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**e-MITRA**  
Advancing Mobile Financial  
Services in Indonesia

# MARKET INSIGHTS INTO THE FINANCIAL BEHAVIORS AND DESIGN OF MOBILE FINANCIAL SERVICES PRODUCTS FOR COCOA FARMERS IN INDONESIA

**MAY 2013**

This report is made possible by the generous support of the American people through the United States Agency for International Development (USAID). The report was prepared for review by USAID by MicroSave and e-MITRA.

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## **DISCLAIMER**

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## CONTENTS

<b>ACRONYMS.....</b>	<b>7</b>
<b>EXECUTIVE SUMMARY .....</b>	<b>8</b>
<b>SECTION 1: INTRODUCTION.....</b>	<b>13</b>
1.1 Background .....	13
1.2 Research Objectives .....	13
1.3 Organization of the Report .....	13
<b>SECTION 2: RESEARCH METHOD .....</b>	<b>14</b>
2.1 Study Design.....	14
2.2 Survey Instrument.....	15
2.3 Training and Fieldwork.....	15
2.4 Data Management .....	15
2.5 Sample Characteristics .....	16
<b>SECTION 3: UNDERSTANDING SAVINGS PATTERNS OF COCOA FARMERS .....</b>	<b>18</b>
3.1 Saving Status .....	18
3.2 Reasons for Saving .....	19
3.3 Savings with Formal Financial Institutions.....	21
3.4 Use of Financial Services Offered by Banks .....	22
3.5 Number of Deposit and Withdrawal Transactions .....	22
3.6 Place for Deposit and Withdrawal Transactions.....	22
3.7 Savings with Semi-Formal Financial Institutions and Informal Channels .....	22
<b>SECTION 4: UNDERSTANDING CREDIT BEHAVIOR OF FARMERS.....</b>	<b>25</b>
4.1 Loan Status of Farmers .....	25
4.2 Purpose of Taking Loans .....	25
4.3 Borrowing Source.....	26
<b>SECTION 5: INCOME .....</b>	<b>30</b>
5.1 Income from Cocoa .....	31
5.1.1 Average Number of Payments Received From Cocoa Sales.....	31
5.1.2 Average Size of Transaction.....	31
5.1.3 Payment Negotiation .....	31
5.1.4 Mode of Payment .....	31
5.1.5 Selling Cocoa Output .....	32
5.1.6 Place of Transaction.....	33
5.2 Other Income and its Sources .....	33
5.2.1 Mode of Receiving Other Income.....	33
5.2.2 Place of Collecting Other Income .....	34

5.2.3	Number of Other Income Payments .....	34
5.2.4	Average Size of Transaction for Other Income.....	34
<b>SECTION 6: EXPENSES AND BILL PAYMENTS.....</b>		<b>35</b>
6.1	Common Cash Outflows.....	35
6.2	Mode of Bill Payments .....	35
6.3	Frequency of Bill Payments.....	36
6.4	Point of Service for Processing Bill Payments.....	36
<b>SECTION 7: MONEY TRANSFER AND REMITTANCES.....</b>		<b>38</b>
7.1	Sending Money .....	38
7.2	Frequency of Sending Money .....	38
7.3	Average Transaction Size .....	39
7.4	Mode of Sending Money.....	39
7.5	Receiving Money.....	39
7.6	Average Transaction Size (Receiving Money) .....	39
7.7	Mode of Receiving Money .....	40
<b>SECTION 8: MOBILE PHONE USAGE AND POTENTIAL FOR MOBILE MONEY.....</b>		<b>41</b>
8.1	Mobile Ownership.....	43
8.2	Usage Pattern of Mobile Phone .....	44
8.3	Buying Airtime.....	44
8.4	Mobile Network Operators and Service Quality.....	45
8.5	Reasons for Not Having Mobile Phones .....	45
8.6	Earlier Experience of Mobile Money .....	46
8.7	Willingness for Mobile Money .....	46
8.8	Perceived Benefits from Mobile Money .....	46
8.9	Willing to Use Cash-in/out Agents .....	47
8.10	Preference for Mobile Money Agents .....	47
<b>SECTION 9: DIFFERENCE BETWEEN MOBILE-BASED AND PAPER-BASED SURVEY .....</b>		<b>49</b>
<b>SECTION 10: ANNEXURE.....</b>		<b>54</b>
10.1	Problems Encountered in Using EpiSurveyor/Limitations of EpiSurveyor .....	54
10.2	Changes in Quantitative Questionnaire after Field-Testing .....	57
10.3	Survey Location .....	58
10.4	Quantitative Questionnaire .....	59
10.5	FGD Guide for NetHope Market Research Study with Cocoa Farmers .....	70

## LIST OF FIGURES

Figure 1: Survey Locations .....	8
Figure 2: Paper Survey Data Collection .....	9
Figure 3: Age of Respondents .....	16
Figure 4: Status of Farm Ownership .....	16
Figure 5: Education Level of Respondents.....	17
Figure 6: Saving Status of Farmers.....	18
Figure 7: Why Farmers Do Not Save .....	19
Figure 8: Why Farmers Save .....	20
Figure 9: Savings with Banks/BPRs .....	21
Figure 10: Use of Financial Services Offered by Banks .....	22
Figure 11: Number of Withdrawal Transactions (per month).....	22
Figure 12: Number of Deposit Transactions (per six months).....	22
Figure 13: Savings in Semi-Formal and Informal Mechanisms.....	23
Figure 14: Women Discuss Savings in FGD .....	24
Figure 15: Loan Status of Farmers .....	25
Figure 16: Purpose of Obtaining Loans.....	26
Figure 17: Sources for Loans.....	26
Figure 18: FGD with Farmers .....	27
Figure 19: Average Number of Cocoa Sales Payments.....	31
Figure 20: Average Size of Transaction.....	31
Figure 21: Negotiation of Payment by Farmers.....	31
Figure 22: FGD with Women on Sulawesi .....	32
Figure 23: Selling Cocoa Output .....	32
Figure 24: Place of Cocoa Sales Transaction.....	33
Figure 25: Other Income and its Sources.....	33
Figure 26: Place of Collecting Other Income .....	34
Figure 27: Number of Other Income Payments.....	34
Figure 28: Average Size of Transaction for Other Income.....	34
Figure 29: Farmers' Cash Outflows .....	35
Figure 30: Frequency of Bill Payments .....	36
Figure 31: Place for Bill Payments .....	36
Figure 32: Frequency of Sending Money .....	38
Figure 33: Average Size of Transaction (while sending money) .....	39
Figure 34: Status on Receiving Money .....	39
Figure 35: Average Transaction Size (Receiving Money).....	39
Figure 36: Mode of Receiving Money.....	40
Figure 37: Mobile Ownership among Farmers .....	43
Figure 38: Age of Ownership of Mobile Phones (in numbers) .....	43
Figure 39: Mobile Phone Use in Sulawesi.....	44
Figure 40: Place for Buying Airtime .....	44
Figure 41: Average Monthly Spending on Airtime .....	45
Figure 42: Feedback on Service Quality of MNO.....	45
Figure 43: Reasons for Not Having Mobile Phones .....	45
Figure 44: Openness to Mobile Money .....	46
Figure 45: Perceived Benefits from Mobile Money.....	46
Figure 46: Preference for Mobile Money Agents .....	47
Figure 47: Farmer Mobile Survey Collection .....	49
Figure 48: Enumerator Training.....	51

**LIST OF TABLES**

Table 1: Errors of Omission and Commission .....49  
Table 2: Average Interview Cost and Average Length (comparison between paper and mobile-based surveys) .....52

## ACRONYMS

<b>BPR</b>	Bank Perkreditan Rakyat Indonesia
<b>BRI</b>	Bank Rakyat Indonesia
<b>FGD</b>	Focus Group Discussion
<b>GAP</b>	Good Application Practices
<b>KTP</b>	National Identification Card (Indonesia)
<b>KUD</b>	Koperasi Unit Desa
<b>KUR</b>	Peoples Entrepreneurs Credit
<b>MSME</b>	Micro, Small and Medium Enterprises
<b>PLN</b>	Perusahaan Listrik Negara
<b>PNPM</b>	Government's National Program for Community Empowerment
<b>ROSCA</b>	Rotating Savings and Credit Association
<b>SMS</b>	Short Message Service
<b>FSP</b>	Formal Savings Providers

## EXECUTIVE SUMMARY

This research study was conducted by *MicroSave* for the USAID funded programs, e-MITRA and AMARTA II. The research study focuses on understanding the financial behaviors and mobile phone usage of cocoa farmers in the Luwu and Polewali Mandar districts of Sulawesi Island of Indonesia. In addition, the study compares and evaluates the use of a mobile-based data collection method with a paper-based data collection method.

The research study used quantitative and qualitative data collection techniques. Data from cocoa farmers was collected primarily through one visit respondent surveys administered using a structured questionnaire. A total of 549 respondents were interviewed for the quantitative part of the research study. In addition, four focus group discussions were held with a total of 36 respondents to gain an in-depth understanding of the needs and preferences of cocoa farmers.

**Figure 1: Survey Locations**



The research study and data provide key market insights that can be used to help design mobile financial service products and to structure service delivery to meet the needs and usage patterns of the farmers. The data provides market insights into 7 key areas:

### 1. Savings Patterns of Cocoa Farmers

- Less than half of the farmers (**46%**) reported that they currently keep cash (using either formal or informal channels). Low cash inflow was cited by **87%** of the farmers as one of the reasons for not keeping cash.
- Of the farmers who keep cash savings at home, **56%** keep savings at home for the convenience of accessing the money anytime (especially in emergencies).

- Thirty eight percent (38%) of the farmers who keep money reported they do so to fund their children’s education and school-related expenditures.
- Of those famers who save, more than half of the farmers (54%) save in banks or BPRs. The remaining farmers (46%) save in semi-formal and informal channels. Almost all (99%) of the farmers who save in banks also save in semi-formal and informal channels.
- Farmers with bank accounts use those accounts primary to make cash deposits and cash withdrawals (99% and 90% of sample farmers respectively). Cash deposit transactions (any type of deposit-cash/funds transfer/salary payment) are less frequent than withdrawal transactions. Farmers with bank accounts, conduct most of their deposit transactions in bank branches (99%) whereas farmers make withdrawals at both bank branches (73%) and ATMs (24%).

## 2. Credit Behavior of Farmers

- Thirty-six percent (36%) of farmers reported they borrowed money. Of those who borrowed, almost half of the farmers (48%) used the loan amounts for cocoa farming activities.
- There is a range of lending sources. Of those farmers with loans, 25% received loans under government programs (such as KUR and PNPM), 24% received loans from banks and 18% received loans from collectors. Collectors are important stakeholders in the cocoa value-chain who source cocoa from farmers and sell it to larger traders or exporting companies.

## 3. Income from Cocoa and Other Sources

- Sixty-two percent (62%) of farmers reported they receive, on average, between 13-24 payments from cocoa sales every year.
- Just over half of the farmers (51%) reported the average transaction size of their cocoa sales is less than IDR 500,000.
- A quarter of the farmers (25%) negotiate with the buyer of cocoa regarding the price per kg.
- Ninety-eight (98%) percent of the farmers receive cash payments for their cocoa sales.
- Eighty-one percent of the farmers (81%) sell cocoa to individual collectors/traders.

Figure 2: Paper Survey Data Collection



- Fifty-five percent (**55%**) of sale transactions reported by farmers took place at a collector's facility.
- Sixty-nine percent (**69%**) of the farmers reported they generate income from sources apart from cocoa harvesting. Most of the farmers (**90%**) received this income in cash. Moreover, seventy (**70%**) percent of this income was received at home. Most of the farmers (**84%**) received approximately 1-12 other income payments in the past year and **31%** reported receiving on average less than IDR 500,000 per transaction in other income payments.

#### 4. Expenses and Bill Payments

- Farmers reported they regularly incur expenses to meet their daily needs for food and non-food essentials.
- Payment by cash (**97%**) was reported as the most common form of bill payment.
- Farmers indicated they pay bills on a monthly basis (**56%**) and on a daily basis (**53%**).
- The majority of the farmers (**67%**) paid bills directly from their homes to service providers who come to their homes to collect payments.

#### 5. Money Transfers and Remittances

- Less than one third of the farmers (**27%**) reported they sent money to their family members or friends (living within or outside the country).
- Of those who sent money, money was sent on a monthly (**47%**) or annual basis (**46%**) with an average transaction size of less than IDR 500,000.
- Farmers transferred money using offices of Kantor Pos (the Post Office) and bank branches (mostly banks BRI and BNI). The most common mode of receiving money was through bank accounts (**67%**).
- Two-thirds (**66%**) of the farmers reported that they have never received money from their family members/friends. Farmers who did receive money reported receiving the money on an annual (**23%**) or monthly (**10%**) basis with an average transaction size of less than IDR 500,000.

#### 6. Mobile Phone Ownership and Usage

- Sixty-seven percent (**67%**) of the farmers surveyed own mobile phones.
- Out of those farmers who did not own mobile phones, **79%** reported that a family member did own a mobile phone.
- Farmers in the older age group (51years and older) did not use mobiles phones as much as those in younger age groups.

- Of the farmers who own mobile phones, **89%** of farmers could send text messages (SMS) and **92%** of farmers could receive and read text messages.
- Most of the farmers (approximately **87%**) buy airtime from the airtime seller located in the neighborhood. On an average, most of the farmers (**87%**) spend less than IDR 50,000 on airtime per month.

## 7. Receptivity to Mobile Financial Services

- Two thirds of the farmers surveyed (**67%**) expressed a willingness to use mobile financial services for their financial transactions.
- Seventy-five percent (**75%**) of the farmers believe that mobile financial services will save them time and provide a convenient way to conduct their financial transactions.
- Farmers indicated they would pay a maximum of IDR 5,000 for withdrawal transactions using mobile financial services and no more than IDR 2,500 to pay electric bills.
- Of the farmers willing to use mobile financial services, **86%** are also willing to use agents for cash-in and cash-out transactions.
- Twenty-eight (**28%**) of farmers prefer farmers' groups and the village office as preferable mobile money agents.
- Seventeen percent (**17%**) of farmers preferred cocoa collectors as mobile money agents.
- Farmers do feel there is a chance of agents committing fraud or rejecting their requests for withdrawals due to unavailability of cash/liquidity at the agent level.
- Safety of money stored on the mobile phone was one of the major concerns of framers – loss of funds if the phone is lost or hacked.

## Comparison between Paper and Mobile Based Surveys

An additional objective of this research study was to provide a comparison of the use of a mobile phone based data collection method with a paper based data collection method. The survey pool was divided equally with half of the surveys administered using the mobile data collection tool and the remaining half administered with paper surveys. Results from each method were uploaded for data analysis. The key findings of the comparative techniques include:

- The mobile-based survey collection method was superior in terms of average interview length and data quality and control.
- The mobile-based collection method was more expensive to administer if the cost of purchasing the mobile phones is included.
- In this research study, mobile phone based data collection required additional training of enumerators on how to use the mobile phone to conduct the surveys.

- If the overall benefits are considered and the cost of mobile phones is apportioned over the useful life of the devices, mobile-based survey administration proves to be less expensive.

## SECTION 1: INTRODUCTION

### 1.1 Background

This research study was conducted by *MicroSave* in consultation and under contract with the USAID e-MITRA program dedicated to Advancing Mobile Financial Services in Indonesia and the USAID funded program AMARTA II.<sup>1</sup> The findings of the study will help identify ways to increase access to financial services for cocoa farmers using the mobile phone. This study is designed to be used by mobile financial services providers to develop strategies to design products and offerings that can meet the needs of cocoa farmers and those participating in the cocoa value chain on Sulawesi Island and serve as an example for other agricultural commodities.

### 1.2 Research Objectives

The overarching objective of this research study is to understand the financial behaviors and mobile phone usage patterns of cocoa farmers on Sulawesi Island. Specifically, the study generated information about the cocoa farmers on:

- Demographic characteristics
- Access to and demand for financial services
- Savings and investment patterns
- Borrowing and credit behavior
- Income from cocoa and other sources
- Household expenditures and bill payments
- Money transfer and remittances
- Usage of mobile phones
- Receptivity to mobile financial services

An additional objective of this research study was to provide a comparison of the use of a mobile phone based data collection method with a paper based data collection method.

Organization of the Report

### 1.3 Organization of the Report

Sections 1 and 2 introduce the background and objectives of the research study and outline the research method. Sections 3 through 8 discuss the main findings. Section 9 compares the mobile-based survey and paper-based survey collection methods. Section 10 presents the annexures. Results from focus group discussions (FGDs) are highlighted wherever applicable (in the form of descriptive findings). The findings are presented using charts and tables with discussion and comments. Please note that some charts and figures may not add up to 100% due to the multiple answers allowed for certain questions. The questionnaire is included in its entirety in the Annexure. Certain sections (section 3, 4, 5, 6, 7, and 8) contain a segment called “Considerations for Product Development”. These segments detail key messages from the research that are important for the development of mobile financial services products, as well as marketing and adoption strategies.

## SECTION 2: RESEARCH METHOD

### 2.1 Study Design

This research study used both qualitative and quantitative research designs to collect data. The researchers used a structured questionnaire and carried out four FGDs to collect quantitative data and qualitative data respectively. Overall, a sample of 549 respondents was selected (based on 95% confidence level with  $\pm 4.17$  percentage points of margin of error) from the two districts with a total approximate population of 80,000 cocoa farmers. *MicroSave* undertook the quantitative survey with the assistance of Score Institute (Sulawesi Cocoa Research and Development). Score Institute provided the enumerators and a field supervisor who have experience working with cocoa farmers. Score Institute also assisted in arranging data of cocoa farmers for the two districts.

A three stage random sampling technique was used for selection of respondents for this research study as described below. This ensured an equal chance of selection of each farmer household for the survey in the target area.

- **Stage 1:** Since the research study was to be conducted in two districts, as a first step cocoa producing sub-districts falling under both the districts of Luwu and Polewali Mandar were purposely selected. Based on the data gathered from different sources<sup>2</sup>, 8 sub-districts in Luwu and 16 sub-districts in Polewali Mandar, were found to have high concentrations of cocoa farmers. To ensure cost effectiveness and efficiency, 4-5 sub-districts were randomly selected from each district.
- **Stage 2:** 1 to 8 villages were randomly selected from each selected sub-district, depending on the number of villages per sub-district as well as the concentration of cocoa farmers.
- **Stage 3:** From each village, 4 to 16 farmers were randomly selected. Steps were taken to ensure that the number of cocoa farmers in each village was proportional to the population of cocoa farmers in the villages as well as at the sub-district level.

Four FGDs were conducted with cocoa farmers in two districts. Score Institute<sup>3</sup> arranged for the participants in the FGDs. Participants in the FGDs included members of different farmer groups and representation of certified as well as non-certified cocoa producing farmers. On average, each FGD had nine participants. Three FGDs were solely comprised of men farmers and one FGD had

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<sup>1</sup> Agribusiness Marketing and Support Activity (AMARTA) is USAID-funded project and implemented by ACDI/VOCA. The project aims to strengthen the agriculture sector in Indonesia and increase the economic and social well-being of the farmers.

<sup>2</sup> Data provided by Score Institute indicate approximately 80,000 farmers reside and farm in both districts. AMARTA II's operational staff helped confirm the randomly selected sub-districts and villages in cocoa producing areas.

<sup>3</sup> Score Institute is a non-government organization (NGO) established by former staff and trainers of Success Alliance Project (Sustainable Cocoa Extension Services for Smallholders) of ACDI/VOCA. It has an office in Makassar, South Sulawesi and has been assisting more than 1,500 cocoa farmers in South and West Sulawesi including North Luwu sub-district. The project activities carried out by Score Institute include, but are not limited to, research on cocoa production including introduction of Good Application Practices (GAP), trainings of cocoa farmers on the certification process of good quality of cocoa beans through farmers field days, facilitating access to markets through linkages of the cocoa farmer groups with exporters/buyers, and facilitating access to finance for cocoa farmer groups with banks, non-bank financial institutions, and input suppliers.

only women farmers<sup>4</sup>. One of the FGDs' consisted of farmers affiliated with the major cocoa exporting company, PT. Amarjaro. The purpose of FGDs was to understand the financial needs and preferences of farmers and their mobile phone usage. The report contains quotations from the FGDs.

For details on the study areas, please refer to the Annexure.

## 2.2 Survey Instrument

The USAID e-MITRA program and AMARTA II provided *MicroSave* with the first draft of the survey questions (for quantitative research) as well as a suggested FGD guide for qualitative research for *MicroSave's* review and input. *MicroSave*, AMARTA II, e-MITRA staff and USAID reviewed and finalized the questionnaire. The survey was piloted to test and refine the questions. The research team conducted field-testing of the quantitative questionnaire with fifteen cocoa farmers in the Luwu district. Open-ended questions were emphasized for use in the FGDs. *MicroSave's* Research Expert translated the questionnaires into Bahasa Indonesia, which were reviewed by *MicroSave's* Project Head to ensure accurate translation. Enumerators who spoke the local languages were selected to enable use of the local dialects in data collection. Mobile phones were used for half of the quantitative data collection and for the remaining half paper surveys were used to collect data. This equal division of the respondents for each collection method permitted a fair comparison between the two modes of data collection.

## 2.3 Training and Fieldwork

In both districts, *MicroSave* conducted a one-day training session for enumerators to help the enumerators understand the objectives of the research study, learn how to administer the questionnaire and operate the mobile phone functions to administer the mobile-based questionnaire. *MicroSave* began the fieldwork and data collection in each district after the one-day training. Fieldwork took place over a period of two weeks (19 November-01 December 2012).

## 2.4 Data Management

A field supervisor checked the completed questionnaires every day. The field supervisor reviewed all paper-based forms at the time of collection from enumerators for: a) completion of the questionnaires, b) confirmation that all the questions were asked and properly completed, c) adherence to the skip patterns, d) symmetry in the data collected for each questionnaire. When the paper-based forms were not completed as expected, the field supervisor sought clarification from enumerators and provided inputs to the enumerators for future surveys. If the missing information was large or the data required further validation, the field supervisor requested that the enumerators call back or re-visit those respondents. After screening of all forms, data from the paper-based forms was entered using pre-defined codes (later verified by a research expert). For surveys completed with mobile phones, the team leaders verified the entries at regular intervals by logging onto EpiSurveyor's website. Enumerators were given a target minimum number of surveys to complete each day. To ensure the data quality and verify the compliance with established standards of *MicroSave*, the field supervisor and *MicroSave's* research expert performed random field spot checks (5%-distributed among all enumerators).

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<sup>4</sup> Please note that gender related findings could not be made given the small sample size of female farmers.

## 2.5 Sample Characteristics

This research study used a representative sample of the target population of all cocoa farmers in Luwu and Polewali Mandar districts of Sulawesi Island. The survey respondents consisted of 585 cocoa farmers (including 36 respondents from the four FGDs). For quantitative research, the sample included 549 respondents. Ninety percent (90%) of the respondents were male farmers and the remaining 10% were female farmers. Please note that this research study does not provide any gender specific findings due to the low level of representation of female farmers in the sampled population.

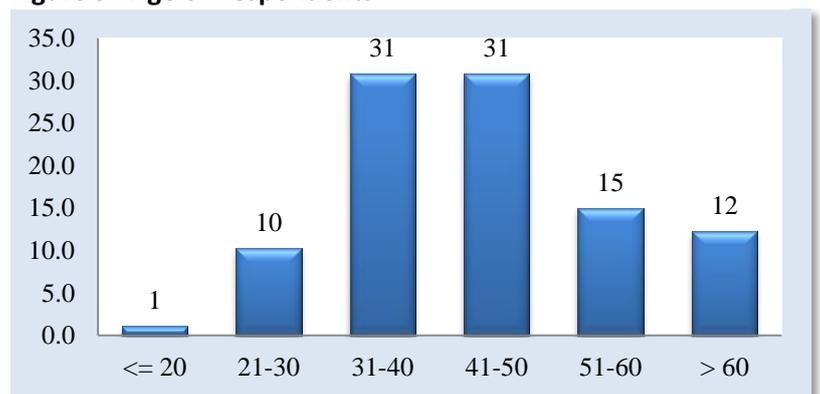
The average household size of the population sampled is 4.5 members with a maximum and minimum range of nine and one family members respectively.

Most of the farmers (98%) possess a KTP (Indonesian National Identification Card). Mobile phone companies require that customers present a KTP to activate a new mobile phone connection. By showing a KTP, people can also apply for mobile wallet accounts such as T-Cash and obtain a higher transaction limit by completing a form and attaching a copy of their KTP.

### Age of Respondents

- Most of the farmers were in the age group of 31-40 years (31%) and 41-50 years (again 31%).
- Twelve percent (12%) of the farmers were in the age group of over 60.

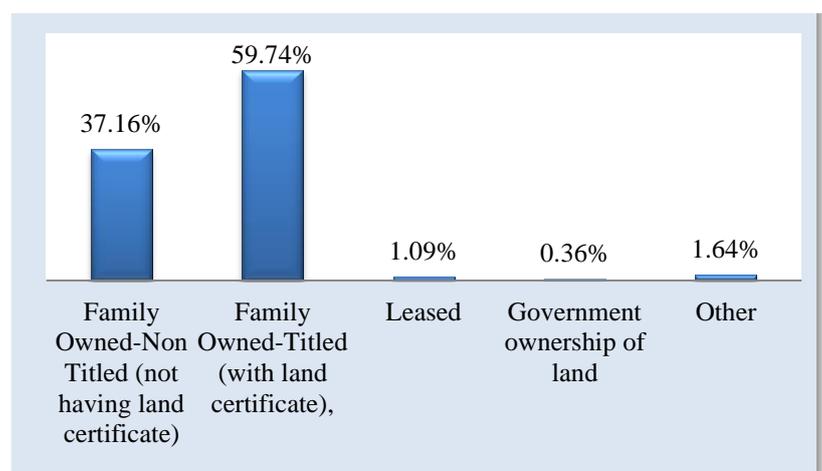
**Figure 3: Age of Respondents**



### Farm Ownership

- The majority of the farmers (59.74%) in the sample have family- owned land with a land certificate<sup>5</sup> (59.74%).
- At the same time, 37.16% of the respondents have family- owned land (37.16%) but without a land certificate.
- In addition, 1.64% (9 in number) of the farmers mentioned other categories of farm ownership. Out of these nine farmers, three of them were only cocoa cultivators and had access to land for a short cultivation time, four farmers had some portion of the

**Figure 4: Status of Farm Ownership**



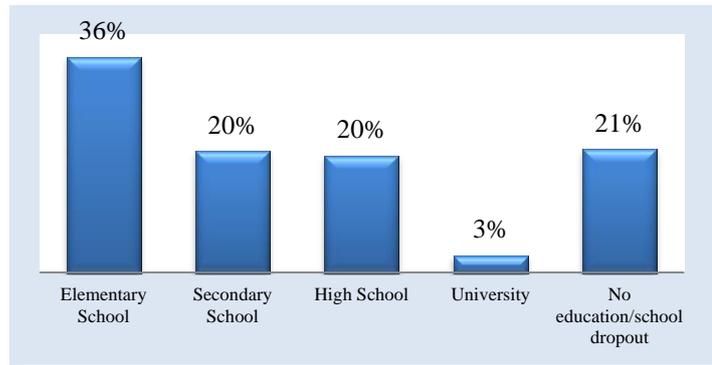
<sup>5</sup> Please note that this certificate refers to any evidence that indicates ownership of the land and may not be actual land certificate issued by a government department.

land certified, and the rest did not have certified land. Two farmers were in the process of obtaining land certificates.

### **Education Level of Farmers**

- Thirty-six percent of the respondents (36%) had educational qualifications up to the Elementary School level.
- Twenty-one percent (21%) of the respondents were school dropouts or had received no formal education, 20% of the respondents had educational qualifications up to the Secondary School level, and the same number of respondents received education up to the High School level. Very few of the respondents (just 3%) had graduated from university.

**Figure 5: Education Level of Respondents**



### SECTION 3: UNDERSTANDING SAVINGS PATTERNS OF COCOA FARMERS

This section describes the savings patterns of cocoa farmers. Savings for this research study was defined as “keeping money/cash aside for future use” to avoid restricting the perceived definition to savings in formal financial institutions. Accordingly, the study takes into account savings with financial institutions as well as cash kept at home.

#### **SUMMARY OF FINDINGS**

- Slightly less than half of the farmers (46%) save using either formal or informal channels.
- Farmers cited low cash inflows as one of the reasons why they do not save.
- Of the farmers who save, 56% save at home for the convenience of access to their money anytime (especially in emergencies). Savings at home is particularly important for farmers who live in remote villages where formal institutions are not available nearby.
- The majority of farmers who save do so to fund their children’s education and school related expenditures (38%). Another significant reason for savings is to pay expenses related to cocoa farming.
- Of those who save, more than half of the farmers (54%) saved in banks or BPRs.
- Farmers who do not save in banks dislike: (i) the terms and conditions (including the documentation requirements) imposed by banks to open a bank account, (ii) the distance of the bank branches (and the corresponding loss of productive time and high transportation costs to reach the bank), (iii) the long queues of customers in the bank branches, and (iv) the monthly charges imposed by the banks to maintain a savings account.

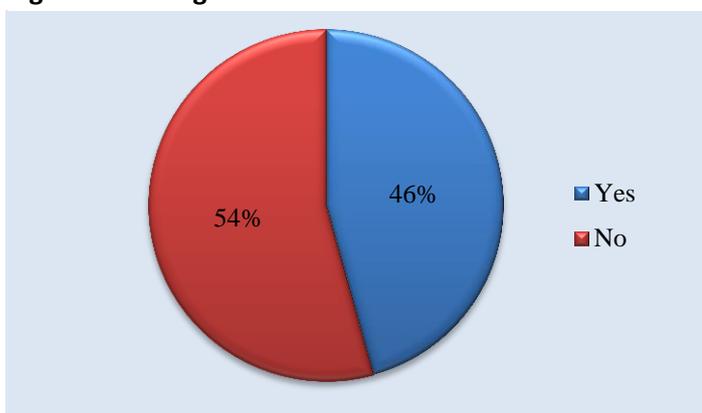
#### **CONSIDERATIONS FOR PRODUCT DEVELOPMENT/RECOMMENDATIONS**

- Farmers would like to save with formal financial institutions that simplify their procedures, open branches in their villages or offer doorstep services, provide attractive interest rates, and lower transaction charges.
- Farmers consider banks as the most trusted and secure financial service providers.
- Farmers prefer small value transactions.

### 3.1 Saving Status

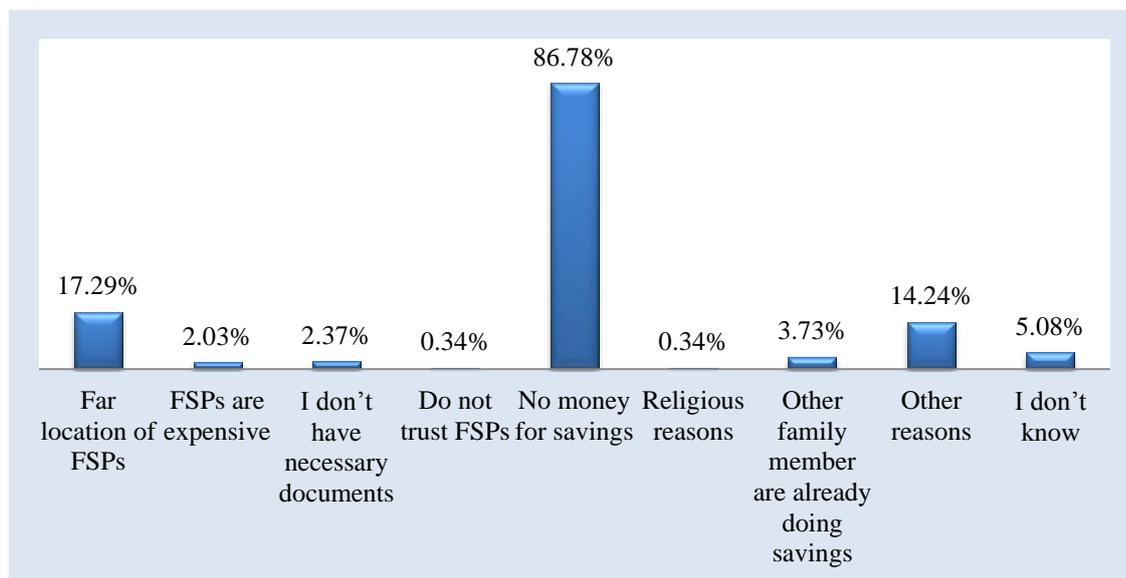
- Slightly less than half of the farmers (46 %) save using either formal or informal channels.
- The majority of farmers (54%) reported that they do not save at any formal source or at home.

**Figure 6: Saving Status of Farmers**



Farmers cited low cash inflows as one of the reasons why they do not save (approximately 87% of the farmers stated this reason). Farmers attribute their current inability to save to a significant drop in cocoa production caused by crop damage from pests (a few farmers reported they have migrated to other crops such as corn; however, the revenue is not as good as cocoa). Farmers also cited the distance between the village and financial service providers as a reason for not saving (17.29% of farmers stated this reason). Fewer farmers (14.24%) stated reasons other than those mentioned in the questionnaire for not saving, these answers were captured separately. The reasons included a lack of discipline to save and use of the money for the purchase of assets—land in most instances. Farmers view the purchase of assets, such as land, as a form of investment. In some cases, farmers reported spending their entire savings on the purchase of land, rendering them unable to save further.

**Figure 7: Why Farmers Do Not Save**



### 3.2 Reasons for Saving

Reasons for savings were recorded only for those respondents who reported saving. The majority of farmers who save do so to meet their children's education and school related expenditures (38%). Farmers mentioned their aspirations to send their children to neighboring cities to receive higher education from large universities. For elementary and junior high school, the farmers do not consider the tuition fees as burdensome because of the free education programs provided by the Government of Indonesia through the Ministry of Education. However, other expenses such as transportation costs (transportation costs vary as per the distance of the school from the farmer's house), purchasing school uniforms and book fees are major expenditures of the farmer's household income.

Another significant reason farmers cited for saving is to pay expenses related to cocoa farming (including expenses to purchase inputs such as fertilizers and pesticides as well as for general farm

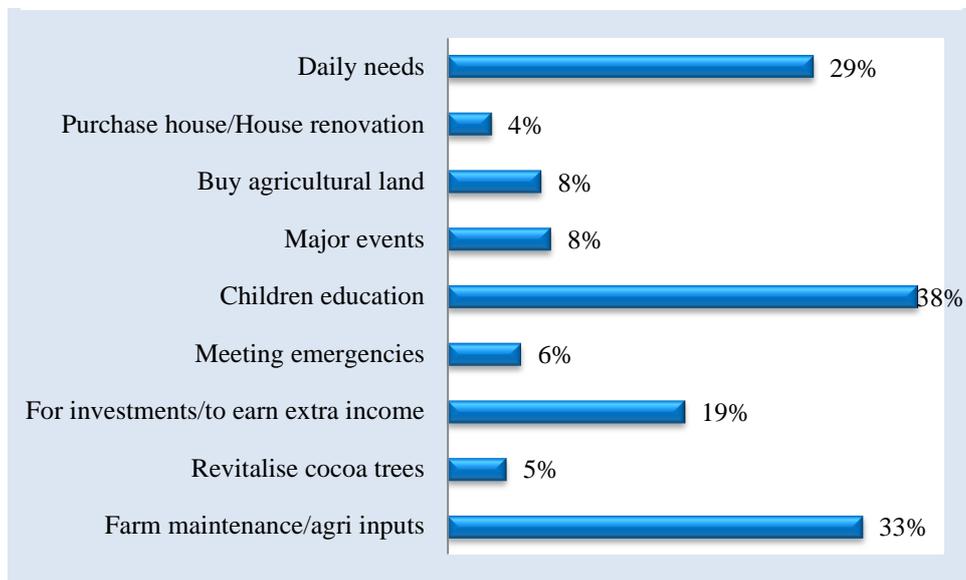
maintenance-33% of the farmers cited this reason). Farmers generally prefer buying fertilizers in large quantities after the sale of cocoa and stocking the fertilizer in their homes.

The other reason for savings was to meet daily needs related to food, clothing, and other non-food essentials (29%). When the harvest is low and the income from cocoa produce is not sufficient, farmers reported they often use their savings for food related expenditures.

Few farmers save to earn extra income or to make investments. The qualitative research indicated that these farmers often buy cocoa for trading purpose to generate additional income.

Major events that require savings include trips to Haj, birth and marriage related events. Savings to meet emergencies includes expenses arising out of health related events or natural calamities.

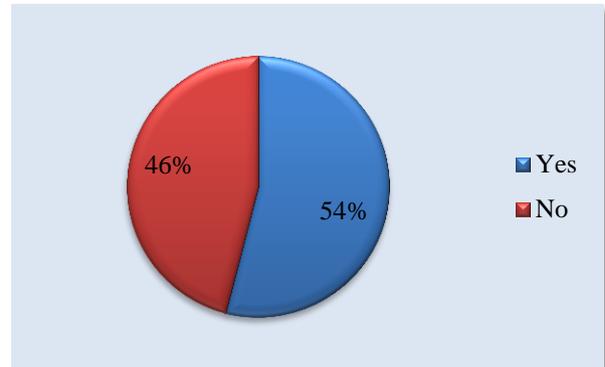
**Figure 8: Why Farmers Save**



### 3.3 Savings with Formal Financial Institutions

- Of those who save, more than half of the farmers (54%) saved in banks or BPRs.
- Other farmers (46%) saved in semi-formal and informal channels.
- 99% of farmers who agreed to save in banks also save in semi-formal and informal channels.

Figure 9: Savings with Banks/BPRs



Some of the formal financial institutions that offer savings services to the farmers and are active in Luwu and Polewali Mandar districts are BRI (which has the largest presence and is the most popular bank among the farmers), BNI, Mandiri, Btpn, Panin, Danamon, Bank Muamalat and BPD. Formal financial institutions are generally located in the main city areas (usually at the sub-district level). Farmers often travel long distances (15-20 kms approximately) to access the services of banks. It is interesting to note that farmers who use the services of banks often have their own transportation vehicles. This highlights that easy access to banks is an important factor for using banking services. Farmers generally prefer to conduct high value transactions with banks. In one of the FGDs, it was found that farmers saved with Bank Muamalat (a sharia-based bank) using a Post Office's branch. Farmers travel to Kantor Pos to make deposits and withdrawals, as its branches are generally at a convenient distance compared to the bank branches.

"We, farmers, only know how to work in the field. It is difficult for us to fill up all those papers while doing transactions in banks."

Farmers who save in banks do so for the security and protection of their savings. Farmers who do not save in banks dislike: (i) the terms and conditions (including the documentation requirements) imposed by banks to open a bank account, (ii) the distance of the bank branches (and the corresponding loss of productive time and high transportation costs to reach the bank), (iii) the long

"If bank exists in our village, we will save even a small amount. Right now, if not one million IDR, we won't go to banks."

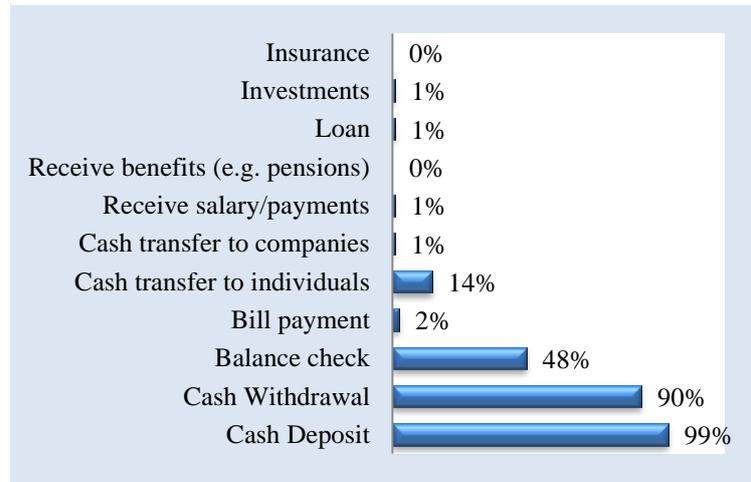
"Savings in bank is not a worthy practice. Banks are far and the queuing is long. And the charges are high. We will suddenly realise that we don't have money anymore because of all those charges."

queues of customers in the bank branches, and (iv) the monthly charges imposed by the banks to maintain the savings account. Farmers believe that interest rates offered by the banks are not attractive and often are lower than the monthly account maintenance charges- thus resulting in the depletion of their principal balance and the loss of hard-earned money. Farmers who do not save with banks have a perception that banks only accept high value deposit transactions.

### 3.4 Use of Financial Services Offered by Banks

For farmers who save in banks, cash deposits, and cash withdrawals (99% and 90% of sample farmers respectively) are the most commonly used bank account services. Forty-eight percent (48%) of farmers use banking services to check their account balance (how much money is there in the account) and 14% of the farmers use their bank accounts to transfer funds to other individuals. A very small percentage of farmers (2%) use their bank accounts for bill payment.

Figure 10: Use of Financial Services Offered by Banks

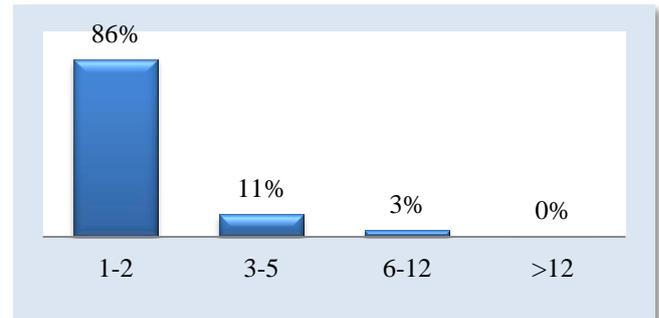


### 3.5 Number of Deposit and Withdrawal Transactions

Farmers with bank accounts reported that they make more withdrawals than deposits. A significant percentage, (86%) generally make 1-2 withdrawals per month.

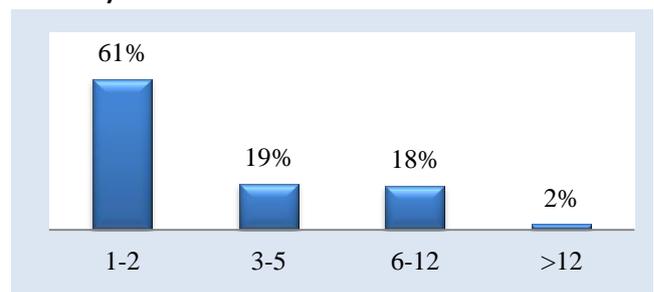
“We save at home because banks are quite far from our house.”

Figure 11: Number of Withdrawal Transactions (per month)



Most of the farmers reported making just 1-2 deposits every six months.

Figure 12: Number of Deposit Transactions (per six months)



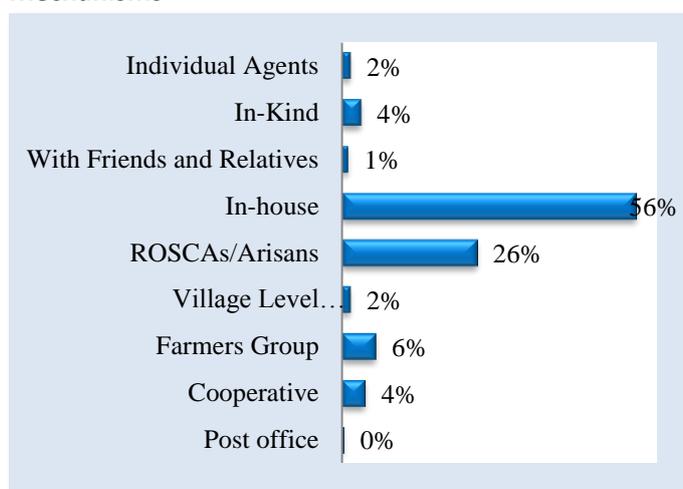
### 3.6 Place for Deposit and Withdrawal Transactions

For farmers who have bank accounts, deposit transactions are mostly performed in the bank branches (99% of farmers stated this) whereas, for withdrawal transactions, farmers use both bank branches (73%) and ATMs (24%). All farmers who save in bank have ATM cards linked to their accounts.

### 3.7 Savings with Semi-Formal Financial Institutions and Informal Channels

Of the farmers who save, 56% save at home for the convenience of access to their money anytime (especially in emergencies). Savings at home is particularly important for farmers who live in remote villages where formal institutions are not available nearby. One reason farmers save at home is to avoid the transportation costs of travelling to a bank branch or financial institution. However, farmers reported they are fully aware of the challenges of saving at home including the risk of losing cash and spending it unnecessarily. Saving cash at home also is commonly used to engage in trade in cocoa plantations. Farmers wait for the opportunity whenever the owner of a cocoa plantation is in need of money. Farmers then use all of their savings kept at home to provide a loan to the owner of a cocoa plantation. The arrangement permits the person offering the loan to farm the cocoa plantation and retain the earnings from the cocoa harvest. The borrower gets the ownership of land once s/he repays the loan.

**Figure 13: Savings in Semi-Formal and Informal Mechanisms**



A significant number of farmers also save in

ROSCAs/Arisans (26%) and a few of them (6%) prefer saving in farmers’ groups. In the FGDs, it was found that saving in Arisans and Farmers’ Groups is prevalent among the farmers (in the earlier days, farmers’ groups were more common but since the decline in the cocoa harvest, the frequency of meetings declined as did their savings and internal lending activity). Each Arisan or farmer group has its own modus operandi. Generally, in a farmers’ group, after the sale of cocoa, all the farmers contribute a fixed amount. These savings are used primarily to purchase fertilizers.

Internal lending to members also takes place and the surplus amount is generally kept with the leader of the farmers’ group (often in a bank account). Arisans are particularly common among the women farmers. They save a fixed amount (ranging from IDR 20,000-50,000 per person) every month in a group of more than 10 people. Cash withdrawals depend on the number of participants and frequency of the meetings. Generally, they will withdraw the cash on a rotating basis through a lottery system. Members of an Arisan cannot withdraw money until their names come up in the lottery system. Therefore, farmers have to show restraint when participating in Arisans. In many Arisans, the withdrawals take place only two times a year (at the time of major harvesting of the cocoa produce). In such Arisans, members have to wait for a long period (which could be a minimum of five years depending on the size of group) to receive the mobilized amount. Some of the Arisans focus on in-kind savings. Each member in the group contributes a certain amount of food items (for example, 5 litres of coconut oil or 5-10 kgs of wheat flour, etc.). This type of Arisan is used to help families, particularly for special events.

**Figure 14: Women Discuss Savings in FGD**



In the FGDs it was found that a few of the women farmers save through possession of gold. For women, gold serves a dual purpose: savings as well as an ornament. In an emergency, gold can be easily mortgaged for loans in the nearby pawnshops. Farmers normally prefer Pegadaian, a government institution, for this purpose (please see the next section for more information on pawnshops).

## SECTION 4: UNDERSTANDING CREDIT BEHAVIOR OF FARMERS

This section discusses the credit behavior of cocoa farmers including the reasons for using credit and the preferred sources of credit. Findings also include informal channels for borrowing.

### **SUMMARY OF FINDINGS**

- About one-third (36%) of the farmers reported that they borrow money.
- Forty-eight percent (48%) of the farmers who used credit utilized it for cocoa farming related requirements.
- Banks and cocoa collectors are the major sources of credit for farmers. Farmers usually prefer banks only to access lending under any of the government programmes such as KUR, PNPM, etc. BRI has a larger presence in the region and this bank's name appeared in all of the FGD sessions. Farmers who borrow from banks continue to do so because they are used to the lending process of the banks and obtaining a second loan is easier since the bank is familiar with the farmer's credit history.
- Farmers generally prefer to borrow from collectors/traders (such as banks, farmers' group, pawnshops, etc.). Some of the reasons cited for this preference are: (i) collectors do not charge interest rates, (ii) loans are available without any collateral, and (iii) repayment of loans from collectors is easy, as there generally are no terms and conditions.

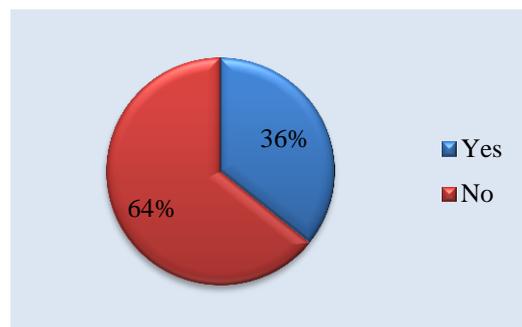
### **CONSIDERATIONS FOR PRODUCT DEVELOPMENT/RECOMMENDATIONS**

- Unlike cocoa collectors, farmers believe that banks could easily meet their credit requirements because such institutions usually have huge sources of funds.
- High interest rate, collateral requirements and the terms and conditions are a few of the reasons why farmers do not want to borrow from private commercial banks.

#### 4.1 Loan Status of Farmers

About one-third (36%) of the farmers reported that they borrow money; the remaining majority (64%) reported that they do not borrow from either formal or informal sources. In the FGDs, it was found that farmers take loans only when it is required.

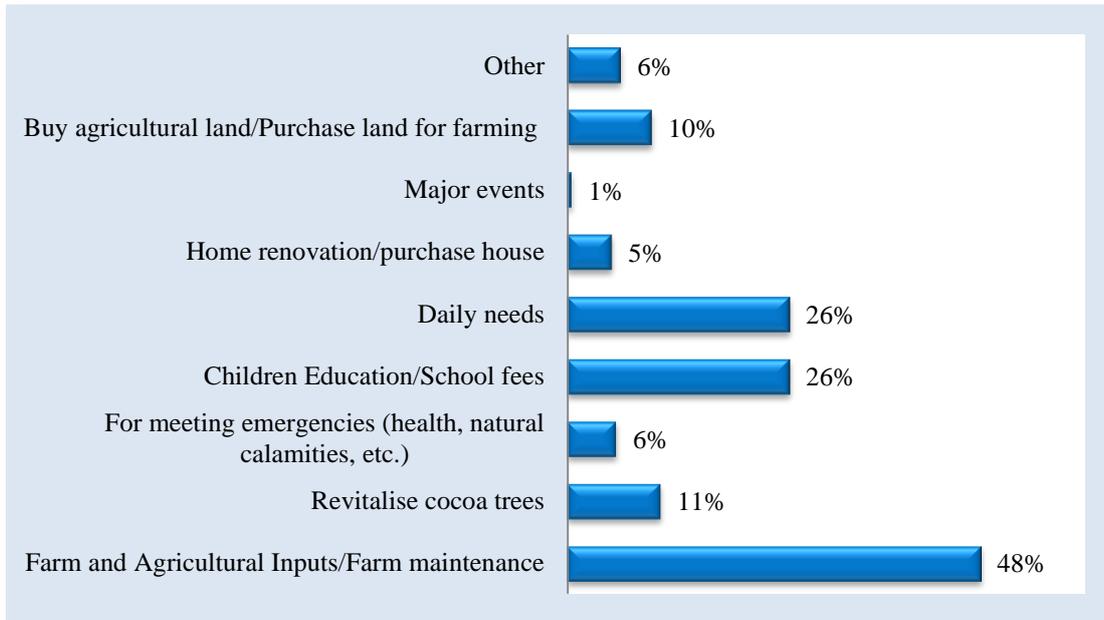
Figure 15: Loan Status of Farmers



#### 4.2 Purpose of Taking Loans

Forty-eight percent (48%) of the farmers use the borrowed funds for cocoa farming related requirements. Other pressing needs of farmers for which they borrow include children's education (26%) and the purchase of daily needs such as food and non-food essentials (26%).

**Figure 16: Purpose of Obtaining Loans**



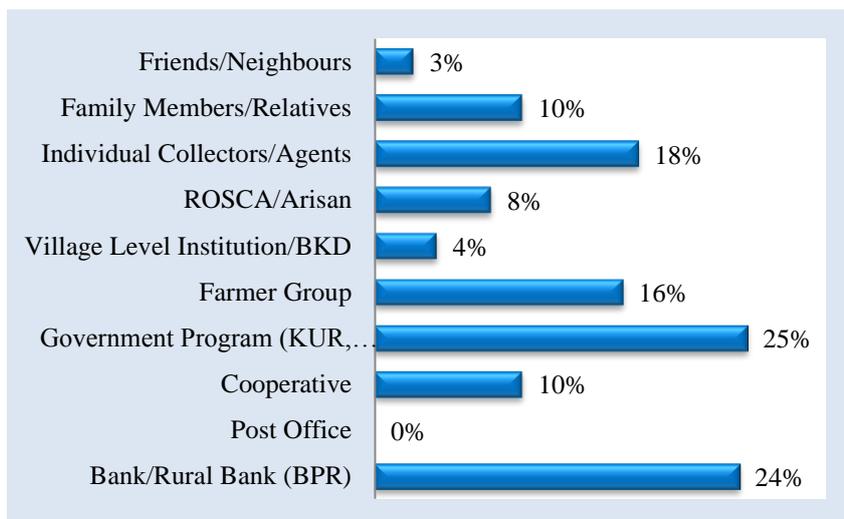
### 4.3 Borrowing Source

Farmers borrow from diverse credit sources as shown in Figure 17. Banks and collectors are the major sources of credit for farmers. Lead firms to whom farmers sell their cocoa produce do not provide loans.

#### ***Borrowing from Banks (including borrowing under government programs)***

Farmers preferred banks for borrowing *only* under government programs such as KUR, PNPM, etc.

**Figure 17: Sources for Loans**



BRI has a large presence and its name appeared in all of the FGD sessions. BRI offers farmers loans at subsidized interest rates (under the Government’s KUR program that provides financial support to farmers and MSMEs). Farmers have to provide collateral even for the loans obtained under KUR program. Farmers who borrow money from banks continue to do so because they have become used to the lending process of the banks and obtaining a

second loan is quite easy as the bank is familiar with the farmer’s credit history. According to farmers, banks have the capacity to meet their loan requirements as such institutions have huge source of funds. It usually takes one week to receive the loan proceeds from the date of application. Farmers reported that they do not borrow from banks other than BRI because of the higher interest rates, collateral requirements and the terms and conditions.

Loans provided under PNPM, a community development project program established by the Government of Indonesia, are most common among women farmers. The loans are offered to female groups based on their credit history established under the same program. The average loan amount of IDR 10 million (per group) is offered for a period of one year. Women farmers prefer this source of credit because of the easy terms and conditions (installment size and longer loan tenure) as well as lower interest rates. Repayment is made in the form of equal monthly installments. Farmers believe that loans from PNPM cannot be used for emergency purposes because they can apply for a loan only once a year. Please note that the loans under this program are channeled through government-owned banks.

“Only those with good business and capital go to banks for additional funding.”

### ***Borrowing from Collectors***<sup>6</sup>

In the FGDs, farmers expressed a preference for borrowing from collectors/traders over other possible sources (such as banks, farmer’s group, pawnshop, etc.). Some of the reasons for this preference are: (i) collectors do not charge interest rates, (ii) loans are easily available without any collateral, and (iii) repayment of loans from collectors is easy, as do not generally have any terms and conditions. Often the farmer decides the repayment terms. Collectors are flexible in terms of accepting repayments. Collectors have good knowledge about the cocoa harvest and if there are times when the output of cocoa is not sufficient, collectors do not force repayment of a loan. Collectors usually do not insist on any formal

documentation like passbooks, slips, etc. for a loan. Farmers mentioned that both farmers and collectors somehow remember the amount of transactions. However, collectors are generally prudent in disbursing the loan amount, as they are aware of each farmer’s land area and the status of cocoa cultivation. Collectors and farmers have built business partnerships over the years and trust each other. There is a common understanding (implicit contracts) between both parties that the final cocoa produce will eventually be sold to the collector. Repayment of the loans is not generally made through payments; it is deducted from the value of cocoa sales. On average, farmers mentioned that the size of loans from collectors varies from IDR 1-2 million depending on each farmer’s requirements. The loan size used to be quite high (IDR 10-20 million) in prior years because of the good harvest of cocoa. As the output of cocoa has declined

**Figure 18: FGD with Farmers**



“Borrowing from collectors is easy. We only need to ask them to deduct loan instalments from cocoa payment.”

<sup>6</sup> Collectors are the intermediaries in the cocoa value chain who source cocoa produce from the farmers. These collectors are generally from the same villages where farmers practice cocoa cultivation. Collectors sell their procurement to bigger traders/lead firms.

in recent years, so has the need for funds. Farmers are of the opinion that there are occasions where the collector is not able to meet their credit requirements because of insufficient availability of funds.

Farmers know that collectors offer loans because they have business interest in the cocoa. Farmers understand that sometimes collectors do not offer them the market price of cocoa produce because the deduction in the price per kilogram is often termed as fees for loan. Farmers also reported they do not bargain with the collectors at the time of sale of cocoa produce, as they feel obliged towards the collector for issuing the loans. Farmers do not want to breach the implicit contract with the collector as it could affect their reputation in the village as well as their cocoa farming business. Farmers mentioned that when they do not have any outstanding loans they receive the best bargain price of the cocoa produce as they are not obliged to repay the loan to anyone. However, farmers reported that they do not hesitate to take a lower price for their cocoa produce from collectors because they know collectors are the only source of credit for emergency loans.

### ***Borrowing from Farmers' Group (Gapoktan)***

Another famous source of credit is Gapoktan. Gapoktan is a farmers' group with a large number of members (up to 200 farmers). Gapoktan consists of several Poktan or small farmers' groups, each consisting of 20 to 25 farmers. These small groups (each group as a unit) apply for loans to Gapoktan. The leader of a small farmers' group is required to submit his collateral papers (vehicle or land ownership papers) to Gapoktan. There is no formal agreement between the leader who submits his collateral papers and the members of that smaller group, who actually receive the loans (along with the leader). Loans from this source have low interest rates (1.5% per month on a declining rate method). Even non-members can apply for a loan. Loans are generally made in kind - usually in the form of fertilizers - as all the members have a common need for this product for cocoa farming. However, farmers often avoid taking loans from Gapoktan because of the short loan term of six months (loans are available once per season) and the bullet repayment feature (the entire principal amount is due and payable at the end of period). The interest amount is deducted up-front from the loan disbursement (thus they receive less than what they apply for net of the interest charge). Gapoktan on many occasions does not have sufficient quantity of fertilizers to meet the farmers' needs.

### ***"Gadai"- leasing land for loan***

*Gadai* is also a popular form of borrowing. Farmers who need money mortgage their land to another farmer. The farmer who lends the money has the right to earn revenue from the harvest from the land. For the farmer who lends the money, this practice is considered as an investment opportunity and the proceeds from selling cocoa are considered a return on investment. This type of practice usually runs for a fixed time period (1-2 years/2-4 harvest seasons) and after the period is over, the owner of the land repays the loan amount (the entire principal amount is returned without any interest or commission) and regains access to his land. Usually, farmers who do not want to engage in cocoa cultivation (which could be because of several factors such as a fall in cocoa output, price fluctuation of cocoa and opportunity to earn more income in activities other than cocoa cultivation) mortgage their land to other farmers. The arrangement can be of two types: formal as well as informal. In the formal arrangement, there is a written agreement between both parties. In the informal process, an agreement is made in front of village leader. Farmers prefer the informal form of *Gadai* as they do not have to incur the cost of paperwork and it is an easy process. In the case of a formal arrangement, original land certificates are required. The loan amount depends on the size of land (ranging from IDR 2 million to IDR 20 million). The

tenure of loan also varies with the size of loan amount (longer loan tenure for a higher loan size). In this loan, the borrower and landowner do not have the flexibility of prepaying the loan and terminating the contract early even when they have access to money to repay the loan amount. The farmer is required to wait until the full loan and contract period is over.

### ***Borrowing from Pawnshops***

In the FGDs, farmers reported that borrowing from Pegadaian (a pawnshop) is only used by farmers who have physical assets (such as gold/vehicle ownership papers/land ownership papers) to pledge as collateral. The loan amounts vary based on the market value of the pledged assets. Farmers believe that Pegadaian is an expensive source of loans and that these loans lack transparency in terms including pricing. However, Pegadaians provide easy access to loans because of a faster process and minimal requirements: only a KTP along with the asset papers are required to obtain a loan.

### ***Borrowing from Other Sources***

Few farmers borrow from cooperative institutions. Cooperative institutions provide doorstep delivery of financial services, which is a major reason for farmers to use this source. However, cooperative institutions generally charge higher interest rates than other lenders, impose processing fees, require collateral papers, and set weekly loan repayment schedules.

## SECTION 5: INCOME

This section discusses the income patterns of farmers from cocoa and other sources.

### **SUMMARY OF FINDINGS**

- The majority of farmers (81%) sell cocoa to the individual collectors/traders.
- More than half of the farmers (55%) mentioned that transactions for the sale of cocoa occur at the collector's facility.
- The majority of the farmers (62%) receive, on average, between 13-24 payments from cocoa sales every year.
- Slightly more than half of the farmers (51%) report an average transaction size for cocoa sales of less than IDR 500,000.
- A quarter of the respondents (25%) report they negotiate with the buyer of cocoa regarding the price per kg for cocoa.
- Almost all of the farmers (approximately 98%) reported receiving cash payment for cocoa sales. Farmers receive money through bank accounts for large size transactions (mostly in the bank account of farmers' group leaders on behalf of all the farmers).
- Sometimes, collectors do not have enough cash at the time of sales transactions to provide full payment. In such cases, collectors issue a note/receipt to the farmers. Farmers then go to the collectors (usually after 2-3 days) and collect the payment by furnishing the note.
- Collectors always have to deal with the risks of losing cash as they carry large amounts of cash during the peak season to disburse the payments to farmers. Farmers also face risk of losing cash in the transit journey when the produce is sold at a collector's house/facility and they return home with the cash amount.
- When the farmers sell the output to the exporting companies, the payment is always made in cash. When the farmers' group does the sale collectively, the payment is partly made in fertilizers and the remaining amount is paid in cash (but the group as a whole gets the entire payment in cash).
- Sixty-nine percent (69%) of farmers mentioned having an income source apart from cocoa harvesting

### **CONSIDERATIONS FOR PRODUCT DEVELOPMENT/RECOMMENDATIONS**

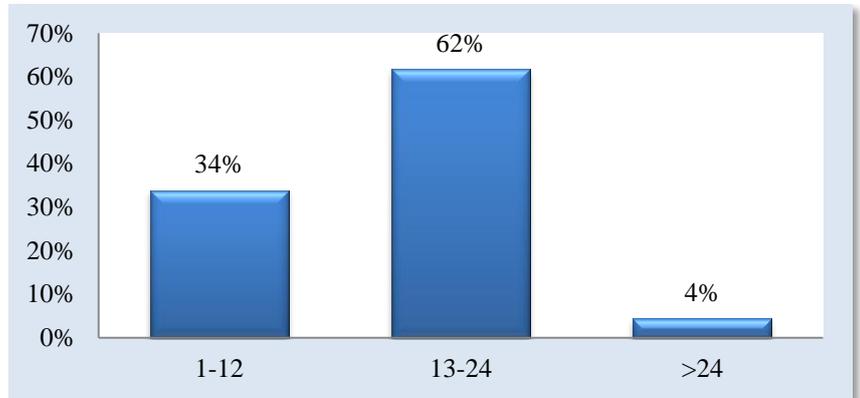
- Mobile Financial Services could help reduce security related risks generally present in cash based transactions.
- Farmers believe that collective marketing of cocoa helps them receive a better market price of the commodity by giving them a better bargaining position.

## 5.1 Income from Cocoa

### 5.1.1 Average Number of Payments Received From Cocoa Sales

The majority of the farmers (62%) receive, on average, between 13-24 payments from cocoa sales every year.

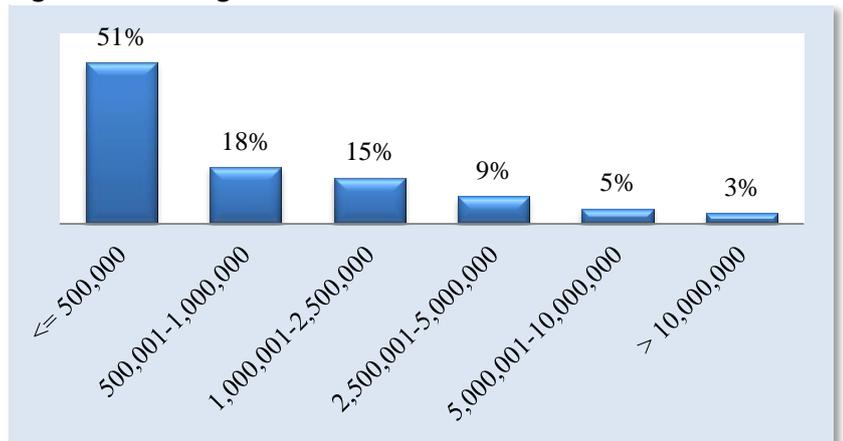
Figure 19: Average Number of Cocoa Sales Payments



### 5.1.2 Average size of Transaction

- Slightly more than half of the farmers (51%) report an average transaction size for cocoa sales of less than IDR 500,000.
- Just 3% of the farmers reported average transaction sizes greater than IDR 10 million.

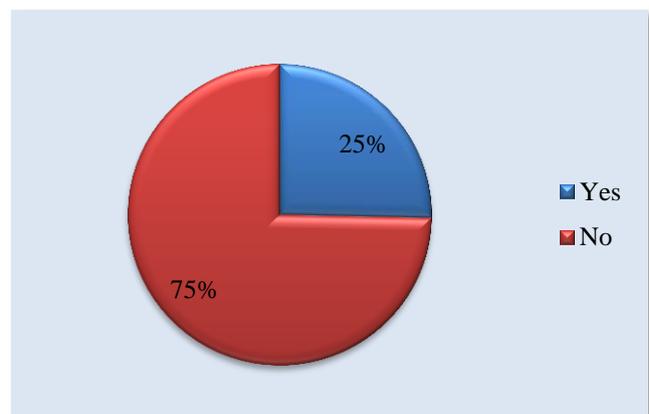
Figure 20: Average Size of Transaction



### 5.1.3 Payment Negotiation

- A quarter of the respondents (25%) report they negotiate with the buyer of cocoa regarding the price per kg.
- Of farmers who negotiate payments, most negotiate individually (99%) and just 1% negotiate through a farmer group.

Figure 21: Negotiation of Payment by Farmers



### 5.1.4 Mode of Payment

Almost all of the farmers (approximately 98%) reported receiving payment of cocoa sales in cash. Only 1.64% of farmers reported receiving payments through bank transfers. There were only two respondents who reported receiving payment as “other”: after two days of the sales and as partial-payments.

In the FGDs, it was reported that large size transactions (more than 5 million IDR) are usually paid via bank transfers (mostly in the bank account of farmers’ group leader on behalf of all the farmers). Sometimes, collectors do not have enough cash at the time of sales transactions to provide full payment. In such cases, collectors issue a note/receipt to the farmers. Farmers then go to the collectors (usually after 2-3 days) and collect the payment by furnishing the note. In one of the FGDs, a trader-farmer mentioned that collectors always have to deal with the risks of losing cash as they carry large amounts of cash during the peak season to disburse the payments to farmers. Farmers also face risk of losing cash in the transit journey when the produce is sold at a collector’s house/facility and they return home with the cash amount. When the farmers sell the output to the exporting companies, the payment is always made in cash. When the farmers’ group does the sale collectively, the payment is partly made in fertilizers to the farmers and the remaining amount is paid in cash (but the group as a whole gets the entire payment in cash).

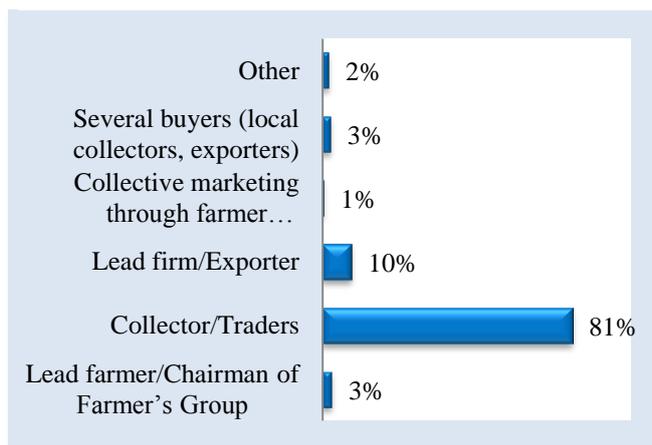
**Figure 22: FGD with Women on Sulawesi**



### 5.1.5 Selling Cocoa Output

- The majority of farmers (81%) sell cocoa to the individual collectors/traders.
- In addition, 49% of the farmers reported they sell to the same person across all seasons/every year.

**Figure 23: Selling Cocoa Output**

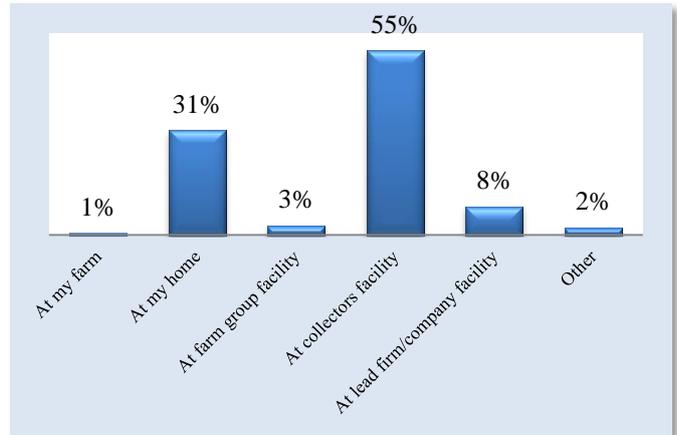


In the FGDs, farmers expressed a preference for the selling of and payment for cocoa to be coordinated in the farmers’ group. Farmers believe that collective marketing of cocoa helps them receive a better market price of the commodity by giving them a better bargaining position. Farmers also mentioned that they deal better with the exporting company/lead firm through a farmers’ group rather than selling individually to collectors.

### 5.1.6 Place of Transaction

- More than half of the farmers (55%) mentioned that transactions for the sale of cocoa occur at the collector’s facility.
- Slightly less than one third (31%) of the farmers reported that cocoa sale transactions occur at their homes.
- Under “other” category, farmers mentioned the main market as a place for selling cocoa.

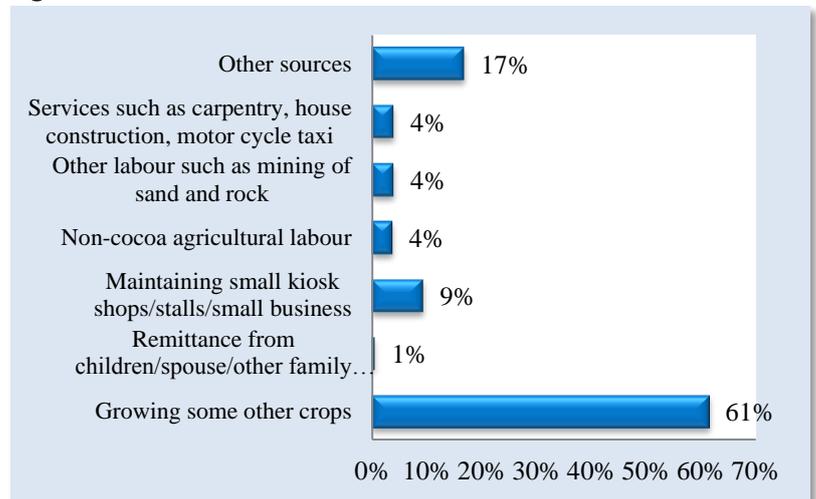
Figure 24: Place of Cocoa Sales Transaction



## 5.2 Other Income and its Sources

- Sixty-nine percent of farmers mentioned having an income source apart from cocoa harvesting.
- Of those who have an additional source of income, 61% mentioned growing crops other than cocoa as the source of that extra income.
- Under “other sources”, buying and selling cocoa, buying and selling fish, and serving as an employee somewhere else were the most popular responses.

Figure 25: Other Income and its Sources



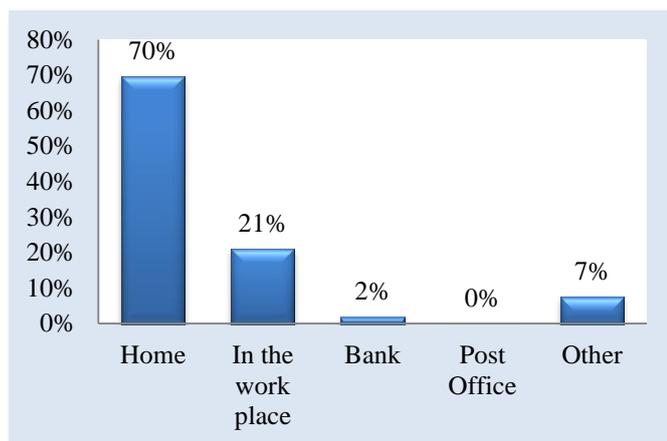
### 5.2.1 Mode of Receiving Other Income

Of all those who have income other than cocoa harvesting, the majority of the farmers (90%) receive this additional income in cash. Nine percent (9%) of those farmers receive other income in the form of goods (in-kind) and the remaining one percent (1%) of farmers receives income via bank transfers.

### 5.2.2 Place of Collecting Other Income

- The majority of farmers (70%) with additional income receive income at home.
- Twenty-one (21%) receive it at their place of work/employment.

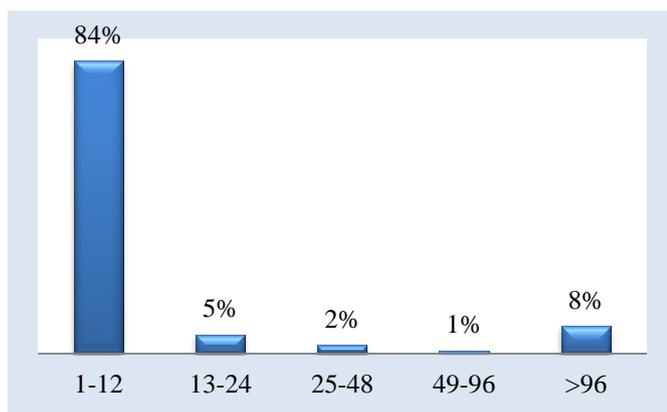
Figure 26: Place of Collecting Other Income



### 5.2.3 Number of Other Income Payments

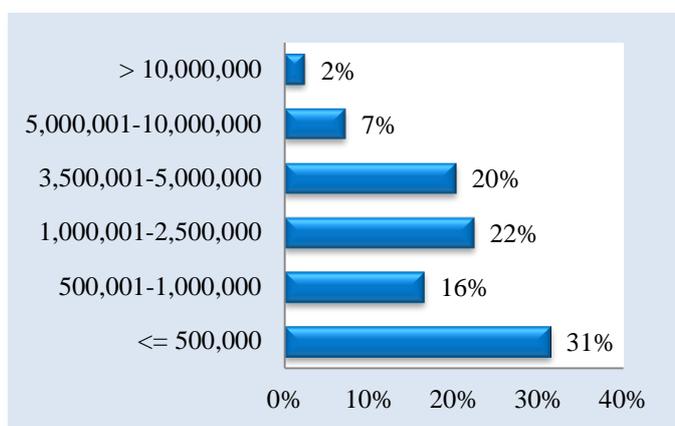
- Most of the farmers (84%) who have an income source other than cocoa farming received approximately 1-12 other income payments in the past one year.
- Few farmers (8%) received more than 96 'other income' payments in the past one year. Generally, these farmers have small kiosks in the villages and derive income from the daily sales of goods.

Figure 27: Number of Other Income Payments



### 5.2.4 Average Size of Transaction for Other Income

Figure 28: Average Size of Transaction for Other Income



Most of the farmers (31%) with outside income reported that the average size of transaction for other income payments was less than 500,000 IDR.

## SECTION 6: EXPENSES AND BILL PAYMENTS

This section details the expenses and bill payments patterns of farmers. These include type of expenses and bill payments made by farmers, mode of payments, frequency of payments and the place/customer service points used for such transactions.

### SUMMARY OF FINDINGS

- The majority of farmers (82%) reported they regularly incur expenses to meet their daily needs for food and non-food essentials.
- Payment by cash (97%) is the most common form of bill payments.
- Farmers pay the majority of their bills on a monthly basis (56%) or daily basis (53%).
- Most respondents (67%) paid bills directly from their homes to service providers who come to their doorstep to collect payments.

### CONSIDERATIONS FOR PRODUCT DEVELOPMENT/RECOMMENDATIONS

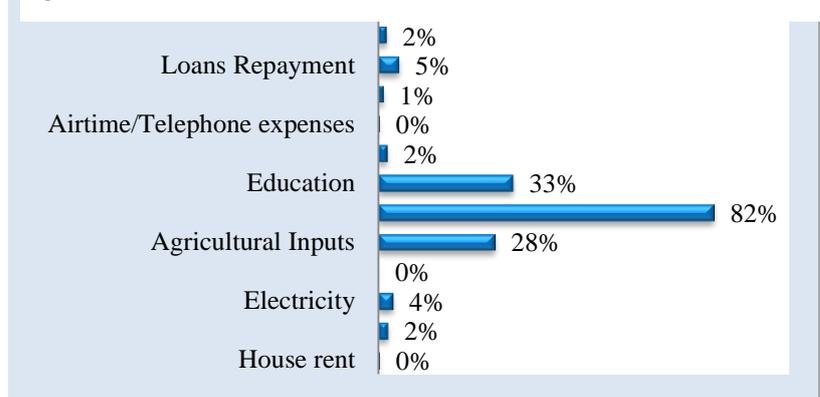
- Farmers expressed no problems with making cash payments. They would appreciate a facility of payments where the charges are lower as in the case of electricity bill payments.
- Farmers appreciate the doorstep services for bill payments.
- Farmers would like to use payment facilities offered by banks, if these institutions opened branches in the villages.

### 6.1 Common Cash Outflows

Farmers regularly incur expenditures for the following requirements:

- Daily needs such as food items and non-food essentials (82%)
- Children's' education (33%)
- Agricultural inputs/fertilizers (28%)
- Loan Repayment (5%)
- Electricity (4%)

**Figure 29: Farmers' Cash Outflows**



In the FGDs, water payments also came up as a type of bill payments. However, water payments are not common among the farmers as very few have access to government water supplies. Most of the residents in the research location use ground water from local wells. In one of the FGD sessions, farmers mentioned making payments for property taxes as well.

### 6.2 Mode of Bill Payments

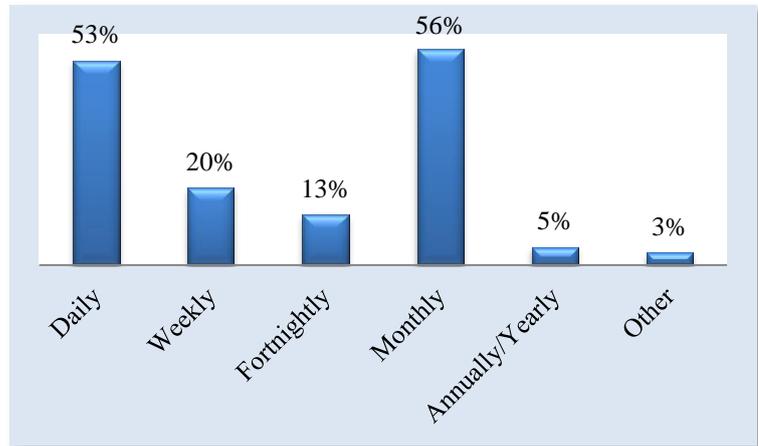
Cash payment (97%) is the most common form of bill payments.

In FGDs, it came out that bill payment through bank transfer is available to farmers but is not a common mode of bill payment. Bank transfers are most commonly used when farmers purchase vehicles and have to make loan repayments to vehicle financing companies.

### 6.3 Frequency of Bill Payments

- Farmers pay the majority of their bills on a monthly basis (56%) or daily basis (53%).
- Under “other” category, farmers mentioned choices like every three months, every four months, and season to season.

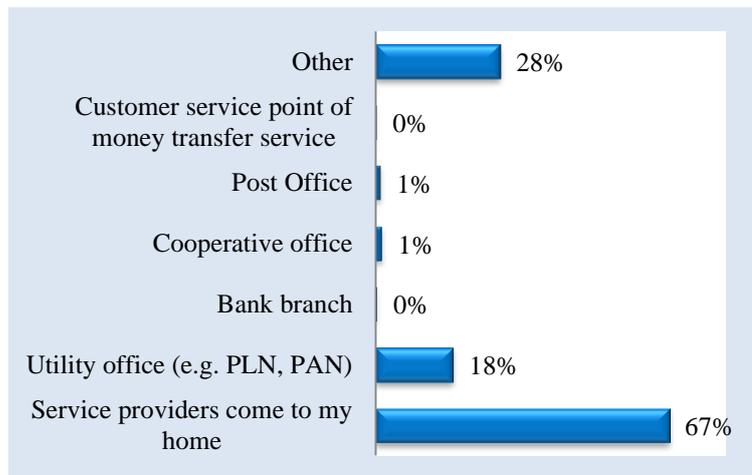
Figure 30: Frequency of Bill Payments



### 6.4 Point of Service for Processing Bill Payments

- Most respondents (67%) make bill payments from their homes to service providers who come to their doorstep to collect payments.
- Twenty-eight percent (28%) of the farmers selected the “other” category for mode of bill payment. The other category included responses such as agent’s location and village head’s house.

Figure 31: Place for Bill Payments



Individual agents (from the local villages) who offer doorstep services collect electricity payments from farmers’ households (PLN, the electricity department, hands over the copies of bills to these individual agents. The PLN staff delivers these bills. Farmers generally pay IDR 1,000-2,000 per transaction as an extra fee to these collector agents. In all of the FGDs, it came out that farmers use the services of agents (and are quite satisfied with the agents) for paying the electricity bills and rarely go to the office of electricity department. Farmers generally incur electricity bills of IDR 20,000-50,000 per month at the household level. Male members of the families generally make such payments. If the farmers are not at home, agents often go away and come back later. Agents do not charge anything extra for these additional visits. In one of the FGDs, farmers expressed the need of having an arrangement with a financial service provider that could offer emergency loans equivalent to the electricity bill amount and pay the bills on their behalf. Farmers could later

repay the emergency loan with some service charge-such arrangements would help them avoid electricity cuts during times of money shortage.

For daily needs, farmers make payments for food items and non-food essentials at the grocery shops (located in the vicinity) directly in cash.

For loans obtained through PNPM program, farmers hand over the cash amount to the group leader residing in the same village. Even for loans obtained through Gapoktan, payments are made in cash to the group leader. When loans are taken in the form of fertilizers from Gapoktan, installment payments are deducted from the sales (of cocoa produce) to the farmers' group.

Payments of agricultural inputs (fertilizers and pesticides) are also made in cash at the counters where farmers purchase these inputs. These counters are known as KUD and sell farm inputs to the farmers. Most of these entities are registered as cooperatives.

School fees are generally paid in cash every month. Generally, children carry school fees along with them. However, the practice of paying directly at the school counter by either of the parents is also common.

For those who have access to government water supplies (PAM is the name of the water department), the families pay the bills through one of the staff of PAM who lives in the same village or a nearby village. Farmers generally pay about IDR 20,000-25,000 for water payments depending on the actual usage.

## SECTION 7: MONEY TRANSFER AND REMITTANCES

This section discusses the use of remittance/money transfer services by the farmers.

### **SUMMARY OF FINDINGS**

- Only one quarter of farmers, (27%) mentioned that they sent money at least once to their family members or friends (living within or outside the country).
- Of farmers who send money, money was most commonly sent on a monthly (47%) or annual basis (46%).
- Most of the farmers who send money (57%) reported an average transaction size of less than IDR 500,000.
- Farmers send money most often using offices of Kantor Pos (post office) and bank branches (mostly BRI and BNI).
- Two-thirds (66%) of the farmers reported that they have never received money from their family members/friends. Farmers who did receive money generally received it on an annual (23%) or monthly (10%) basis with average transaction size of less than IDR 500,000.
- The most common mode for farmers to receive money is through bank accounts (67%).

### **CONSIDERATIONS FOR PRODUCT DEVELOPMENT/RECOMMENDATIONS**

- Farmers would prefer a money transfer process that does not require lengthy documentation. Farmers often have difficulty completing forms and documentation. The long queues further complicate the process.
- The distance of remitting/receiving point is a challenge at present and the farmers would appreciate any facility that helps reduce that challenge.
- Farmers who receive money from abroad are often unaware of the prevailing exchange rates on the day of cash-out transactions and believe the institutions (offering cash-out services) handling the transfers are not transparent about the fees.
- Farmers prefer instant cash-out transactions as they often call each other to confirm the receipt of money. Farmers are also aware of the benefits of intra-bank transactions; such as if the transfers are done electronically money will be received on a real-time basis and without any cost. However, if the transactions are done at a teller's counter, there is a nominal fee charged by the bank.

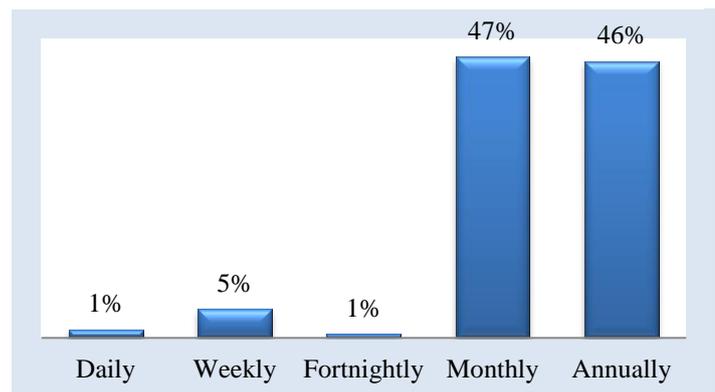
### 7.1 Sending Money

Approximately one quarter of farmers (27%) mentioned that they sent money on at least once occasion to their family members or friends (living within or outside the country).

### 7.2 Frequency of Sending Money

Of farmers who send money, they transfers are made mostly on a monthly (47%) or annual basis (46%).

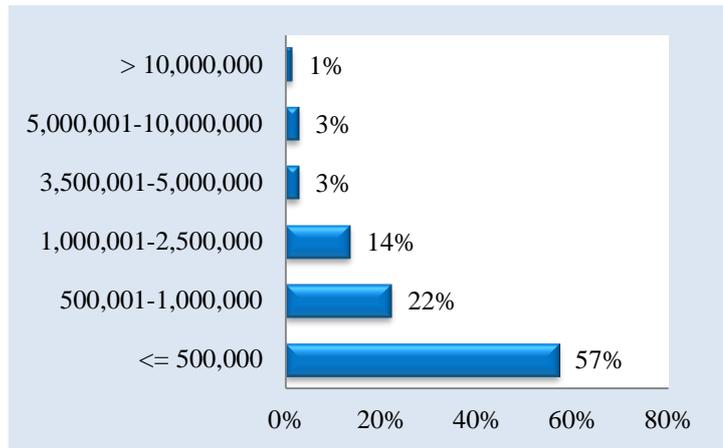
**Figure 32: Frequency of Sending Money**



### 7.3 Average Transaction Size

Most of the farmers who send money (57%) reported an average transaction size of less than IDR 500,000.

**Figure 33: Average Size of Transaction (while sending money)**



### 7.4 Mode of Sending Money

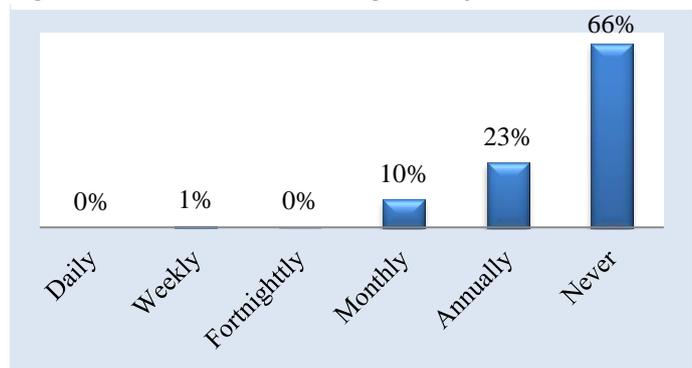
Farmers send money most often using offices of Kantor Pos (post office) and bank branches (mostly BRI and BNI). If the farmer does not have a personal bank account, he/she may use the account of a family member or friend to transfer the money to the destination account number. In all of the FGDs, respondents mentioned they only sent money domestically.

“I hesitate to do transactions in banks and post office because I do not like the paper work. I don’t know what to fill and how to fill.”

### 7.5 Receiving money

- Two-thirds (66%) of the farmers reported that they have never received money from their family members/friends.
- Farmers, who did receive money, generally received it on an annual (23%) or monthly (10%) basis.

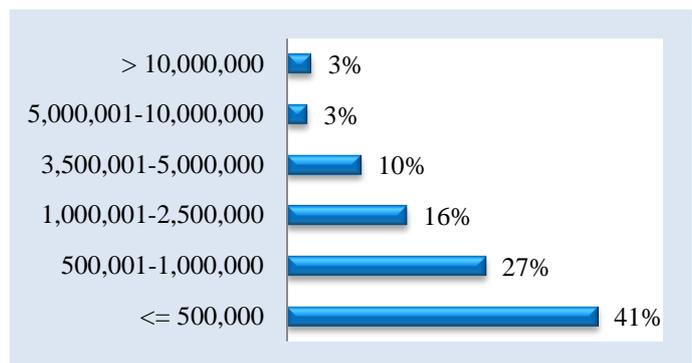
**Figure 34: Status on Receiving Money**



### 7.6 Average Transaction Size (Receiving Money)

Forty-one percent (41%) of farmers who reported receiving money reported an average transaction size of less than IDR 500,000.

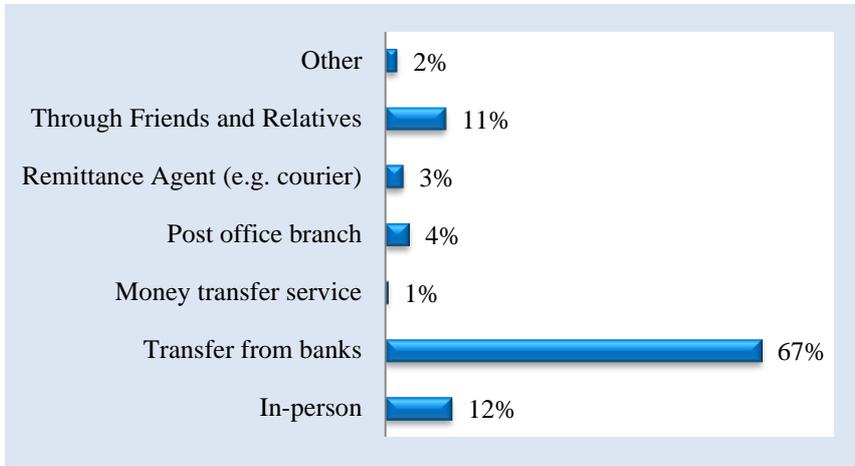
**Figure 35: Average Transaction Size (Receiving Money)**



## 7.7 Mode of Receiving Money

The most common mode for farmers to receive money is through bank accounts (67%). Under other category, farmers (2%) mentioned that they receive money in their friends' bank accounts.

**Figure 36: Mode of Receiving Money**



When a family member sends the money from abroad, it usually takes 3-7 days before the recipient can withdraw money from his bank account.

Farmers also use Kantor Pos (it acts as an agent for Western Union and Money Gram) branches for receiving money. When the international remittances

are received through Kantor Pos, recipients usually have to show a copy of their KTP as well as furnish the SMS code that they would have received from the service provider verifying the transfer.

In one of the FGD sessions, farmers mentioned that if it is a small size transaction, they use the services of courier or bus drivers for domestic transfers. They also send food items along with the cash. Farmers pay on an average IDR 30,000 per transaction as a fee to use this informal channel. The amount charged varies with the size of the transaction and the distance.

“Receiving money from post office is easy. My relative sends me money from Arab Saudi and I can receive it instantly.”

## SECTION 8: MOBILE PHONE USAGE AND POTENTIAL FOR MOBILE MONEY

### **SUMMARY OF FINDINGS**

- More than two-thirds of the farmers (67%) have a mobile phone. Of those farmers who do not have mobile phones, 79% stated that someone else in their family has a mobile phone. Mobile phone use is common among the farmers. Having more than one mobile phone per family is also common (children of farmers are more likely to possess another mobile phone compared to their wives).
- Those farmers who have mobile phones carry them always, even while working in the field.
- Use of SMS (sending and receiving messages) is common among the people
- Ninety-nine percent of farmers who own mobile phones in the sample can make and receive phone calls through a mobile phone.
- Most of the farmers (approximately 87%) buy airtime from the airtime seller located in the neighbourhood.
- Most of the farmers (87%) spend less than IDR 50,000 on purchasing airtime per month.
- All the farmers (100%) surveyed subscribe to Telkomsel, Indonesia's largest and government-owned mobile network operator.
- Two thirds of the farmers (67%) expressed a willingness to adopt mobile money solutions for their financial transactions.
- Of all those who agreed to use mobile money, a large percentage of farmers (86%) also agreed to use agents for cash-in/out transactions. Farmers believe that collectors would be the ideal agents to facilitate mobile money transactions.

### **CONSIDERATIONS FOR PRODUCT DEVELOPMENT/RECOMMENDATIONS**

#### ***Willingness to Use Mobile Money***

- Farmers prefer to try the mobile financial services at least once before relying on the service.
- In a way, farmers are already experiencing similar service. Farmers buy airtime from their friends (mostly airtime sellers) through SMS and pay later for the transactions. Such farmers may be the early adopters of mobile money.
- Unlike using ATMs, older farmers may use mobile financial services more because of the support from other family members who often are more comfortable and familiar with mobile phone technology.
- Farmers want to understand mobile financial services in detail and hear experiences from areas where service is already operational. Farmers would like to have demonstrations of how the service works.

#### ***Choice of Agents***

- Farmers, who already have small grocery shops and sell airtime, could become agents.
- Farmers prefer mobile financial services agents that operate and reside in the same village.
- Farmers suggest that the village head should be required to approve appointment of agents.

#### ***Promotion for Mobile Money Service***

- Farmers believe that service provider will make use of number of advertisements and communication strategies to inform all the villagers about the services and products offered by the mobile money agent.

#### ***Physical Evidence for Mobile Money Transactions***

- Farmers prefer physical evidence of the transactions conducted through mobile phones such as issuance of receipts.
- Farmers would like to have confirmation of the successful transactions so that they do not call the recipient again to confirm the transfer of money.

## Considerations for Product Development/Recommendations...Continued

### **Pricing for Mobile Money**

- Farmers indicated they would pay a maximum of IDR 5,000 per withdrawal transaction to use mobile financial services. Farmers consider this price less expensive than the bank fees because with the introduction of mobile financial services, farmers would be able to save on transportation related costs. It is recommended that mobile financial services providers conduct a thorough costing and pricing exercise before deciding the final costs to borrowers for transactions. Farmers and similar low-income people and groups are generally price sensitive and compare services from different providers before making a final decision.
- Farmers believe that payments for electricity bills should not have a fee of more than IDR 2,500 per transaction with mobile financial services transfer facility.

### **Risk Management**

- Safety of money is one of the major concerns of farmers for financial transactions done through mobile phones. During FGDs, farmers repeatedly expressed concern about the safety of money in case the mobile phone is lost. Farmers would like to have a guarantee from the service provider about the safety of money in case the mobile phone is lost.
- Farmers feel that there is a chance of agents committing fraud and misusing their hard-earned money. Farmers also think that agents might reject their requests for withdrawals due to the unavailability of cash/liquidity at the agent level. *MicroSave* recommends making significant efforts in developing an agent network and ensuring customer education on the product and processes. Agents' compliance with the standard operating procedures must be verified at regular intervals for the best interests of the customer.
- Farmers worry that mobile phones could be hacked and their money could be stolen.
- Farmers believe that financial transactions through mobile phones are not possible if the mobile phones are of older models.
- Farmers using Telkomsel, the largest and government-owned mobile network operator, often experience bad connectivity. Some parts of villages do not have connectivity at all.

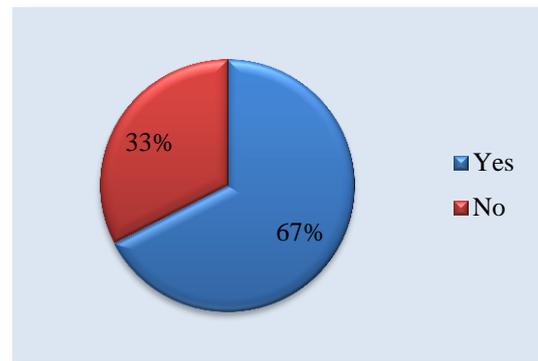
### **Mobile Money Product Development for Cocoa Farmers**

- This research study highlights important points from the perspective of mobile financial services product development for cocoa farmers such as farmers' willingness to adopt mobile financial services platforms, and concerns regarding the use of technology and the associated risks from farmers' perspectives. *MicroSave* recommends a separate market research study be conducted from the perspective of product development (savings product/money transfer/bill payments) that would make use of FGDs as well as Participatory Rapid Appraisal tools (such as Portfolio Attribute Ranking, Relative Preference Ranking, etc.). The dedicated product development approach would allow us to evaluate the needs and preferences of farmers, understand demand and supply issues in detail, and enable comparison between different products used by target clients. Findings from such a study along with the key considerations mentioned in this study would allow the service provider to develop market-led product and delivery systems.

## 8.1 Mobile Ownership

- More than two-thirds of the farmers (67%) have a mobile phone. Of those farmers who do not have mobile phones, 79% stated that someone else in their family has a mobile phone.
- Out of these farmers, 47% of the farmers mentioned that they share the mobile phone with their family members.
- Of farmers who share mobile phones with their family members, only 17% reported they use multiple SIMs (i.e. the farmer and the other family member use different mobile connections/numbers).

**Figure 37: Mobile Ownership among Farmers**

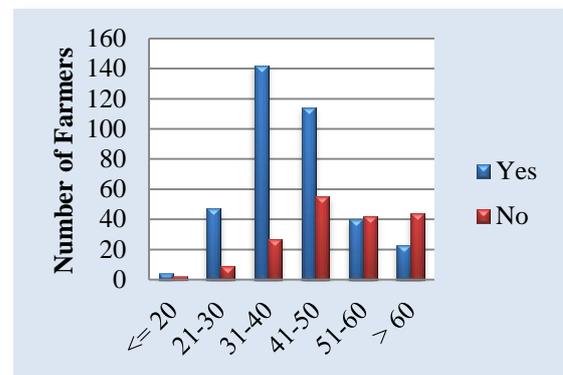


Farmers in the older age group (51-60 years age group and greater than 60 years) do not own mobiles phones as much as their counterparts

from the younger age groups.

“These days almost everyone has cell phones.”

**Figure 38: Age of Ownership of Mobile Phones (in numbers)**



Mobile phone use is very common among the farmers. Having more than one mobile phone per family is also common (children of farmers are more likely to possess another mobile phone compared to their wives). It is very rare to find a family without a mobile phone. In the few families where the parents do not have mobile phones, there is a high chance that children would have mobile phones.

“We have our cell phone all the time. Even while working in the field. We use it to contact our family members at home.”

Those farmers who have mobile phones carry them always, even while working in the field.

## 8.2 Usage Pattern of Mobile Phone

*Sending and Receiving Text Messages:* Out of farmers who have a mobile phone, 89% mentioned they could send text messages (SMS) and 92% mentioned they could read a received SMS.

“The use of SMS is uncountable.”

Usage of SMS (sending and receiving messages) is quite common among the people. They often send and receive SMS messages, as it is a cheaper way of communication compared to voice communication.

*Receiving and Making Calls:* Ninety-nine (99%) percent of farmers (among those who possess mobile phones) in the sample mentioned that they could make and receive phone calls through a mobile phone.

*Access and Usage of Internet:* Farmers (21%) had access to internet over their mobile phones. Out of these farmers, few farmers (41%) knew how to operate internet on their mobile phones. Children of farmers are the primary family members who access the internet on the mobile phones. Children often use the internet to finish their homework and access Facebook.

*Checking Airtime Balance:* Out of those who have mobile phones, ninety-one percent (91%) could check the airtime balance on their mobile phones.

*Receiving Cocoa Price Information on Mobile:* About one third of the farmers (32%) reported receiving cocoa price information on mobile phones. This happens either by calling each other or through SMS.

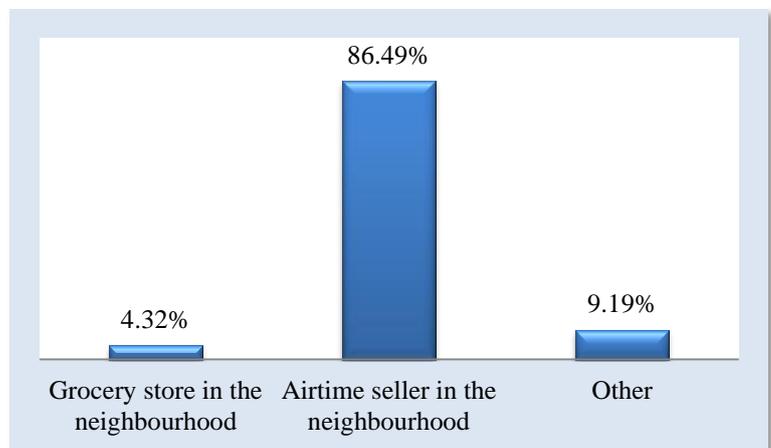
Figure 39: Mobile Phone Use in Sulawesi



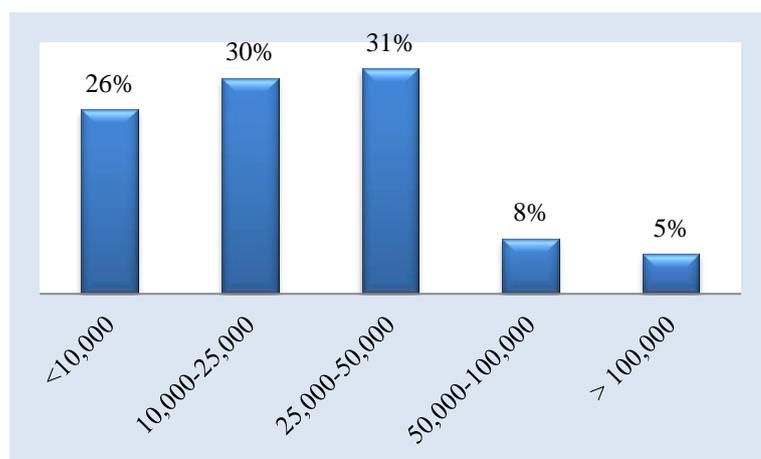
## 8.3 Buying Airtime

- Most of the farmers (approximately 87%) buy airtime from the airtime seller located in the neighborhood.
- Under “other” category, few farmers (around 9%) mentioned places like the nearby village, main market area, through friends who sell airtime, other farmers who have small kiosks of groceries and sell airtime, and through their children when they return from school.

Figure 40: Place for Buying Airtime



**Figure 41: Average Monthly Spending on Airtime**

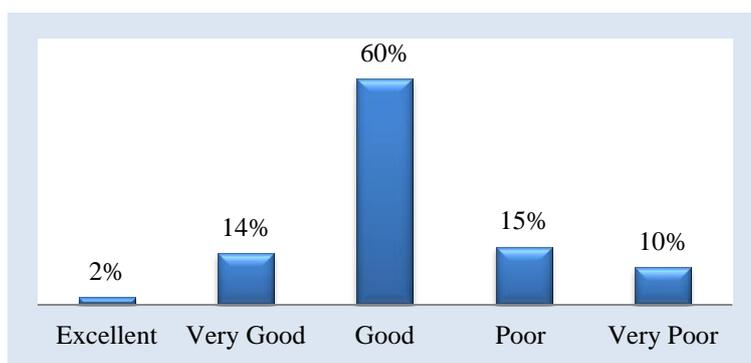


On average, most of the farmers (87%) spend less than IDR 50,000 on purchasing airtime per month.

#### 8.4 Mobile Network Operators and Service Quality

All the farmers surveyed (100%) use Telkomsel is Indonesia’s largest and government owned mobile network operator. The reason for such extensive usage of Telkomsel services is its extended network coverage on the Island of Sulawesi.

**Figure 42: Feedback on Service Quality of MNO**

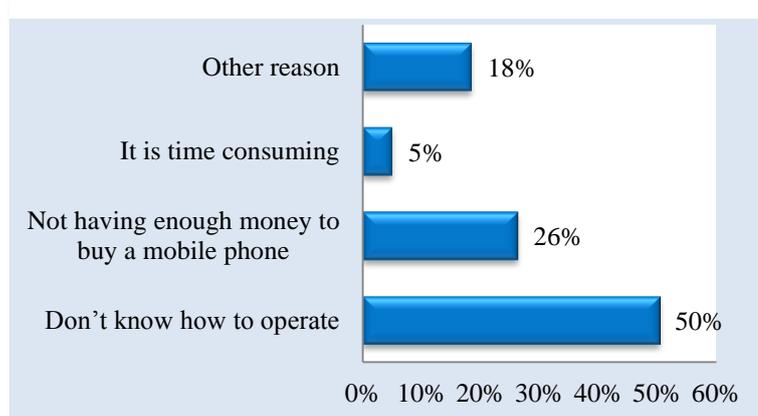


Regarding the service quality of the mobile network operator, the majority of the farmers (60%) rated it as “Good”. However, a few farmers rated the service quality as “Poor” (15%) and “Very Poor” (10%). In FGDs, farmers mentioned that the mobile network of Telkomsel is good but not dependable. New telecom operators (such as XL and Indosat) have recently started offering services in few villages. Farmers were not able to comment on performance of XL and Indosat.

#### 8.5 Reasons for Not Having Mobile Phones

- Farmers who do not have mobile phones mentioned that they do not know how to operate mobile phones (50%),
- 26% mentioned that they do not have enough money to buy a mobile phone and a few farmers
- (18%) mentioned “other reasons”.
- Other reasons include someone else in the family already has a mobile phone,

**Figure 43: Reasons for Not Having Mobile Phones**



mobile network not working properly in the village, and lack of interest in use of a mobile phone.

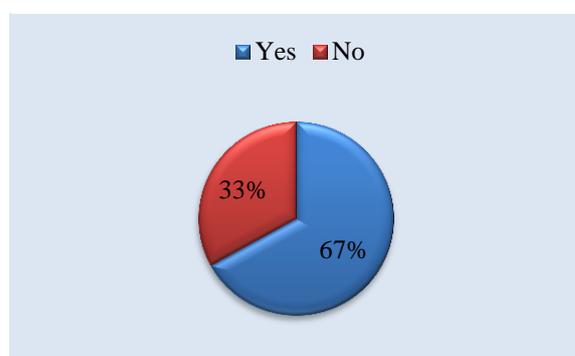
### 8.6 Earlier Experience of Mobile Money

The research study included a question inquiring whether the farmers had ever transferred the money using a mobile phone (the question was asked only to those who reported they had a mobile phone). Only two (0.54%) respondents replied positive to the question. These transfers could be the recharge transaction that farmers did for friends. Please note that in the earlier section of “Buying Airtime”, there were a few responses under “Other” category where farmers mentioned that they receive airtime balance through SMS from friends.

### 8.7 Willingness for Mobile Money

- Two thirds of the farmers (67%) expressed their willingness to adopt mobile money solutions for their financial transactions.
- In all of the FGD sessions, there was consensus among the farmers that they would use a mobile money platform.

**Figure 44: Openness to Mobile Money**

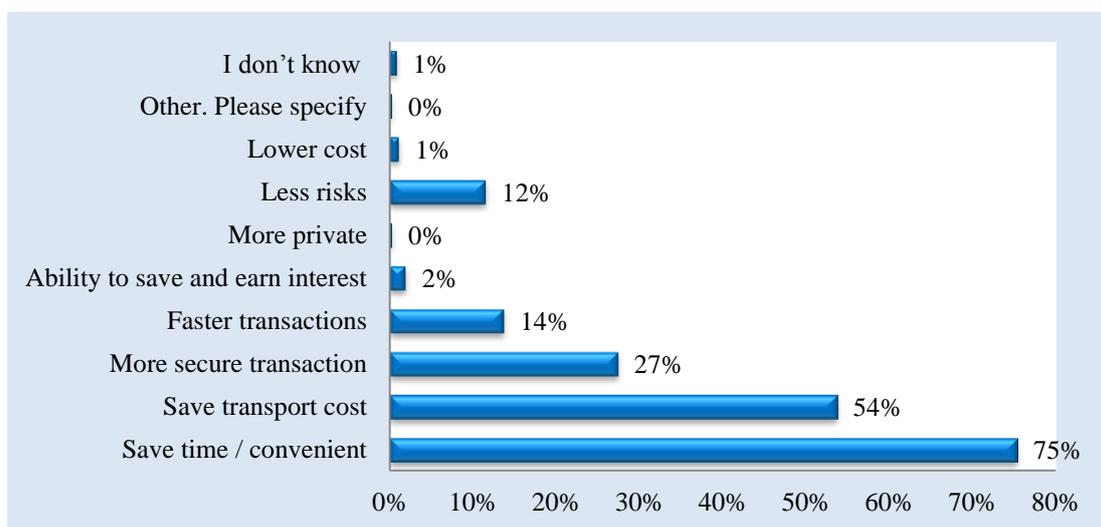


### 8.8 Perceived Benefits from Mobile Money

Seventy-five (75%) percent of the farmers stated that mobile money would help save them time and offer convenience for completing financial transactions. Farmers believe that mobile money solutions will help make payment/transfer/withdrawal transactions easier.

“If such service is available, we will surely try it. We may decide to not to use it later on but we will at least try.”

**Figure 45: Perceived Benefits from Mobile Money**



More than half of the farmers (54%) stated that mobile money would help them save on transportation costs. There was consensus among farmers that mobile money services would help them save transportation costs as the transactions could be done remotely rather than visiting the bank branches.

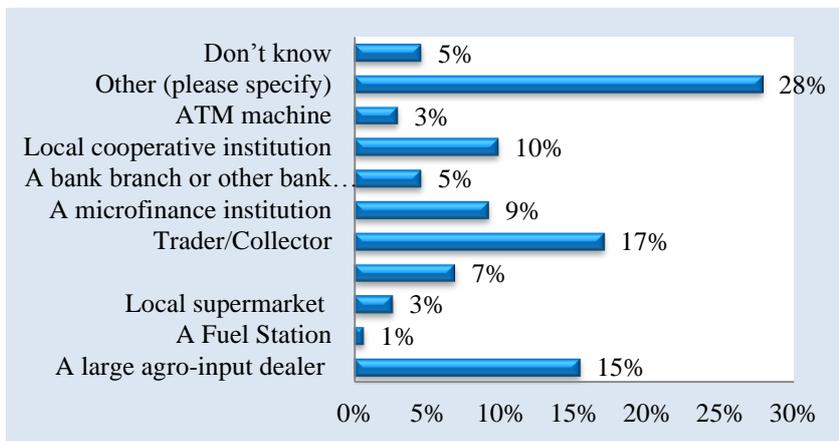
### 8.9 Willing to Use Cash-in/out Agents

Of all those who agreed to use mobile money, a large percentage of farmers (86%) also agreed to use agents for cash-in/out transactions. Eight percent (8%) of the farmers preferred not using agents whereas the remaining farmers answered “I don’t know”.

“Collector as an agent is most convenient for us. We do not have to go anywhere.”

### 8.10 Preference for Mobile Money Agents

**Figure 46: Preference for Mobile Money Agents**



When asked about the preference for mobile financial services agents (only to those who agreed to use mobile financial services), 28% of the farmers selected “other” category. Under this response, farmers’ groups and the village office came as the prominent responses as a preference for an agent. The second highest ranked answer (17%) indicates farmers would prefer to use cocoa collectors as mobile financial services agents. Please note that a local cooperative institution (10%) could be considered as a farmers’ group cooperative in this context.

In the FGDs, farmers expressed a preference for the following entities as mobile financial services agents:

- **Cocoa Collectors:** Farmers believe that collectors would be ideal to facilitate mobile financial services transactions. Farmers have developed a long and trusted relationship with the collectors. Collectors can also provide services during emergencies. Farmers already engage in financial transactions with collectors. Each village has at least one collector, who is always in touch with the farmers.
- **Farmers’ Group:** Farmers mentioned Poktan (smaller farmers’ group) could play the role of mobile financial services agents. In Poktan, as the group size is small, all farmers know and trust each other. Farmers do not want Gapoktan (farmers’ group having several Poktans as its part) to play the role of agent. Farmers think that members of Gapoktan do not give equal treatment to all the farmers and they are not transparent in their functioning.

- **Farmers having side business of selling airtime/groceries:** A few of the cocoa farmers in the research study also had other businesses selling groceries/airtime. Farmers who sell airtime are already familiar with mobile transactions.

## SECTION 9: DIFFERENCE BETWEEN MOBILE-BASED AND PAPER-BASED SURVEY

This section provides details of the parameters of the mobile-based and paper-based data collection methods and compares the two techniques:

### Overall Return Rate

For purposes of this research study, return rate is defined as number of actual forms received divided by the target allocated. For all enumerators, the target completion rate (for both modes of data collection) for the survey varied each day depending on their inclination and the capacity levels of using mobile phones. The paper-based survey achieved a better return rate (101%) compared to the mobile-based survey (95%).

**Figure 47: Farmer Mobile Survey Collection**



Enumerators using the mobile-based survey could not achieve a 100% target completion rate because on one occasion, the EpiSurveyor application did not work on the mobile phone and on another occasion, the enumerators could not log in to the EpiSurveyor application due to a mobile network problem. *MicroSave* provided backup paper forms to enumerators so that the overall target of the day would not be affected despite problems with the mobile survey. A description of problems faced in EpiSurveyor is provided below and in Section 10.

### Errors of Omission and Commission

**Table 1: Errors of Omission and Commission**

	Mobile Based Survey	Paper Based Survey
<b>Errors of Omission</b>	49	51
<b>Errors of Commission</b>	26	190

Mobile-based survey collection was superior to paper-based collection on both attributes of errors of omission and errors of commission. An error of omission is defined as omission of a question that should have been answered but is left blank in the form. An error of commission is defined as a question that is answered, but should have been left unanswered. Errors of omission were roughly the same in both the modes of data collection. However, for mobile-based data collection, errors of omission could be controlled by exercising the option of compulsory answers for each question.

Errors of commission were remarkably different between the modes of data collection. In the paper-based survey, there were high numbers of errors of commission because of mistakes committed by enumerators on deciding the questions that need not be answered based on the

previous question's answer. Directions were provided to enumerators during the training of enumerators to help them limit or avoid errors of commission. However, despite these directions, enumerators experienced errors of commission in paper-based surveys. In mobile-based surveys, errors of commission happened in 4-5 forms where the respondent wanted enumerator to go back to the main question and change its answer. Please see the description of this category: Output of the Data Set from EpiSurveyor under section of problems faced in EpiSurveyor.

### **Comparison Of Level Of Effort Required To Design The Questionnaire, Upload It On Episurveyor, Data Entry, Data Coding, Data Aggregation, And Data Cleaning.**

Any survey has to start with development of a questionnaire. The only difference between the mobile-based survey and the paper-based survey in this aspect was that after developing the questionnaire, it had to be uploaded on the EpiSurveyor website. Uploading on the website could be a tedious process. In this research study, it took an extra day to upload the questionnaire. Changing the questionnaire after uploading on EpiSurveyor is quite cumbersome too and requires a lot of time and effort. To finalize the questionnaire, *MicroSave* recommends performing a thorough pilot-test of the questionnaire in the field using the paper-based survey. To ensure an easy upload and to avoid post-upload changes, the questionnaire should be uploaded on EpiSurveyor only after the pilot test and approval of final changes to the questionnaire. If any changes are made in the questionnaire after uploading it on EpiSurveyor the revised form should again be shared with the enumerators. Enumerators will have to make sure that the earlier form in the mobile phone is replaced by the new file. The entire process should be carefully monitored; otherwise, the findings of the research study could be affected. The field supervisor of the enumerators should also receive training on the mobile phones and be qualified to handle any necessary trouble-shooting.

When it comes to data entry, data coding and data aggregation, data collection through the mobile phones proved to be superior to paper-based surveys. In the paper-based surveys, there was a need to hire data entry operators, who are generally responsible for data input in a master sheet; this task is automatically done with EpiSurveyor. Data coding could also be easily built into EpiSurveyor at the time of uploading the questionnaire. For example, it is always recommended to put numeric choices (for example, 1 for Male, 2 for Female) in the data set as compared to the text responses as these less subjective results provide for easy analysis of the data. EpiSurveyor allows the data set to be viewed by both text responses as well as by numeric choices.

In case of paper based surveys, more than one data entry operator was generally required to input and verify the data in an Excel spreadsheet. There is a general practice of consolidating the data input file filled by every enumerator into a master file. However, this step is not required when it comes to EpiSurveyor. Every day, data sent by enumerators through the mobile phones was updated on the EpiSurveyor server. *MicroSave* recommends that forms uploaded on the server, be cleaned the same day and saved as a new file (this is also applicable for paper-based surveys).

### **Monitoring and Supervision of the Field Work and Data**

Real-time availability of the data collected using EpiSurveyor helped in easy and effective monitoring of the fieldwork. Supervisors of the research study monitored the updated data on EpiSurveyor account at regular intervals during the fieldwork and exercised quality control by

quickly verifying the received data and contacting enumerators (wherever required). The web interface of EpiSurveyor allowed the supervisors to monitor:

- Number of respondents interviewed by enumerators
- When the interview began and ended (as we captured this information in our questionnaire, otherwise, EpiSurveyor only displays the date stamp in the data output containing the date of the interview as well as the time the data was saved as a completed form in the mobile phone)
- Data inconsistencies (EpiSurveyor allows us to view the data set by the codes as well as the text responses)

Another critical feature of EpiSurveyor is the GPS. Enumerators were informed that they would be tracked in the field. This helped create psychological pressure among the enumerators and decreased the risk of data fabrication as compared to the paper-based surveys where enumerators' location and current work is not visible. Use of GPS coupled with spot checks in the field proved an excellent monitoring and supervision check to ensure that the fieldwork was done according to the established policies and procedures.

Due to poor connectivity in some areas, there were instances where the data was not received until the end of the fieldwork as the enumerators only could send the completed forms when they reached an area with coverage of the mobile network. In case of paper-based surveys, data could be verified only when the enumerators returned from the field and the data entry was complete.

## Analysis

With the help of EpiSurveyor, one could easily view the data in the form of charts and graphs as soon as it was updated on the server. The data analysis feature provides good visibility of the progress of the research study. However, the presentation of graphs and charts is such that they could not be directly used for a formal report (we have used Excel-based charts for this report). The EpiSurveyor website promises more in-depth analysis of the data in the paid version of the software package.

## Training of Enumerators

The effort put into training of the enumerators was more significant for mobile-based surveys as compared to paper-based surveys. All the enumerators went through a regular training where each question was discussed including its multiple choice of answers, the rationale behind the question and its meaning. Enumerators' queries were answered during the process and rules were discussed for each question such as logic conditions (jumping directly to the desired question based on the response of the participant). Once the training on the questionnaire was complete, all enumerators went through the second part of the training that focused on using mobile phones in the field. This was time-consuming because all the enumerators had different levels of capability in handling mobile phones. However, it is certainly important to put more effort into the earlier part of the research study as the benefits of data collection through mobile phones far outweigh the benefits from

**Figure 48: Enumerator Training**



paper-based surveys. *MicroSave* recommends that mobile phones with an easy user-interface be provided to enumerators to ease the process of data collection. While not used in this research study, a local language user-interface would be beneficial.

### Average Interview Cost and Average Interview Length

Mobile-based surveys improved efficiency in conducting the survey by 21% as measured by interview length. Paper-based surveys on average took approximately 32 minutes to administer per respondent whereas for mobile-based surveys the average interview length was approximately 25 minutes.

For this study, paper-based surveys were less expensive to administer than mobile-based surveys.

**Table 2: Average Interview Cost and Average Length (comparison between paper and mobile-based survey)**

Mode of Data Collection	Budgeted Cost Per Survey(IDR)	Actual Costs (IDR)
Mobile phone based survey	112,273	116,692
Paper based survey	90,682	85,500

Difference in actual costs is due to the number of respondents covered under both modes of data collection. Mobile phone costs could be less than what is mentioned here if the costs of mobile phones are apportioned over the useful life of the mobile devices.

### Enumerators' Feedback

Enumerators who participated in the research study preferred mobile-based data collection. Enumerators mentioned that mobile phones helped speed up the time required for quantitative surveys. Enumerators were particularly appreciative of the logic conditions feature in EpiSurveyor. Using mobile phones, they did not have to worry about selecting the next question, as the desired question would automatically appear after swiping the screen based on the response to the earlier question. In the case of the paper-based survey, the enumerators were required to pay extra attention to the questions that needed to be skipped based on the response to the earlier question (in our case, they liked the format of the paper based survey forms as it contained signals in bold words on the questions that contained logic patterns). However, despite these directions, enumerators experienced more errors of commission using paper-based surveys.

Most of the enumerators reported that it was easy to learn the EpiSurveyor application on mobile phones (they still mentioned the need to have the EpiSurveyor application in the local language). Out of 14 enumerators, three enumerators could not use mobile phones. These enumerators indicated they had no prior experience using smartphones and had experience only in operating simple feature phone mobile handsets.

The age of enumerators also played an important role in the use of mobile phones for data collection. For our research study, we found that enumerators in the age group of 21-26 were quite enthusiastic regarding the use of mobile phones and were able to successfully achieve daily targets of mobile-based data collection forms. These enumerators were also familiar with similar smartphone mobile phones. This experience should always be checked before enrolling them for such tasks to assist in efficient mobile-based data collection efforts.

Enumerators mentioned that using mobile phones made a better impression on the respondents than the paper-based survey. In paper-based surveys, respondents were always cautious that their responses were being recorded. This issue should be examined further because if the respondent is cautious while answering the questions, there are high chances that his/her responses are biased. If using mobile phones to administer the survey help reduce the doubt element among the respondents, it would be preferable to adopt this mode of data collection, as it improves accuracy of results. However, at the same time, enumerators mentioned that respondents felt more satisfied after answering the paper based survey because there is a physical evidence of the survey that establishes the survey was really conducted. With paper-based surveys, respondents could also review their answers if they had some doubts about their answers.

Enumerators were cautious about the technology-related risks. *MicroSave* provided backup paper based forms to every enumerator, so they could still do the surveys if the mobile phone did not work. Enumerators expressed a preference to continue this practice for any similar initiatives in the future.

### **Overall Conclusion**

Considering the feedback of the enumerators and the comparison of the mobile-based survey with the paper-based survey, EpiSurveyor provides more benefits and features than a paper-based survey. It is worth noting that enumerators' capacity in handling mobile devices plays a crucial role in the overall success of such initiatives. A support person who is knowledgeable about the technology should always be available in the field to trouble-shoot common problems with the mobile devices and the EpiSurveyor application. Another aspect that is worth studying before the final decision is the response time of EpiSurveyor. In the current research study, we uploaded about 270 data forms on EpiSurveyor. For this number of forms, there were no problems accessing the website of EpiSurveyor. However, it would be interesting to compare the response time of EpiSurveyor when the sample size is larger.

## SECTION 10: ANNEXURE

### 10.1 Problems Encountered in Using EpiSurveyor/Limitations of EpiSurveyor

#### **Uploading of Questionnaires on EpiSurveyor and Establishing Logic Patterns in the Questions**

Uploading of questionnaires on EpiSurveyor was a smooth process except for one technical problem. The *MicroSave* team took a little bit of time to understand its exact nature and decide on the solution. The problem is best illustrated with use of the following example:

A survey design team asked one of the following questions in the study:

Farm Ownership	<ul style="list-style-type: none"><li>• Family Owned-Non Titled (not having land certificate)</li><li>• Family Owned-Titled (with land certificate),</li><li>• Leased,</li><li>• Government ownership of land,</li><li>• Other, please specify!</li></ul>
----------------	---

The design team selected the radio button while creating the multiple choices for this question. The radio button allows the survey to prompt selection of only one answer from the listed choices. In putting the choices for this question in the required box on EpiSurveyor website, the choices listed in the following manner:

Family Owned-Non Titled (not having land certificate) <<1>>  
Family Owned-Titled (with land certificate) <<2>>  
Leased <<3>>  
Government ownership of land <<4>>  
Other, please specify! <<5>>

Numeric codes inside the brackets intended to allow acceptance of the answer in the form of a number rather than the complete text and assist in easy analysis of the data. The choices listed without any bullet points or serial numbers.

EpiSurveyor logic conditions did not work well on this style of question when the multiple choices answers had bullets or serial number such as:

- Family Owned-Non Titled (not having land certificate) <<1>>
- Family Owned-Titled (with land certificate) <<2>>
- Leased <<3>>
- Government ownership of land <<4>>
- Other. Please specify <<5>>

It was difficult to recognize the problem as technically everything was correct but the formatting with bullets caused an error. *MicroSave* had mentioned correct logic conditions using proper equations. This problem was faced in several questions. However, the problem was only evident from a comparison of the questions where logic conditions worked with the questions where logic conditions did not work.

#### **Multiple Choice Questions in EpiSurveyor**

EpiSurveyor does not allow a limit on the number of responses per question. Under the current program, the choices are to opt for either the radio button or check box button. The radio button is best used for multiple-choice questions when only one answer is desired whereas the check box is preferable when seeking multiple answers. In this research study, the questionnaire included a few questions that sought not more than two answers from the respondent. However, there is no feature in EpiSurveyor that allows this limitation on the number of responses using check boxes. Enumerators had to keep in mind the limit while submitting the answers for such questions and self-impose the rule. For these questions, the questionnaire mentioned in the question wording itself that not more than two answers are permitted. However, there were still few cases where the enumerator selected more than two options. The data was not cleaned for this error during data clean-up exercise and the results are reported as per the original data.

### ***Logic Conditions***

Logic conditions are available in EpiSurveyor and work well as an effective method to prevent errors of omission and commission. EpiSurveyor always scored higher on this attribute in this research study compared to the paper-based survey forms. In the paper-based surveys, enumerators had to take special care while filling in the answers for the questions. They had to individually review what details were mandatory and which questions could be skipped based on the responses to the previous question, whereas these situations are easy to handle in EpiSurveyor as automated checks can be built in for each question. However, there was one situation where logic conditions did not work completely:

Following is one of the questions from our questionnaire:

- Q. Why you do not keep money or why you do not have a savings account (maximum of two options can be selected)?
1. Financial institutions are too far away
  2. Financial institutions are too expensive
  3. Do not have necessary documentation required to open the account
  4. I don't trust them
  5. There is no money for savings
  6. Because of religious reasons
  7. Because other family members already have savings
  8. Other reason, please specify.
  9. I don't know

There could be more than one response for this question. For example, if the respondent chooses the first of the eight options then as per the logic conditions, in the next question, a text field should come and ask for the choice ("Other reason. Please specify"). However, this was not possible in EpiSurveyor because there is also another response selected that does not have any associated logic condition. If the answer was only the eighth option then EpiSurveyor would work fine and proceed to the next window and ask for the text response. This limitation did not impact this research study as very few such questions were included and the probability of such combination of responses was also very low considering the other choices and field testing of the questionnaire.

### **Duplication of Data**

On a few occasions, when enumerators sent the data from their mobile phones, the data record was received twice. This was easy to identify through the daily dashboard where each enumerator

reported on the number of surveys done with both modes of data collections and verification of the information with the actual physical forms and EpiSurveyor records. Duplicate entries were deleted from the data set.

### **Output of the Data Set from EpiSurveyor**

There were a few instances (less than 10 forms) where the output on EpiSurveyor was incorrectly displayed. For example, if the respondent answered “Yes” to this question - “Do you keep money with a bank/BPR (rural bank?)”, then as per the questionnaire, the respondent would have to answer other sub-questions related to this main question. However, if the respondent suddenly decides to go back to the main question and changes the response from Yes to No (this happened in only those instances where the respondent did not understand the full meaning of the question in the first instance) then the answers to the sub-questions which had already been updated in the mobile phone will also be part of the final output. Actually, when the respondent changed the answer, the screen automatically went to the other main question and skipped sub-questions as per the established logic thereby eliminating the opportunity to modify responses to those sub-questions. The output for those sub-questions is shown as per the earlier data entry.

### **GPS Functioning**

The GPS feature in EpiSurveyor could be improved as it currently takes a long time to detect the exact location coordinates of the enumerator. The enumerators ranked the GPS feature as the least preferred feature of EpiSurveyor because of the time it takes to detect the readings. The enumerators felt that the process could be more efficient in terms of total time taken to conduct an interview, if the GPS function was performing at an acceptable rate. The GPS dialog box takes a long time (around 2-3 minutes) as it searches for better accuracy. The dialog box keeps on showing the message that it is searching for accuracy and accuracy reading starts dropping from 100 meters to 90 meters to 80 meters and so on until it finds better accuracy. This created confusion among the enumerators. However, the dialog box has a feature where it still accepts “OK” button (and whatever accuracy it would have had so far would appear in GPS readings) and the enumerator could proceed to the next question.

### **Missing Data Forms**

In only one case, one of the enumerators (who was one of the best in handling mobile phones) sent four completed forms after returning from the field. However, on the EpiSurveyor server, only one form was received. There were no further forms available in the application as completed forms. Please note that if a form is completed but not sent through the mobile, it will appear in the “Send Completed Forms” option. These forms must have been lost because of data connectivity issues, otherwise, the phone was working fine, and this enumerator was one of the best in dealing with the mobile phones. However, the three forms were retrieved through access to the EpiSurveyor folder on the enumerator’s mobile phone micro SD card. EpiSurveyor generally was installed on the micro SD card of an Android phone (which is one of the good features, so saving and storage is not relying solely on the internal memory of the mobile phone).

### **Unable to Access EpiSurveyor Application**

On one of the days of data collection, an enumerator could not access the EpiSurveyor application on the mobile phone handset. Once the application icon was selected, the application kept closing

and a dialog box appeared every time indicating force closure of the application. In this case, upon checking the mobile phone, it was found that the mobile phone was not able to detect the micro SD and, as the application was installed on the micro SD card, the application did not work.

### **Logging Out from EpiSurveyor**

Once a person logs into the EpiSurveyor application using a mobile phone, he/she remains logged in unless the person chooses to log out or the phone is accidentally switched off (possibly from a battery power failure). It is recommended that when the enumerator leaves the base location to conduct surveys and goes to a village, he/she must always ensure before proceeding to the field that he/she is logged in to the EpiSurveyor application. Working in the offline mode should only be allowed after the login is made (GPRS connection is used to log in from EpiSurveyor Application. Now when the enumerator goes to a village, even if there is no GPRS connectivity, the enumerator can directly open the home screen of EpiSurveyor application as the first window where it asks for username and password will not be shown because the login is already made. It is recommended that the log in task not be done in the field. Rural areas in our research location had erratic mobile network connectivity and the GPRS was not reliable.

### **Putting Absolute Amount in Answers**

In the questionnaire, there were a few questions that required an absolute amount (such as average size of cocoa sales transactions). However, putting absolute amounts in the mobile phones carries a greater risk of error (usually depends on the denomination pattern of the currency). In Indonesia, currency usually measured in thousands ('000s). Enumerators were asked how they would like to record numeric figures (be it 100,000 IDR or just 100 by ignoring thousands zeroes). Enumerators preferred writing out the complete amount because they were not comfortable in ignoring the last three zeroes. In the application, while putting the numeric answer, the comma after three digits does not appear automatically and hence the person may make a mistake by not realizing the total number of zeroes.

## **10.2 Changes in Quantitative Questionnaire after Field-Testing**

After field-testing, the following changes were made to the questionnaire:

- Simpler words were used for terms like cash-in, cash-out, payments, lead firm, lead farmer, etc.
- A few questions were translated again and their multiple choice answers for better understanding of the respondents (especially those questions that involved technical topics like payments, mobile money, etc.)
- In the question asking about the purpose of keeping savings/taking loans, multiple choices related to farming were combined. The option of working capital for farming was combined with the other option of saving for farm maintenance.
- In one question, the deposit transaction frequency was changed from monthly to every six months, as the deposit transactions were not as frequent as withdrawal transactions.
- For deposit transactions, one of the places for the transaction was ATMs but this was removed from the choices later. Offering cash deposit facilities at ATMs is not prevalent in small cities and rural areas of Indonesia.
- In a few of the questions, the answer choice of "Other, Please Specify" was eliminated because other choices were exhaustive. This change was made for questions that focused

on financial services offered by banks (question no.4), places for deposit transaction (question no.6), places for withdrawal transaction (question no.8), money kept with semi-formal and informal sources (question no.10), places from where farmers borrowed money (question no. 15), and mode of receiving other income (question no.26).

### 10.3 Survey Location

The research study was conducted in the following areas of Luwu and Polman districts:

District	Sub-Districts	Villages
<b>Luwu</b>	Sabbang	Pengkendekan Batu Alang Bone Subur Pararra Terpedo Jaya Buntu Terpedo Dandang Teteori
	Baebunta	Lara Mario Bumi Harapan Salulemo Palandan Tarobok Polewali
	Masamba	Pongo Baloli Sepakat Lero Toradda Pandak Pincara
	Bone-Bone	Mukti Sari Karangan Bantimurung
<b>Polewali Mandar</b>	Tapango	Dakka Jambu Malea Dakka Riso Batu Rappang Beroangin
	Mapili	Landi Kajnusuang Sattoko Rappang Barat Beroangin Buku/Belulu Rumpa
	Bulo	Pulliwa

		Kanusuang
	Anreapi	Mata Kali Duanpanua Kunyi Pappandangan Anreapi Kelapa dua
	Matakali	Patampanua Indomakombong Pasiang Barumbung
	Campalagian	Padang

## 10.4 Quantitative Questionnaire

### Primary Research Study with Cocoa Farmers

#### *Individual Interview Guide for Quantitative Survey with Farmers*

##### Greetings and Introduction

Hello, my name is... .. I am interviewing people on behalf of NetHope, USAID and Amarta II, which are international organisations working for the improvement of social and economic well-being of farmers. We are here to know your needs and preferences for financial services as well as your comfort levels with the mobile phones. There are some services coming out soon that can be accessed from a cell phone. They offer people new ways to send money, receive money, buy goods and pay bills.

Your opinion and views will be very helpful for us as it will give us a better understanding on how those new services will benefit you and your community.

The interview will take about 40-45 minutes and your answers will remain strictly confidential – nobody will find out what you said. Please allow us to proceed for the interview.

##### Personal Details of Farmer

Information	Answer
Name of Farmer and Status of Certification	
Name of Village	
Start Time	

##### Understanding Demographic Characteristics of Farmers

Information	Answer
Age	
Gender	<ul style="list-style-type: none"> <li>Male</li> </ul>

	<ul style="list-style-type: none"> <li>• Female</li> </ul>
<b>No. of Household Members</b>	
<b>Farm Ownership</b>	<ul style="list-style-type: none"> <li>• Family Owned-Non Titled (not having land certificate)</li> <li>• Family Owned-Titled (with land certificate),</li> <li>• Leased,</li> <li>• Government ownership of land.</li> <li>• Other, please specify!</li> </ul>
<b>Education Level</b>	<ul style="list-style-type: none"> <li>• Elementary School</li> <li>• Secondary School</li> <li>• High School</li> <li>• University</li> <li>• No education/school dropout</li> </ul>
<b>National ID Available (KTP)</b>	<ul style="list-style-type: none"> <li>• Yes</li> <li>• No</li> </ul>

### Understanding Financial Behaviour of Farmers and Use of Financial Services

#### *Savings and Investments*

We will start with understanding your savings (Tabungan) related requirements. Please allow me to begin with the questions:

- Do you keep/save money?
  - Yes **CONTINUE**
  - No **GO TO 12**
- Why do you keep money or for what purpose do you keep money (maximum of two options can be selected)?
  - Farm and Agriculture Inputs/Farm maintenance
  - Revitalise cocoa trees
  - For investments purpose/to earn extra income
  - For meeting emergencies (health, natural calamities, etc.)
  - For children's education/school fees
  - Major events like birth, marriage, haj trips.
  - Buy agricultural land/Purchase land for farming
  - Home renovation/purchase house
  - Daily needs such as food, clothing and non-food essentials
- Do you keep money with a bank/BPR (rural bank)?
  - Yes **CONTINUE**
  - No **GO TO 11**
- What type of services do you currently use with the commercial bank/rural bank where you have an account? (Maximum of five options can be selected)?
  - Cash Deposit
  - Cash Withdrawal

3. Balance check
4. Bill payment
5. Cash transfer to individuals
6. Cash transfer to companies (including SMEs) (e.g. to pay for agricultural inputs)
7. Receive salary/payments from cocoa buyers/firms
8. Receive benefits (e.g. pensions)
9. Loan
10. Investments
11. Insurance

5. How often do you deposit money in your account in every six **months**? This includes cash or electronic deposits, or anytime money is put into your accounts by yourself or others. Please input the number.

\_\_\_\_\_Number of times

6. Where do you do the deposit transactions?

1. Bank Branch/Branch of any financial institution
2. Over the counter at a retail grocery store, or
3. Some other person associated with your financial institution/field staff coming to the house
4. Some other person who is not associated with your financial institution/an individual agent
5. I don't know

7. How often the money is taken out/withdrawn from your account in a **month**? This includes cash withdrawals, electronic payments or purchases, check payments, or any other time money is removed from your account by yourself or others. Please input the number.

\_\_\_\_\_Number of times

8. When you need cash, where do you withdraw the money?

1. At an ATM
2. Bank Branch/Branch of any financial institution
3. Over the counter at a retail grocery store, or
4. Some other person associated with your financial institution/field staff coming to the house
5. Some other person who is not associated with your financial institution/an individual agent
6. I Don't know

9. Do you also have an ATM card for this account?

1. Yes
2. No

10. Apart from bank, where else do you keep money (select any one of the following choices)?

- |                                  |                 |
|----------------------------------|-----------------|
| 1. Post Office                   | <b>GO TO 13</b> |
| 2. Cooperative                   | <b>GO TO 13</b> |
| 3. Farmer Group                  | <b>GO TO 13</b> |
| 4. Village Level Institution/BKD | <b>GO TO 13</b> |
| 5. ROSCA/ Arisans                | <b>GO TO 13</b> |

- 6. In house-under the mattress, inside the cupboard, etc. **GO TO 13**
- 7. With friends and relatives **GO TO 13**
- 8. In-Kind-Gold, goats, sheep, purchase of household asset. **GO TO 13**
- 9. Individual Collectors/Agents **GO TO 13**

11. Where do you keep money (select any one of the following choices)?

- 1. Post Office **GO TO 13**
- 2. Cooperative **GO TO 13**
- 3. Farmer Group **GO TO 13**
- 4. Village Level Institution/BKD **GO TO 13**
- 5. ROSCA/ Arisans **GO TO 13**
- 6. In house-under the mattress, inside the cupboard, etc. **GO TO 13**
- 7. With friends and relatives **GO TO 13**
- 8. In-Kind-gold, goats, sheep, purchase of household asset. **GO TO 13**
- 9. Individual Collectors/Agents **GO TO 13**

12. Why you do not keep money or why you do not have a savings account (maximum of two options can be selected)?

- 10. Financial institutions are too far away
- 11. Financial institutions are too expensive
- 12. Do not have necessary documentation required to open the account
- 13. I don't trust them
- 14. There is no money for savings
- 15. Because of religious reasons
- 16. Because other family members already have savings
- 17. Other reason, please specify.
- 18. I don't know

### *Loan/Credit*

**Now we will try to understand your loan/credit related requirements and preferences.**

13. Do you borrow money or do you have a loan?

- 1. Yes **CONTINUE**
- 2. No **GO TO 16**

14. What do you borrow money for (maximum of two options can be selected)?

- 1. Farm and Agricultural Inputs/Farm maintenance
- 2. Revitalise cocoa trees
- 3. For meeting emergencies (health, natural calamities, etc.)
- 4. Children Education/School fees
- 5. Daily needs such as food, clothing and non-food essentials
- 6. Home renovation/purchase house
- 7. Major events like birth, marriage, haj trips.
- 8. Buy agricultural land/Purchase land for farming
- 9. Other. Please specify

15. From where do you borrow the money (maximum of two options can be selected)?

1. Bank/Rural Bank (BPR)
2. Post Office
3. Cooperative
4. Government Program (KUR, PNPM)
5. Farmer Group
6. Village Level Institution/BKD
7. ROSCA/Arisan
8. Individual Collectors/Agents
9. Family Members/Relatives
10. Friends/Neighbours

***Payments/Bill Payments/Money Transfers***

***Money Received-Related to Cocoa Income***

***Now we will understand how you receive income from producing and selling cocoa.***

16. How many separate payments do you receive each year for sale of cocoa crop? Please input the number.

\_\_\_\_\_ Number of times

17. What is the average transaction size (sale of cocoa product per transaction)? Please input the number.

\_\_\_\_\_ Amount (in `000s)

18. Do you negotiate the payment?

1. Yes **CONTINUE**
2. No **GO TO 20**
3. Can't say **GO TO 20**

19. How do you negotiate?

1. Individually
2. Through a farmer cooperative

20. How you are typically paid?

1. Cash
2. Bank transfer
3. Other. Please specify

21. To whom do you sell?

1. Lead farmer/Chairman of Farmer's Group
2. Collector/Traders
3. Lead firm/Exporter
4. Collective marketing through farmer organisation
5. Several buyers (local collectors, exporters)
6. Other. Please specify

22. Do you typically sell to the same person across all the seasons/year?

1. Yes
2. No

23. Where does the transaction take place?

1. At my farm
2. At my home
3. At farm group facility
4. At collectors facility
5. At lead firm/company facility
6. Other. Please specify

### **Money Received-Related to Other Income**

***In this section, I will ask the questions regarding your other type of income, which is different from cocoa farming.***

24. Do you have any income from other sources besides cocoa?

1. Yes **CONTINUE**
2. No **GO TO 30**

25. What is the source of other income?

1. Growing some other crops
2. Remittance from children/spouse/other family member
3. Maintaining small kiosk shops/stalls/small business
4. Non-cocoa agricultural labour
5. Other labour such as mining of sand and rock
6. Services such as carpentry, house construction, motor cycle taxi
7. Other, Please specify

26. In what form do you receive your money from this other source of income?

1. Cash
2. Bank transfer
3. Goods

27. Where do you collect this money?

1. Home
2. In the work place
3. Bank
4. Post Office
5. Other, Please specify

28. In the past 12 months, how many other income payments did you receive? Please input the number.

\_\_\_\_\_ Number of times

29. What is the average transaction size (for other income payments)? Please input the number.

\_\_\_\_\_ Amount (in `000s)

### ***Household and Business Expenditures/Bill Payment***

**Now, I would like to know about your regular expenses-How you incur those expenses and for what purpose.**

30. What are your two largest expenses/cash outflows in a month (not more than two answers permitted)?

1. House rent
2. Fuel
3. Electricity
4. Water
5. Agricultural Inputs
6. Food (e.g., rice, cooking oil)
7. Education
8. Clothing
9. Airtime/Telephone expenses
10. Health care
11. Loans (repayment and interest)
12. Other (Please specify.....).

31. How do you pay for each of these expenses (not more than two answers permitted)?

1. Cash
2. Transfer from banks or financial institutions
3. Electronic payments that you make or that are made automatically, including wire transfers or payments made online
4. Money transfer service (Western Union, Money Gram, etc.)
5. Mobile phone money transfer
6. Card payments (e.g. credit card, debit/atm card, prepaid card)
7. Credit
8. In-person
9. Other (Please specify.....)

32. How often do you pay such expenses? (not more than two answers permitted)

1. Daily
2. Weekly
3. Fortnightly
4. Monthly
5. Annually/Yearly
6. Other (please specify)

33. Where do you go to pay this bill? (not more than two answers permitted)

1. Service providers come to my home
2. Utility office (e.g. PLN, PAN)
3. Bank branch/BPR Office
4. Cooperative office
5. Post Office
6. Customer service point of money transfer service (Western Union, Money Transfer, etc.)
7. Other (please specify)

### ***Money Transfer/Remittance***

**Now we will talk about your needs and preferences for sending and receiving money.**

34. Have you personally sent any money to a family member or friend living in a different city or area (within the country or outside the country)?

1. Yes **CONTINUE**
2. No **GO TO 37**

35. How often do you send money?

1. Daily
2. Weekly
3. Fortnightly
4. Monthly
5. Annually

36. On average how much do you send per transaction? Please input the number.

\_\_\_\_\_ Amount (in `000s)

37. How often do you receive money?

1. Daily **CONTINUE**
2. Weekly **CONTINUE**
3. Fortnightly **CONTINUE**
4. Monthly **CONTINUE**
5. Annually **CONTINUE**
6. Never **GO TO 40**

38. On average how much do you receive per transaction? Please input the number.

\_\_\_\_\_ Amount (in `000s)

39. How do you receive money?

1. In-person
2. Transfer from banks or financial institutions
3. Money transfer service (e.g., Western Union, MoneyGram, etc.)
4. Post office branch
5. Remittance Agent (e.g. courier)
6. Through Friends and Relatives
7. Other. Please specify

### ***Mobile Phone Usage and Awareness***

**This is the last section and is very critical. In this section, I will ask you about your usage of mobile phones.**

40. Do you own a mobile phone?

1. Yes **CONTINUE**

2. No **GO TO 54**

41. Do you know how to send SMS/texts?

1. Yes
2. No

42. Do you know how to receive SMS/texts?

1. Yes
2. No

43. Are you able to make and receive calls on mobile phone?

1. Yes
2. No

44. Do you have access to internet on mobile phone?

1. Yes **CONTINUE**
2. No **GO TO 46**

45. Do you know how to operate internet on your mobile phone?

1. Yes
2. No

46. Do you receive cocoa market price information on mobile phone?

1. Yes
2. No

47. Do you know how to check your airtime balance?

1. Yes
2. No

48. Where do you buy airtime?

1. Grocery store in the neighbourhood
2. Airtime seller in the neighbourhood
3. Any other (Please specify....)

49. How much airtime do you generally buy in a month? Please input the number.

\_\_\_\_\_ Amount (in `000s)

50. Who is your network provider?

1. Telkomsel
2. Indosat
3. Axis
4. XL
5. Any other. Please specify

51. How reliable is the service from mobile network operator?

1. Excellent
2. Very Good
3. Good

4. Poor
5. Very Poor

52. In the past 12 months, have you used a mobile device to?

1. Pay bills **CONTINUE**
2. Send money **CONTINUE**
3. Receive money **CONTINUE**
4. No **GO TO 58**

53. How far are you located from a service point (the place where you do the cash deposit and cash withdrawal transactions)?

1. <1km
2. 1-5km
3. >5km

54. Does someone else in your family own the mobile phone?

1. Yes **CONTINUE**
2. No **GO TO 57**

55. Do you share the mobile phone with that family member?

1. Yes **CONTINUE**
2. No **GO TO 57**

56. Do you/they use multiple SIM cards?

1. Yes
2. No

57. Why you do not use the mobile phone?

1. Don't know how to operate
2. Not having enough money to buy a mobile phone/ It is expensive
3. It is time consuming
4. Any other. Please specify

58. Are you willing to use your mobile phone for transactions like bill payments, money transfer/remittance, purchase airtime, loan repayment, etc.?

1. Yes **CONTINUE**
2. No **GO TO 62**

59. What benefits do you see of using the mobile phones for financial transactions (not more than two answers permitted)?

1. Save time / convenient
2. Save transport cost
3. More secure transaction
4. Faster transactions
5. Ability to save and earn interest
6. More private
7. Less risks (compared to carrying cash in hand, etc.)
8. Lower cost
9. Other. Please specify

10. I don't know

60. For the services you normally use at a bank (deposit/withdrawal, transfer money, bill pay, receive salary or other money, buy airtime), would you be willing to use an agent, such as an agri-input supplier, post office, fuel station, or merchant rather than a bank to access these services?

1. Yes                    **CONTINUE**
2. No                    **GO TO 62**
3. I don't know        **GO TO 62**

61. Which places would you be willing to do mobile money transactions?

1. A large agro-input dealer
2. A Fuel Station
3. Local supermarket
4. Airtime dealer in the neighbourhood
5. Trader/Collector
6. A microfinance institution
7. A bank branch or other bank outlet
8. Local cooperative institution
9. ATM machine
10. Other (please specify)
11. Don't know
12. Refused

62. Can we contact you for follow-up interviews?

1. Yes                    **CONTINUE**
2. No                    **GO TO End Time**

***Your complete address and contact number:***

***End Time:***

*Thank the respondent and end the interview.*

## 10.5 FGD Guide for NetHope Market Research Study with Cocoa Farmers

### Welcome

- Thank you for meeting us.
- My name is .... and my colleague name is .... We come from *MicroSave* and are currently with NetHope, USAID and AMARTA II, which are international organisations working for the improvement of social and economic well-being of the farmers. We are here to know your needs and preferences for financial services as well as your comfort levels with the mobile phones. There are some services coming out soon that can be accessed from a mobile phone. They offer people new ways to send money, receive money, save money, buy goods and pay bills.
- Your opinion and views will be very helpful for us as it will give us a better understanding on how those new services will benefit you and your community.
- The discussion will take about 45 minutes to 1 hour and your answers will remain strictly confidential – nobody will find out what you said. Please allow us to proceed for the interview.

As a first step you should introduce yourself. Kindly say your name and the number of years you have been involved in cocoa farming

Core Questions	Probes
<b>SAVING SERVICES</b>	
Why do people in your community save/keep money?	<ul style="list-style-type: none"> <li>• <i>What goods and services do you buy with your savings?</i></li> <li>• <i>What other activities or occasions are there when you spend your savings?</i></li> <li>• <i>How much do you save for &lt;insert each item and repeat question as needed&gt;?</i></li> </ul>
How do people in this village save?	<ul style="list-style-type: none"> <li>• <i>Which are the financial institutions that offer savings services in your area?</i></li> <li>• <i>Which is the most popular way to save and why? Probe on the following aspect (probe on 8Ps):</i> <ol style="list-style-type: none"> <li>1. <i>Product features such as deposit/withdrawal features, minimum and opening balance, maximum limit on the transactions, terms and conditions to open and maintain the account, documentation required to open the account, nature of account and other facilities provided in the account such as bill payments, loan, insurance, etc.</i></li> <li>2. <i>Price: interest rate offered, charges for different transaction, account opening fee, maintenance fee.</i></li> <li>3. <i>Process: methodology followed by the financial service provider to open the account</i></li> <li>4. <i>Physical Evidence: documents provided by the financial institution at the time of transactions and account opening.</i></li> <li>5. <i>Promotion: how do the respondents come to know about the financial service provider</i></li> <li>6. <i>People: Who were involved from the institution to deliver the product and services</i></li> </ol> </li> </ul>

	<p>7. <i>Place: where does the transactions take place including the account opening</i></p> <p>8. <i>Positioning: how do farmers view the financial service provider (what are the key aspects that differentiates the financial service provider from the other players)</i></p> <ul style="list-style-type: none"> <li>• <i>Which is the least popular way to save and why? Probe on the above mentioned 8Ps.</i></li> </ul>
How could the problems with how you currently save be addressed?	<ul style="list-style-type: none"> <li>• <i>What changes would you like to have in the products and services so that they meet your needs and preferences?</i></li> </ul>
<b>LOANS/CREDIT</b>	
How do you get credit?	<ul style="list-style-type: none"> <li>• <i>Who do you ask for a loan or credit?</i></li> <li>• <i>If one of the credit service providers is an informal source then ask: Why does &lt;insert name of person/organization&gt; make loans?</i></li> <li>• <i>What is the most popular credit source for farmers and why?</i></li> </ul>
What do you like about how you get a loan currently?	<ul style="list-style-type: none"> <li>• <i>Probe around 8Ps</i> <ol style="list-style-type: none"> <li>1. <i>Product features such as loan amount, instalment size, loan term, collateral, terms and conditions to open and maintain the account, documentation required to open the account, nature of account and other facilities provided in the account such as bill payments, savings, insurance, etc.</i></li> <li>2. <i>Price: interest rate charged, processing fee, membership fee, any other fee?</i></li> <li>3. <i>Process: methodology followed by the financial service provider to open the loan account</i></li> <li>4. <i>Physical Evidence: documents provided by the financial institution at the time of transactions and account opening.</i></li> <li>5. <i>Promotion: how do the respondents come to know about the financial service provider</i></li> <li>6. <i>People: Who were involved from the institution to deliver the product and services</i></li> <li>7. <i>Place: where does the transactions take place including the account opening</i></li> <li>8. <i>Positioning: how do farmers view the financial service provider (what are the key aspects that differentiates the financial service provider from the other players)</i></li> </ol> </li> </ul>
What do you dislike about how you get a loan currently?	<ul style="list-style-type: none"> <li>• <i>Probe around 8Ps esp. Same as above.</i></li> </ul>
How could the problems with how you obtain loans be addressed?	<ul style="list-style-type: none"> <li>• <i>What changes would you like to have in the products and services so that they meet your needs and preferences?</i></li> </ul>
<b>REMITTANCE/MONEY TRANSFER/BILL PAYMENTS</b>	

<p>How do people in this area make payments for good and/or services ?</p>	<ul style="list-style-type: none"> <li>• <i>What goods and services do people make payments for in this area? (Loan repayments, purchase of agricultural inputs such as fertilisers, water, electricity, telephone, daily needs such as food and clothing, etc.)</i></li> <li>• <i>Probe for form of payments:</i> <ol style="list-style-type: none"> <li>1. <i>Cash</i></li> <li>2. <i>Check</i></li> <li>3. <i>Bank account</i></li> <li>4. <i>Credit Card/Card payments/</i></li> <li>5. <i>Online payments</i></li> <li>6. <i>Electronic payments through Western Union/Moneygram</i></li> <li>7. <i>In Kind payments</i></li> <li>8. <i>Mobile Payments</i></li> <li>9. <i>Others</i></li> </ol> </li> <li>• <i>What is the process of making these payments?</i></li> </ul>
<p>What are the challenges when making payments for goods and/or services?</p>	<ul style="list-style-type: none"> <li>• <i>What difficulties you face while doing the payment transactions for good and services listed above?</i></li> </ul>
<p>How can these challenges be addressed?</p>	<ul style="list-style-type: none"> <li>• <i>What changes would you like to have in the bill payments transaction so that they meet your needs and preferences? (special attention on mode of payment, frequency, charges, physical evidence and the overall process)</i></li> </ul>
<p>How do people send money to other people domestically (within Indonesia) ?</p>	<ul style="list-style-type: none"> <li>• <i>What are the service points they use for sending money?</i></li> </ul>
<p>How do people send money to other people internationally (to other countries)?</p>	
<p>What are the challenges when transferring money to people domestically? Internationally?</p>	<ul style="list-style-type: none"> <li>• <i>What difficulties you face while doing the domestic and international remittance transactions?</i></li> </ul>
<p>How do farmers receive remittances from people domestically (within Indonesia)?</p>	<ul style="list-style-type: none"> <li>• <i>What are the service points they use for receiving money?</i></li> </ul>
<p>How do farmers receive remittances from people internationally (from other countries)?</p>	
<p>What are the challenges when receiving money</p>	<ul style="list-style-type: none"> <li>• <i>What difficulties you face while receiving the remitted money?</i></li> </ul>

from family members domestically? Internationally?	
How can these challenges be addressed?	<ul style="list-style-type: none"> <li>• <i>Probe around: Place, Process, Risk, etc.</i></li> </ul>
How do farmers receive payments for cocoa produce?	<ul style="list-style-type: none"> <li>• <i>Probe for form of received payments:</i> <ol style="list-style-type: none"> <li>1. <i>Cash</i></li> <li>2. <i>Check</i></li> <li>3. <i>In the form of Loan</i></li> <li>4. <i>In Kind payments</i></li> <li>5. <i>Others</i></li> </ol> </li> </ul> <p>What are the challenges experienced when using these means of payments for receiving money related to cocoa produce?</p> <ul style="list-style-type: none"> <li>• <i>Cash payments</i></li> <li>• <i>Check payments</i></li> <li>• <i>In kind payments</i></li> <li>• <i>Others payments (If specified)</i></li> </ul>
How can these challenges be addressed?	<ul style="list-style-type: none"> <li>• <i>Probe around: Place, Process, Risk, etc.</i></li> </ul>
<b>MOBILE PHONE USAGE AND AWARENESS</b>	
Who in your household owns a mobile phone?	<p><i>Probe on the ownership pattern, usage capability, sending and receiving texts, using internet on mobile phone, name of mobile operators and the feedback on their services. Ask the following questions:</i></p> <ul style="list-style-type: none"> <li>• Who else uses a mobile phone in your household and whose phone do they use?</li> <li>• When you go to the field, who generally possess the mobile phone during that time?</li> <li>• When you negotiate with the collector/trader for cocoa payment, who has the mobile phone during that time?</li> <li>• When you receive the money from the collector/trader/exporter/firm, who has the mobile phone during that time?</li> <li>• How often do you use your phone to make calls? To receive calls?</li> <li>• How many text messages do you send per day? Per week?</li> <li>• How many text messages do you receive per day? Per week?</li> <li>• Do you use the Internet on your phone? If so, how often do you use the Internet per day? Per</li> </ul>

	<p>week? Per month? What do you use the Internet for?</p> <ul style="list-style-type: none"> <li>• Which are the known mobile network operators here? Which one is the best and why?</li> </ul>
<p><b>Facilitator then explains the concept of mobile banking/mobile money and asks the following questions:</b></p>	
<p>What do you think about mobile money as we have described it (i.e., using mobile phone to make deposits, withdrawals, and payments)?</p>	<ul style="list-style-type: none"> <li>• <i>What do you like about the mobile money?</i></li> <li>• <i>What incentives would make you want to keep money on your phone (ability to use it for payments, interest on savings, discounts to use it to buy things, etc.?)</i></li> <li>• <i>Price sensitivity – how much would you pay to use these services?</i></li> <li>• <i>What are your concerns about mobile money?</i> <ul style="list-style-type: none"> <li>• <i>Technical</i></li> <li>• <i>Security</i></li> <li>• <i>Other</i></li> </ul> </li> <li>• <i>How can those concerns be addressed?</i></li> </ul>
<p>Where would you like to make cash deposits and cash withdrawal transactions?</p>	<p><i>Provide examples if necessary</i></p> <ol style="list-style-type: none"> <li>1. <i>Airtime seller</i></li> <li>2. <i>Grocer shop</i></li> <li>3. <i>Agri-input supplier</i></li> <li>4. <i>Trader/Collector</i></li> <li>5. <i>Fuel station</i></li> </ol> <ul style="list-style-type: none"> <li>• <i>Probe around the profile of customer service points, where the farmers will do the deposits and withdrawal transactions</i></li> <li>• <i>Why do you prefer those customer service points?</i></li> </ul>
<p><b>Conclusion:</b> <i>As we conclude, we thank you very much for your time and ideas. Any questions for us!</i></p>	

**Daily Reporting:** Record responses/observations, scope and recommendation, and quotes for each question. Please take the permission before recording the discussion through audio tape.