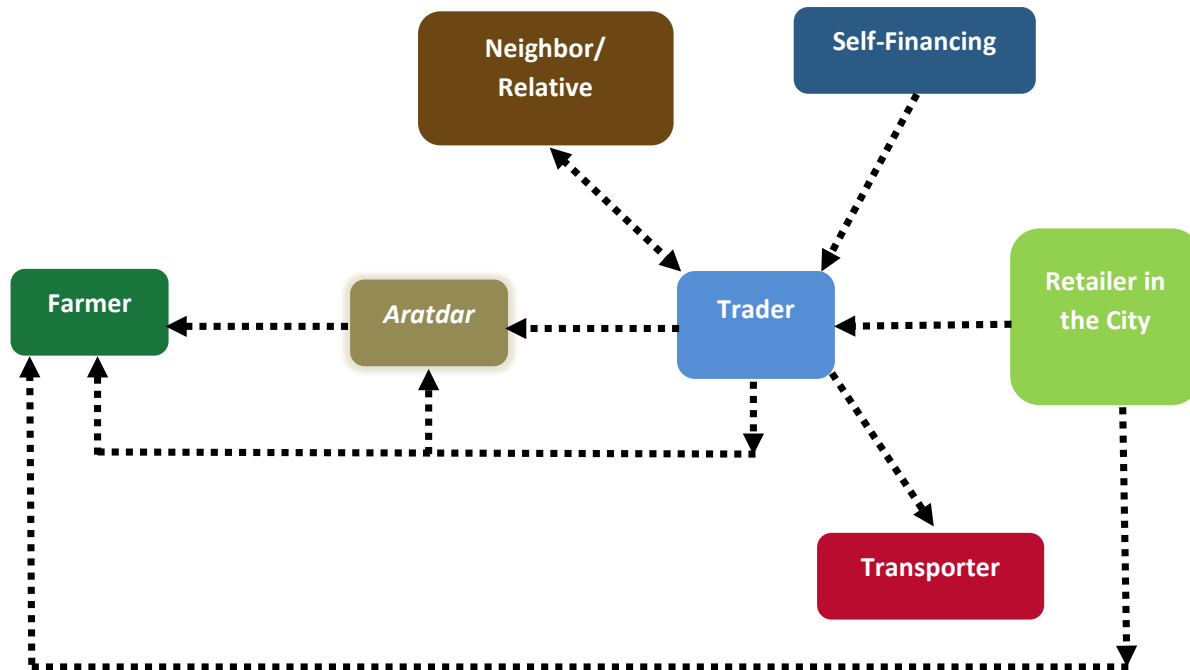
The figure above shows the fund flow diagram for traders of agricultural products. These traders buy the agricultural products directly from the farmers and then either sell in the nearby market places to local consumers (small traders) or ship these to wholesalers in distant cities or towns (large traders). We interviewed 4 small traders and 2 large traders. The following are the key findings revealed through these interviews:

- Small traders buy products from farmers worth on average BDT 16, 000 per month and average monthly profit is around BDT 7,000. They sell twice per week in the nearby market places.
- Large traders on the other hand, buy goods from farmers worth on average BDT 50, 000 per month and their average monthly profit is BDT 100,000. Four to five large traders work together when sending products to distant cities or towns.
- **All buying (from farmers) and selling to wholesalers in the city/town is facilitated by the Aratdars.** They charge a commission (ranging from 1 to 8 percent) from the traders when they buy/sell products.
- While the small traders rarely buy or sell on credit, this is a common practice among the larger traders. Credit payments are made within 3 to 7 days usually.
- Traders have to bear the expenses of transportation and these payments are usually paid at the time of providing service.
- All traders are reliant on self-financing, at least partially. While small traders have been found to be more reliant on VLSA/MFIs, larger traders have reported improved access to formal financial service providers during recent years.
- For both type of traders neighbors/friends/relatives are the only source of fund in case of sudden need of money.

5.4 FLOWER TRADER

FIGURE 5.5: FUND FLOW DIAGRAM FOR FLOWER TRADER

Flower traders buy flowers from farmers or Aratdars and sell to retailers in the city. Multiple flower traders operate together when hiring transporters to send their goods to city retailers.



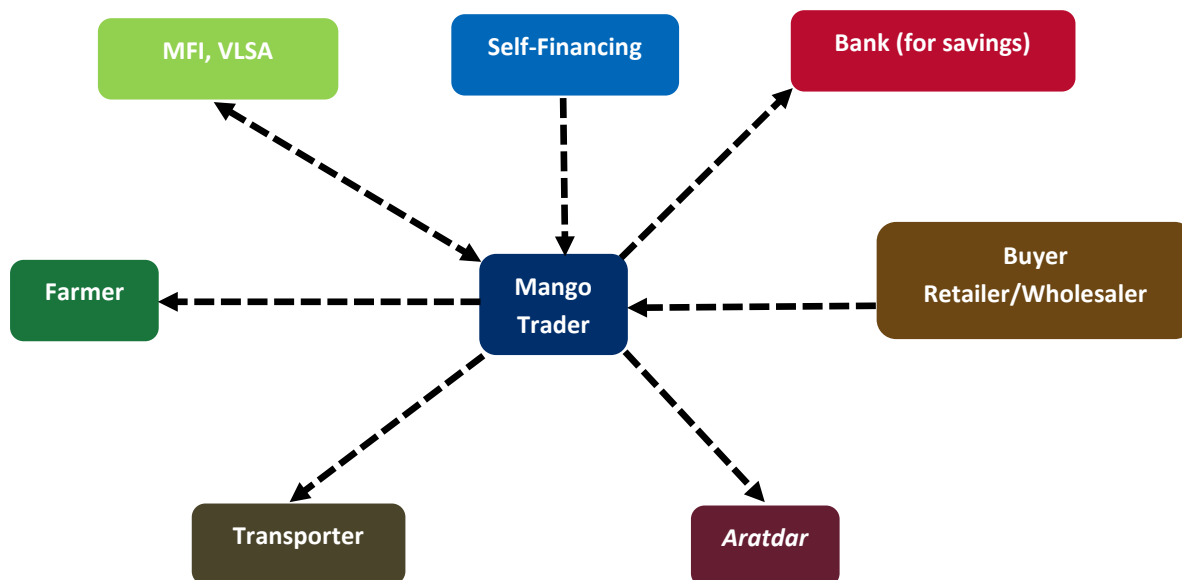
We interviewed a total of 5 flower traders and all of them operate from Godkhali, Jessore. Flower traders have been interviewed separately as they have special modalities of financial transactions compared to general traders. Key points revealed through these interviews are given below:

- Flower traders buy flowers from farmers and sell to retailers in the city. Multiple flower traders operate together when hiring transports to send their goods to city retailers. Sometimes they may also negotiate as a team with their customers (retailers in the city).
- Flower trading reaches its peak during Bangla New Year, Valentine’s Day and different national holidays. Sometimes when there is high demand, retailers from the city by-pass the traders and buy directly from the farmers.
- All exchanges between the flower traders and the farmers are facilitated by the Aradars at the market place. Aratdars charge a commission from the traders, which varies by season and by prevailing demand of flower in the market.
- All interviewees have reported flower trading to be more risky compared to other trading ventures. They may face 5 to 10 percent loss. Moreover, buyers from the city bypassing them and buying directly from the farmer makes their business more risky.
- On average, a flower trader buys flowers worth BDT 30,000 per week, and his average profit margin varies from 4 to 22 percent.
- In cases of sales on credit, payments are paid within 24 hours. In cases of sales on partial credit, the remaining payment is delayed until the traders get paid from the city/town retailers.
- While flower farmers are enjoying improved access to finance from commercial banks, flower traders have little or no access to such financial services at the moment.

5.5 MANGO TRADER

FIGURE 5.6: FUND FLOW DIAGRAM OF MANGO TRADER

Mango traders buy from tree or orchard owners to sell to buyers or wholesalers from the city/towns. Payments are made to orchard owners in advance of harvesting. Traders pay for transport and commission to aratdars. Mango traders are mostly self-financed.



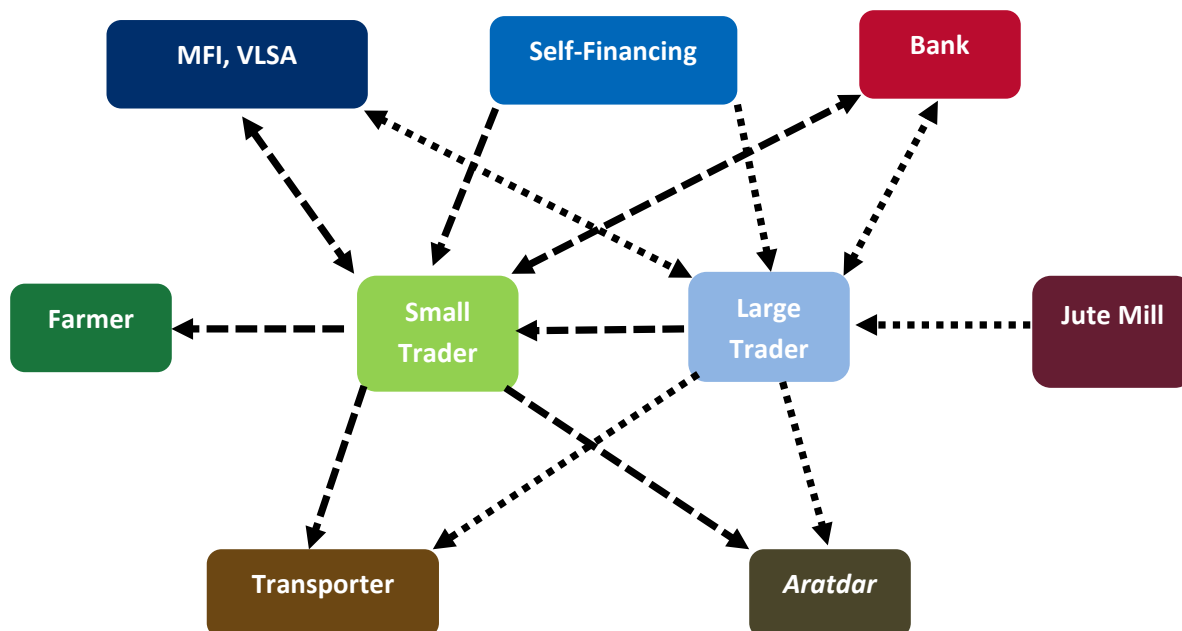
For the purpose of this study, we interviewed 3 mango traders from Satkhira. Key findings from these interviews are given below:

- Mango traders have to rely on their experience when choosing mango trees to buy the fruits. The tree owners (farmers) sell the yield from the whole tree to the traders. The **traders usually pay the tree owners well in advance of harvesting. The closer harvesting time gets the higher amount of money the trader has to give to the owner.** Hence, the traders have to have a lot of experience to choose the right trees.
- The business season is very short – only one and a half months. During this period, traders buy the mango and then sell to buyers (retailer/wholesaler) from the city/towns. The traders have to bear the expenses of transport as well as commission for the intermediaries (Aratdars). Commission for Aratdars is 10 percent in local markets and 20 percent for distant markets.
- Average investment of a mango trader ranges from BDT 200,000 to 400,000; and average profit falls between BDT 80,000 to 250,000.
- MFIs are interested in providing loans, but traders are not interested because of the weekly installment payment system.
- The traders are mostly self-financed. They have little to no access to formal credit from banks. However, the money they save is usually saved in banks.

5.6 JUTE TRADER (SMALL AND LARGE)

FIGURE 5.7: FUND FLOW DIAGRAM FOR SMALL AND LARGE JUTE TRADERS

Generally, it is the small traders who buy the jute from the farmers and then sell to the large traders. These large farmers then sell the jute to the jute mills. Traders pay for transport and aratdar comission. Jute traders have comparatively better access to financial services.



A total of 6 jute traders have been interviewed, of them 3 are small traders and 3 are large. Generally, it is the small traders who buy the jute from the farmers and then sell to the large traders. These large farmers then sell the jute to the jute mills. Key findings from the interviews are as follows:

- Jute trading seasons lasts for six months of the year (from May to October). Sales/purchases on credit are common for jute traders. While small traders usually pay the farmers in cash (no sales on credit), these small traders themselves have to sell to the large farmers on credit. Large traders then sell the purchased jute to the jute mills on credit. When the mill pays the large trader, then the trader pays back the small traders (one large trader usually buys from multiple small traders).
- Selling jute to mills requires licenses (registration with the mill) and the small traders who deal in small volumes usually cannot avail such documents. Hence they sell their jute to large traders who have licenses.
- Government jute mills are the predominant buyers from large jute traders, but there are a small number of privately owned jute mills who buy jute from these traders. While government jute mills take a long time (as long as 10 months) to pay the price of the jute, **traders still prefer them over privately owned ones as government mills buy in much larger volumes compared to their privately owned counterparts.**
- Small traders on average buy jute worth BDT 1,200,000 per season from farmers and sell those to large farmers for BDT 1,400,000. Large traders on an average buy jute worth BDT 4,500,000 per season from small traders and sell those for BDT 5,500,000.
- Jute traders have comparatively better access to financial services (in comparison with vegetable traders, mango traders, flower traders etc.)

CHAPTER 6: INFERENCES AND RECOMMENDATIONS

The first section of this chapter has pointed out key inferences drawn from the collected data and analyses conducted based on that data. These inferences are related to a range of findings. The next section here puts forward a set of recommendations that are expected to improve the overall fund flow of the actors engaged in the selected value chains.

6.1 INFERENCES

Based on the findings from the conducted study, the following are some key inferences:

- The farmers involved in flower production have the highest income. Fruits (including mango) and summer vegetables also generate significant income for the farming households. However, a smaller number of farmers are engaged in these value chains. Factors driving this may be a lack of awareness about the income potential, lack of confidence, etc. Additionally, farmers endowed with smaller plots of land tend to prefer growing cereals, as they intend to meet their household demand of cereals through their own production.
- While income potential from non-farm IGAs such as working away from home, cottage industry, service or grocery shop is much higher compared to livestock rearing and working as day laborer, more households are reliant on livestock and working as day laborers as non-farm IGAs. This is probably due to lack of capital, lack of skills, etc.
- Households involved in the flower and mango value chains have been found to have higher average monthly expenditures compared to the rest. This not only implies that flower and mango cultivating households have higher income from involvement in these value chains, but also these are households with adequate capital (or access to finance) needed for cultivating mango and flower.
- Healthcare expenditure has the highest frequency among the different types of forced expenditure for all types of farming households. To meet such expenses along with other expenses households usually rely on selling their agricultural products and taking loans. To meet such forced expenses farmers may have to sell their produce earlier, while they could have earned more if they could sell a little later.
- Average forced expenses reach their peak (as per the survey results) during the periods from May to June, August to September and November to January. While incurring forced expense adds additional burden on farming households any time of the year; forced expense during November to January may be of special concern, considering this is the general lean season for the country (seasonal unemployment is high during this period).
- The voluntary expenses appear to reach their peak at the beginning of the Bangla calendar year (March to April). This may be due to the fact that many farming households have additional cash from selling their products during this period.
- While less than one-third of the respondents were found to be from households that are able to save; savings capacity of special value chain households have been found to be higher compared to that of regular value chain households. This is most likely due to special value chain households being able to earn higher rates of return on their investments. Another key observation here is that, while regular value chain farmers are relying mostly on NGOs (MFIs) for their savings, their special value chain counterparts seem to prefer commercial banks over MFIs. The inference here is that special value chain farmers have higher extent of financial literacy because of their improved socio-economic conditions.
- Considering the transactional relationship between farming households and different actors in the value chain, it appears that regular value chain farmers have higher reliance on farias and aratdars; while

special value chain farmers are in most cases bypassing these actors and interacting directly with large wholesalers. The relatively higher demand for special value chain goods may be the reason behind this.

- Another key observation regarding relationships between farming households and different actors of the value chain is that most of these interactions are seasonally based. The interaction between farmers and these other actors is centered on the crop s/he chooses to cultivate and the time when s/he cultivates that crop.
- The majority of the regular value chain farmers receive payment when they sell their produce. However, in the case of special value chain farmers, the first payment is in most cases partial. Special value chain farmers being (in most cases) more financially strong can afford getting their dues in installments for a better price. On the other hand, the prices of the goods they sell are much higher compared to those of regular value chain farmers.
- As expected, household decision-making regarding cultivation related activities are mostly dominated by the household heads and other male members of the family. Women seem to have a relatively stronger voice regarding other IGA-related decisions. This is likely because livestock rearing and poultry are among the top other IGAs for the surveyed households and it is the women of the family who are usually engaged in such IGAs.
- While almost one-third of the surveyed households reported not taking any loans recently, of those taking loans the majority reported they took those loans for agricultural purpose. This is quite natural considering these were primarily agricultural households. Banks and MFIs are the two top sources of loans for all types of farming households.
- The majority of the households (engaged in both types of value chains) have been found to be repaying their loans on weekly basis (around half of the total sample). This implies that these rural households are still more reliant on MFI loans. However, a point to note here is a higher percentage of households are repaying loans on an annual basis than on monthly basis. This may be because larger farmers who are taking large loans have access to commercial bank loans.
- One-fifth of the surveyed regular value chain farmers have reported paying over 20 percent interest rates on the loans they have taken; while almost half of them reported paying interest of 12 to 15 percent. The scenario is not much different for special value chain farmers.
- Over half of the surveyed farmers expressed their satisfaction with the current credit facilities, while just above one third of them have been found to be not satisfied.
- While higher percentage of regular value chain farmers have MFI accounts, the special value chain farmers have been found to be using services of commercial bank accounts more than their regular value chain counterparts. Special value chain farmers especially those involved in flower cultivation may be more involved with commercial banks as such service providers are able to provide large amount of loans that are needed for flower cultivation. However, as a whole, 16 percent of bank accounts held by different types of farmers have been found to be inactive recently.
- Over half of the surveyed farmers have reported that it takes them between 10 to 30 minutes to reach the financial service provider station from their homes or workplaces. This according to farmers surveyed is quite acceptable from the client point of view. However, there are still a significant portion of farmers who have to travel as long as one hour or more.
- Almost 60 percent of the surveyed farmers have reported using MFS and around 20 percent have been found to be currently using MFS. Of those using MFS almost half have MFS accounts that have lasted over 12 months. The inference here is that while penetration of MFS and awareness about such service is still low in Bangladesh, farming households are becoming more interested in using such electronic services and many have been continuing relying on such services.
- Cash in and Cash out were found to be the most frequently used MFS among the households that used at least one type of MFS. More than 80% of the households using MFS used these two types of services. Flexiload was found to be another significant type of MFS used by the farm households.
- Around half of the surveyed farmers have reported high price of the MFS to be a major impediment to them relying more on such service. The second most significant concern in this regard is availability of

this service. From this we infer that there is scope for improvement in ensuring quality MFS for the farming households.

6.2 RECOMMENDATIONS

Following are some recommendations based on the analysis of the findings from the survey and the inferences drawn from them.

CROP INSURANCE

The most common reason for financial problems for farmers is crop failure. In many cases, this is due to severe weather conditions or other circumstances beyond the control of the farmers.

If there is an insurance product available to farmers to insure against such crop failure, the overall financial system in which the farmer operates would become more efficient and effective.

Life insurance is being offered through mobile service providers. It could be extended to cover crops and would be a relatively easy method of collecting premiums.

CHANGE EXISTING LOAN MODALITY

At present most loans availed from MFIs have weekly repayments starting from the week after drawdown. Farmers taking such loans do not reap the rewards of the loan till the end of the crop cycle. Loans need to be modified to reflect this.

Currently, the farmers are simply using the funds drawn down as loan to repay on a weekly basis.

CREATE GREATER AWARENESS IN FARMERS REGARDING THE LOANS

We have seen that most farmers do not have full understanding of the loan and the interest they are being charged. From our survey, we have found that the farmers are under the impression that MFI loans are at 10% when in reality this is 23% at a minimum.

We would recommend introduction of 'Financial Literacy Training' for farmers to help them understand loan mechanisms, planning for future expenditure and savings options.

Greater awareness here would also deter them from taking loans to fund non-productive investments, which is a very common reason for farmers falling into exceptionally high loan burdens.

FLOWER FARMING

From the selected value chains, flower farming is very unique in a number of aspects. The investment requirement for farming high quality flowers can be very high. Financial products tailored for the investment requirements of flower farmers need to be developed.

As the geographical dispersion of flower farmers is limited, the product would only need to be offered in this small area. However, relative to other farming loans, the amount of these loans would be significantly higher.

MANGO FARMING

In the case of mango farming, a funding shortage exists at the buyer side. The *Aratdars* buy mango in very large quantities and also provide advance payments to mango farmers. A further study into the financial flow of actors further down the value chain but indirectly linked to the farmers can lead to a better understanding for development of financial products.