

Indonesia Market Assessment for Agricultural Value-Chain Payments via Mobile Technology

2013



Designated for:



Prepared by:



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1. Introduction

Indonesia is an agricultural country. This fact implies that majority of Indonesia's population is working in the agricultural sector. On 2012, the agricultural sector employed around 49 million individuals or approximately 41% of the total population are engaged in agricultural sector, the result shows that the country is outpaced by its fellow developing countries such as Malaysia and India.

The value chain system of agribusiness in Indonesia is quite complex. Type of value chain varies by region and types of crops. Approximately there are 8-10 actors involved in the marketing and distribution system in the country. Currently, value chain payments made by farmers are predominantly settled in cash. While other actors from different level of tiers prefer bank transfers, farmers purchase seeds, fertilizers and other input supplies solely via cash payment method.

Financing small farmers is one of the apparent risks of agribusiness in Indonesia. The transaction requires high costs, rendering the market undesirable and unwarranted by financial institutions and products. Meanwhile, farmers also have limited access to official financial services and have hampered proper investment in farming tools to improve their cultivation activities and productions, expand their businesses and pursue a greater business opportunities.

Mobile-value payments are reputed to be able to assist, promote agribusiness and spur investments within the value chains by providing a cheaper, more efficient, traceable and transparent payment method for high volume and low-value transaction. The development of the mobile-value payment system can additionally open-up business opportunities for buyers, traders, input dealers, financial institutions and farmers which will eventually transform agriculture as one of the sectors that plays a significant role in the economy of the country.

The following study will evaluate the agriculture market for 5 types of crops; rice, maize, potato, chili and palm oil in Indonesia for mobile value-chain payments. It also assesses and analyzes the gap between farmers and value chain actors on the existing payment system and how mobile technology can benefit agribusiness and farmers in the country.

1.1 Mercy Corps

Established in 1979, Mercy Corps works to lessen suffering, poverty, and oppression by helping people build secure, productive and just communities when natural disaster, conflict or economic collapse destroy lives and livelihoods. The organization focuses on connecting to both government and business for the changes that people would like to see, to lay the groundwork for long-term recovery. Moreover, its main field is to emphasis on access to financial services as the critical element for helping people out of poverty.

Mercy Corps has existed in more than 40 countries all over the world with around 3,700 employees worldwide and been serving nearly 16.7 million people for an extended periods of time to foster local entrepreneurship, rebuild social capital, and stimulate markets through 'cash for work' programs and a variety of lending models.

Since 1979, the organization has provided more than US\$ 2.8 billion in assistance to 177 million people in 115 nations supported with 12 different financial institutions, including Bank Andara in Indonesia and headquarters offices located in North America and Europe.

1.2 Mercy Corps in Indonesia

Mercy Corps has its existence in Indonesia since 1998 and has improved the lives of more than 1,000,000 Indonesians across the country's vast expanse of islands. The organization's work has been continued to expand in geographic and programmatic scope in line with some of national disasters happened in the country; December 2004 Tsunami, the May 2006 Java Earthquake and the 2007 flooding in Jakarta.

The organization is working on the complex underlying issues of the urban poor who are slum residents living below poverty line which accounted around 21 million of the urbanization population by designing and implementing programs that help increase incomes, improve access to clean water and sanitation, and promote better health and nutrition practices.

Mercy Corps has been assisting to develop microfinance in Indonesia since 1999. In 2006, the organization established the Microfinance Innovations Center for Resources and Alternatives (MICRA) which acting as a support body and designed to provide technical assistance, training, ratings, appraisals and financial services to MFIs throughout the country.

Recently, one of the supports that Mercy Corps has implemented is the Agri-Fin Mobile Program. It is an initiative to connect farmers with mobile resources in Uganda, Zimbabwe and Indonesia. The program's objective is to aim an increased income of 180,000 low-income farmers by 30% within the first three years.

1.3 Assisting Agricultural Value-Chain Payment through Agri-Fin Mobile Program

Mercy Corps helps lesser farmers to increase their harvest and incomes through its program called Agri-Fin Mobile. This will directly grant farmers with permission to access a handful of agriculture information and financial services through their mobile phones. In executing this program, the organization is working together with banks, mobile network operators, mobile application developers, agriculture research institutes and farmer organizations to sustainably deliver these services.

The overview concepts of Agri-Fin Mobile are as follows:

- **Planning:** The program will help farmers to obtain information about the availability and cost of various supplies as well as expected crops' prices. Furthermore, the information will assist farmer to choose and decide on growing crops with the highest yield rate and the lowest risk of failure.
- **Planting:** At this phase, the program will help farmer in acquiring loans thus they can purchase the supplies they need for the coming growing season. By using their mobile phones, farmers would be able to obtain the information regarding the best seeds to use and procure crops insurance.
- **Growing:** The program would help farmers to use their mobile phones to pay merchants for supplies-right from fields they are working. As the crops grow, it will connect farmers with the information about fertilizer, pests and weather. It would maximize the quality and yield of the crops they've cultivated.
- **Harvesting:** Farmers would be able to access an accurate and current market price on their mobile phones and eventually will help them to secure favorable deals from traders.
- **Selling:** Agri-fin mobile will provide farmers with a safe, convenient and inexpensive way to receive payment, facilitate them to make payments on their loans and instill frugality for the future.

2. Scope of Work

This research and consulting work requires market assessment of the needs and potential of agriculture value chain payments via mobile technology for five selected agricultural products: *rice, maize, potato, chili and palm oil*.

The primary scopes are gathering on-the-ground market facts, conducting needs analysis and developing strategies for agriculture value chain payments suitable for the farmers and value chain actors.

The study is to be carried out in Indonesia at locations whereby these five agricultural products are clustered in Indonesia.

3. Research Methodology

The methodology is based on primary research of interviewing farmers and the value chain actors:

- **In-depth interviews with farmers:** to identify value chain actors involved, understand the payment process and needs analysis, assess existing mobile or electronic payments and identify barriers and challenges faced in adopting mobile payment services and mobile agricultural information services.
- **In-depth interviews with value chain actors – buyers, sellers, banks/financial institution/any payment actors:** to understand and validate their roles in the value chain actors, understand the payment process and needs analysis, assess existing mobile or electronic payments and identify barriers and challenges faced in adopting mobile payment services and mobile agricultural information services.

Prior to conducting the primary research, Spire consultants have reviewed and leveraged upon any literatures, past reports and data available at Mercy Corps.

4. Market Size

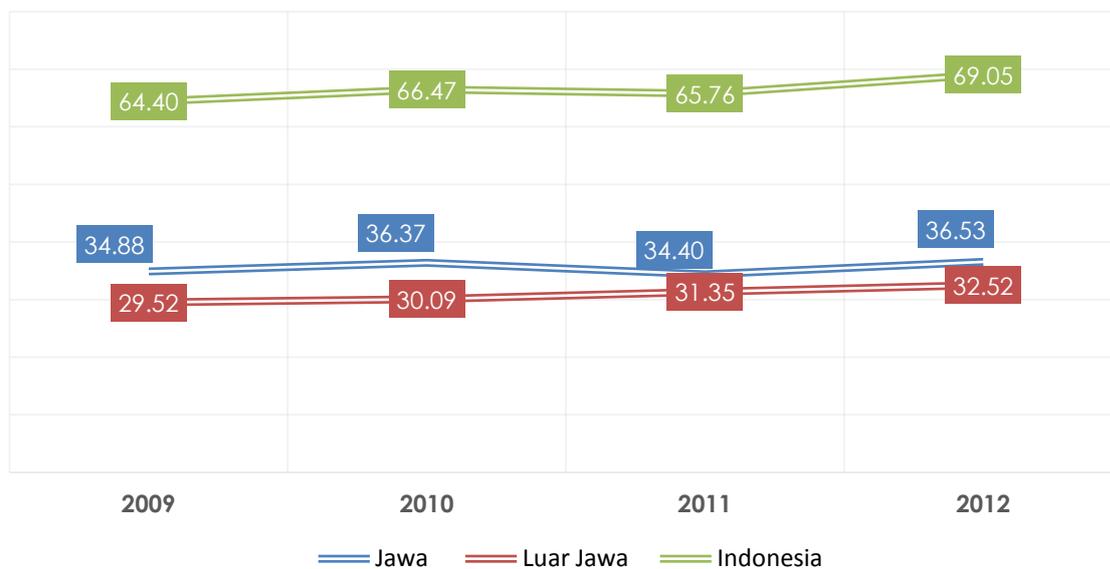
The agriculture sector is one of the main drivers of the Indonesian economy. The sector worth of US\$ 127 billion or accounted for 14.4% of the country's GDP in 2012, translates as the second largest after the service and industry sectors. There is an optimistic outlook towards the country's agriculture sector and see significant growth opportunities in sub-sectors such as palm oil and livestock. Indonesia is highly considered as a large producer of Potatoes, Chilies, Maize, Rice and Palm oil.

4.1 Rice

Rice is the staple food of Indonesian people. The production of rice in the country holds around 60% of the total agricultural area planted and provides 43% of all national farm revenue. As of 2012, it is reported that production of unhulled rice in Indonesia reached 69.05 million tons or an increase of 3.29 million tons (5%) compared to 2011's. The increase in production occurred in Java amounted to 2.12 million tons and outside Java was amounted to 1.17 million tons. This has contributed to an increase in harvested area of 239.80 thousand hectares (1.82%) and an increase in productivity of 1.56 quintal/hectare (3.13%). Rice production is predicted to fall within the range of 50% to 60% of the total unhulled rice production which accounts for 40.05 million tons of rice production in 2012. According to Ministry of Agriculture, in 2012, Indonesia exported around 3% of the total rice production which equals to 1,091,183 tons. Moreover, farmers consume around 6% of the total rice production for their families.

The increase in rice production in 2012 is mostly occurred in the province of East Java, Central Java, South Sulawesi, Lampung and Central Kalimantan. Meanwhile, a relatively large decline in production occurred in the province of West Java, South Sumatera, Banten, West Kalimantan and Gorontalo.

Figure 1 - Development of Unhulled Rice Production in Indonesia, 2009-2012 (in million tons)

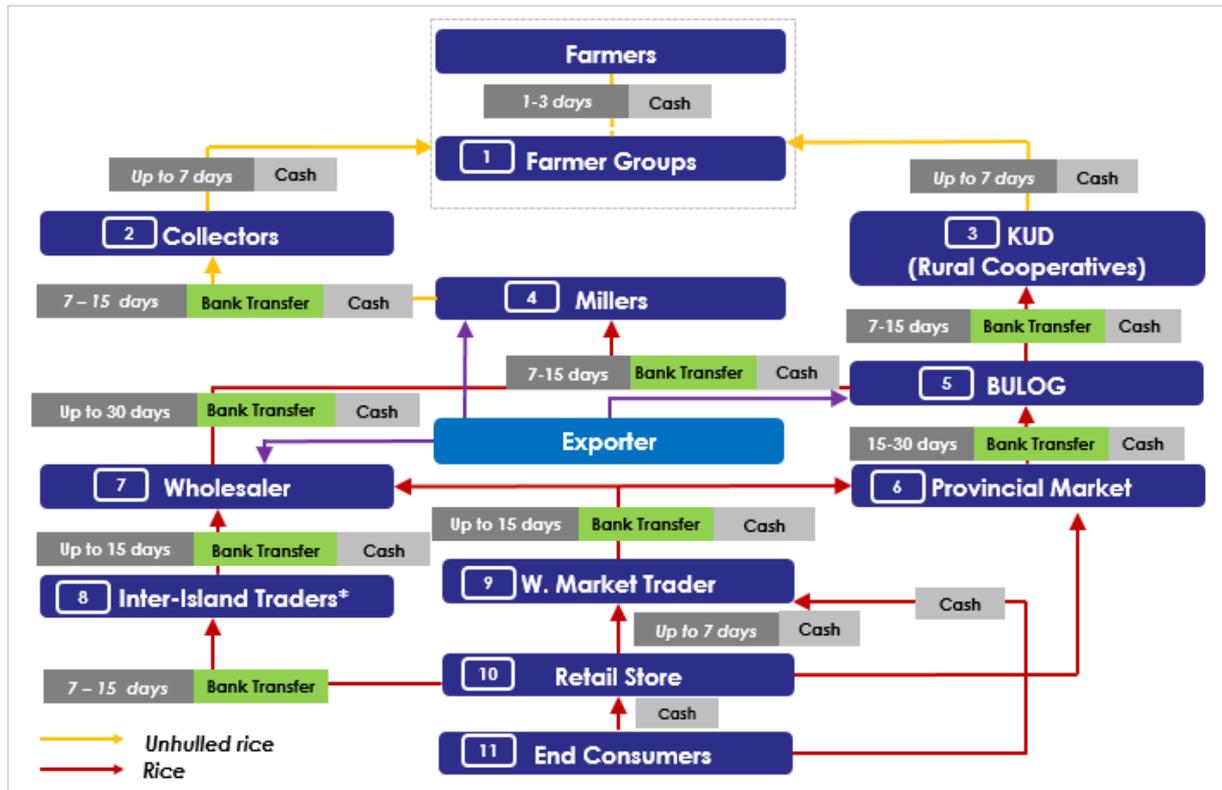


4.1.1 Value Chain System of Rice – Buyer Side

There are several types and variations of rice value chain in Indonesia, region and types of rice would be one of the contributing factors. Main markets of rice receive provisions from West Java, Banten, East Java, Lampung, Palembang, Makassar and some other provinces. The total value of trade reaches around 4,000 tons per day with the main supply destination to Jakarta and its surrounding area as well as the outside regions of Java Island.

The assessment structure for value chain of rice in province level was focused on 3 provinces in Java Island that booked highest sales record which includes; Jakarta, West Java and Central Java. Each provinces has different characteristics and role of actors as well as different flow proportion of quantity. As an overall, there are around 10 actors involved in the rice value chain system in Indonesia.

Figure 2 - Value Chain System of Rice Distribution in Indonesia (Overall) – Buyer Side



* Inter-island trader are usually existed in Sumatera, Sulawesi and Papua Areas

Definitions and characteristics of actors in overall payment value chain of rice are clarified as given below:

1. Farmers:

- It is estimated that there are around 13 million of rice farmers in Indonesia as per 2012.
- Rice farmers are usually affiliated to a specific farmer's group that differs by regions.

Farmer Groups:

- A farmer group usually consists of 100-150 farmers with a total land holding of around 80-140 ha or around 1.2 ha resulting around 103,991 farmer groups as a total in Indonesia.
- Farmer groups are to facilitate the needs of agriculture production.
- Another function is to assist farmers in marketing of agricultural production and providing savings as well as credit services to farmers capital
- It expedites cooperation with other parties and improves knowledge of agriculture technology.

2. Collectors

- Collectors acting as traders operate as syndicates and run the function of buying unhulled rice directly from producing farmers.
- The Collectors main roles are: assessing prices of unhulled rice, bagging, weighing, and making payments to farmers.
- Collectors are actively interacting with farmers groups (farmers) before the harvest season of unhulled rice to calculate production quantity by the end of the day.

3. Koperasi Unit Desa (KUD) or Rural Cooperatives

- KUD helps farmers by providing education along with the field extension workers to farmers.
- One of the activities also includes the provision of credit to farmers through village units and distribution inputs via cooperatives and agro-processing and marketing the agriculture products.
- KUD supports the production process of farmer groups since the period of cultivating season up to distributing and marketing end products (rice) to the value chain actors.

4. Millers

- The Millers main purpose is to provide services of grain grinding for local farmers.
- Mill owners also allow farmers to use their facilities for storage of hulled rice without paying a leasing/rental fee.
- Millers are actively interacting with farmers groups (farmers) before the harvest season of unhulled rice to calculate production quantity at the end of the day.

5. BULOG

- Indonesia Bureau Logistics (BULOG) is the controller of rice supply and prices on multiple levels, including between Farmers and Collectors, as well as playing a significant role as price arbitrator for the consumer level.
- The role of the BULOG within the value chain in Jakarta and West Java dominates the buyer side. The BULOG also absorbs and regulates a majority of Farmers' harvest.

6. Provincial Market

- Provincial markets acts as the place of rice trading across provinces.
- Products are obtained from wholesaler or millers in the form of rice.
- Provincial markets supply wholesaler markets, retail stores or even end consumers in some areas in Indonesia.
- Traders in provincial markets do not engage directly with the farmer groups since supplies are procured in greater part from the tier 1 actors such as BULOG and Millers.

7. Wholesaler

- Wholesalers located in the capital of the district or sub-district serve as hub to supply hulled rice to traders in retail markets, stalls, and shops.
- Wholesalers can freely choose rice variants to buy from Millers in order to offer vast range of choices to consumers.

8. Inter-Island Trader

- Inter-Island Traders purchase rice from Wholesalers and sell it onwards in big volume to different islands.
- The existence of inter-island traders are largely available in Sumatera, Sulawesi and Papua islands.
- Inter-Island Traders supply rice to retail stores as well.

9. Wholesaler Market Trader

- Wholesaler market trader has a dynamic role in the marketing of goods by regulating supplies, price formation in accordance with demand.
- Wholesaler market trader mostly supply retail stores albeit direct selling towards end users may be possible on occasional basis.

10. Retail Store

- Retail stores would be in form of traditional or modern such as supermarkets, hypermarkets where households can acquire rice variants
- Traditional retail stores are usually being supplied by provincial market or wholesaler market traders.

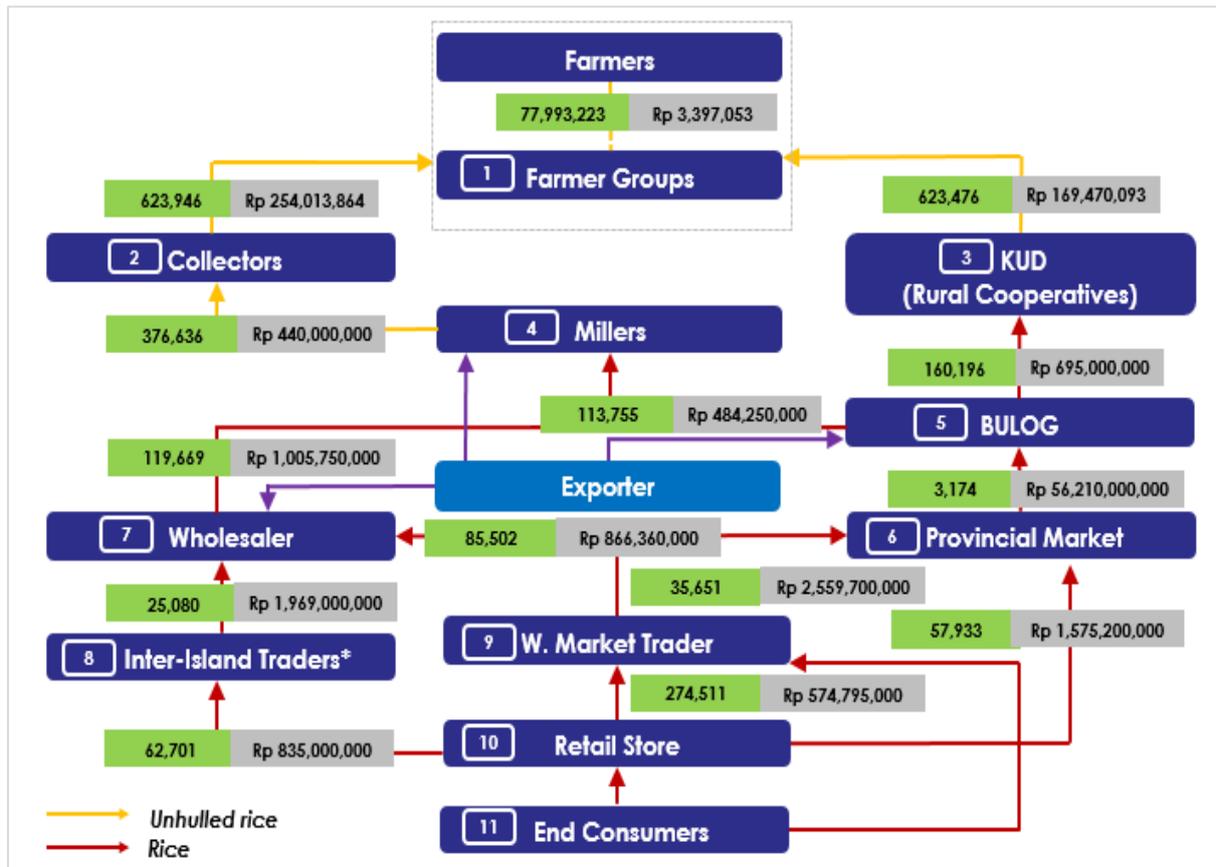
11. End Consumer

- End consumers are individuals/persons that purchase rice from traditional/modern stores or wholesaler market.

Total rice consumption in Indonesia as of 2012 was amounted to 36,517,590 tons after export and farmers families' consumption. Unhulled rice are bought, dried, stored, milled and finally sold by tier 1 actors which are millers and KUD to wholesaler, BULOG and provincial markets before distributed to the inter-island traders, wholesaler market traders, retail stores and end consumers (household). Rice price for millers as of December 2012 is Rp. 6,950 per kg and Rp. 7,450 at BULOG. The total value of rice at tier 1 level of value chain chart is amounted to Rp. 280,494,826,807,229 or USD 25.4 billion. (1USD = Rp 11,000).

According to the interview results conducted with head of farmer groups, payment through cash is preferable with average credit term of 7-21 days varying on unhulled rice and rice volume quantity. Banks involved are including BRI, BNI, Syariah Mandiri and BCA. Average value per transaction and total number of transaction by value chain actors in rice agribusiness in Indonesia is described by the figure below.

Figure 3 - Value per Transaction and Total Transaction by Value Chain Actors – Buyer Side



Total number of transaction by value chain
 Value per transaction

Most frequent transactions occur between actors; BULOG and Millers, Wholesaler and Millers, Wholesaler and Wholesaler Market Trader, Retailer Store and Provincial Market, Inter-island Trader and Retail Store and Wholesaler Market Trader and Retail Store which occur 12 times in a year. On the other hand, the biggest average purchase value among domestic transactions occurred between traders in provincial markets and BULOG total up to Rp. 56,210,000,000.

The table below shows the comprehensive payment frequency, total volume distributed per type of actors, number of actors, average purchase volume in tons per transaction, total number of transactions per year and total payment value per year.

Table 1 - Payment System by Value Chain Actors – Buyer Side

No.	Channel	Total Volume in Tons per Value Chain	Payment Freq. Per Actor (Yearly)	No. of Actors (Payment Receiver)	Avg. Purchase Volume in Tons /Transaction	Avg. Purchase Value in IDR /Transaction	Total No. of Transactions (Per Year)	Total Payment Value in IDR (Per Year)
1	Farmers from Farmers Group	69,050,000	6	12,998,870	0.89	3,596,400	77,993,222.89	280,494,826,807.229
2	Farmers Group from Collectors	41,430,000	6	103,991	66	268,920,000	623,946	167,791,500,000,000
3	Farmers Group from KUD	27,620,000	6	103,913	44	179,415,000	623,476	111,861,000,000,000
4	Collectors from Millers	41,430,000	6	62,773	110	451,000,000	376,636	169,863,000,000,000
5	KUD from BULOG	15,646,574	9	17,385	100	695,000,000	156,466	108,743,692,080,000
6	Millers from BULOG	7,394,100	12	9,480	65	484,250,000	113,755	55,086,045,000,000
7	Millers from Wholesaler	16,155,300	12	9,972	135	1,005,750,000	119,669	120,356,985,000,000
8	Millers from Exporter	480,000	12	160	250	1,862,500,000	1,920	3,576,000,000,000
9	BULOG from Exporter	240,000	12	80	250	1,925,000,000	960	1,848,000,000,000
10	Wholesaler from Exporter	480,000	12	160	250	1,969,000,000	1,920	3,780,480,000,000
11	BULOG from Provincial Market	22,800,674	6	521	7300	56,210,000,000	3,123	175,565,192,880,000
12	Provincial Market from W. Market Trac	11,213,554	9	3,834	325	2,559,700,000	34,503	88,317,954,454,400
13	Wholesaler from Inter-island trader	5,897,094	6	3,931	250	1,969,000,000	23,588	46,445,515,494,400
14	Wholesaler from W. Market Trader	9,032,154	12	6,843	110	866,360,000	82,110	71,137,248,054,400
15	Provincial Market from Retail Store	11,213,554	12	4,672	200	1,575,200,000	56,068	88,317,954,454,400
16	Inter-island Trader from Retail Store	6,270,120	12	5,225	100	835,000,000	62,701	52,355,502,000,000
17	W.Market Trader from Retail Store	17,843,226	12	22,876	65	574,795,000	274,511	157,787,647,518,000

	unhulled rice
	rice

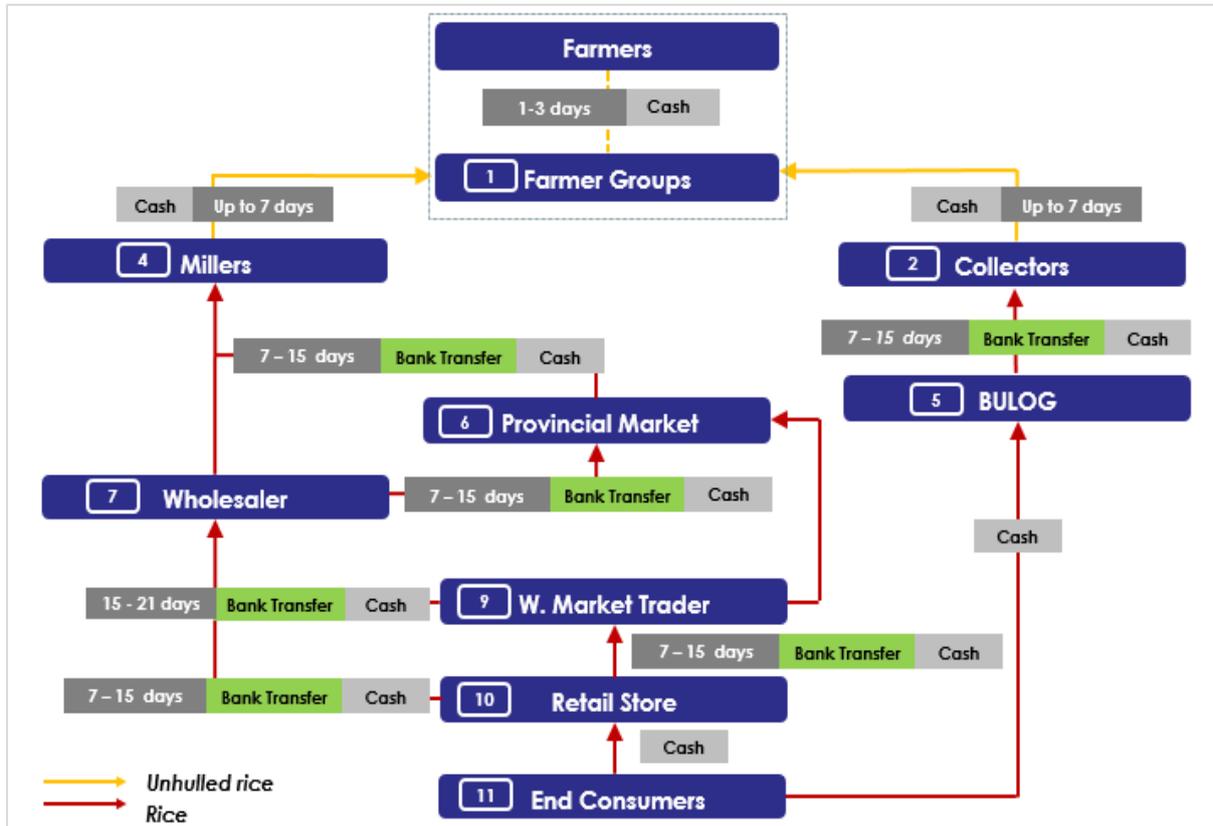
**]Due to the diversification of numbers of actors, the obtained number of actor above is based on assumption that each payment is a transaction between farmer and different actor and therefore there is no same actor in 2 transactions.*

Farmers under farmer group sell unhulled rice to collectors and KUD (Rural Cooperatives) to be processed into rice. As of 2012, total production of unhulled rice added up to 69.05 million tons. Collectors purchased unhulled rice from farmer groups once in 60 days which would result to 6 times in a year with an average amount in quantity of 66 tons per transaction at price of Rp 4.050,50 per kilogram (As of December 2012). Payments from collectors and KUD to farmer groups are completed in cash and will be consigned in a similar manner to individual farmers. Therefore, a farmer receives IDR 3,596,400 per transaction or Rp. 21,578,400 in a year.

4.1.2 Other Value Chain System of Rice – Buyer Side

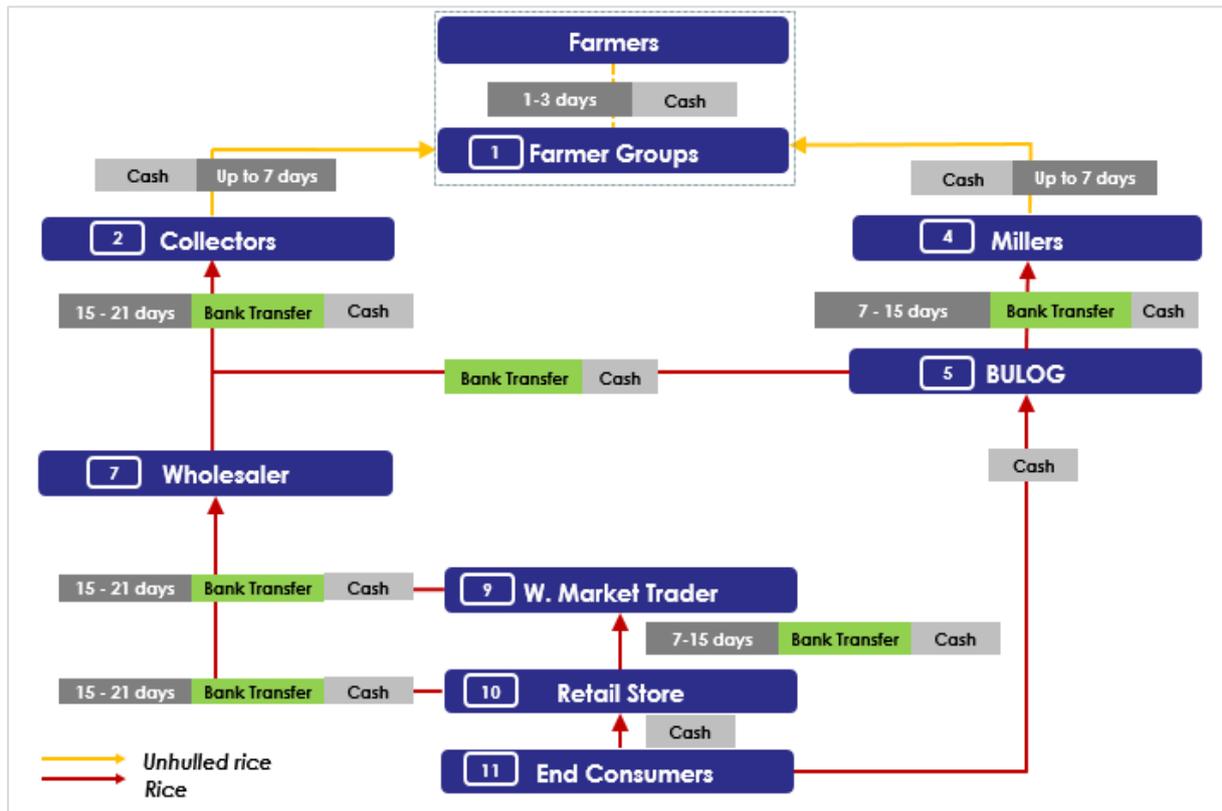
There are three other types of value chains available in Indonesia for Rice crop. This section shows other value chain of rice distribution in Jakarta, West Java and Central Java.

Figure 4 - Value Chain System of Rice in Jakarta – Buyer Side



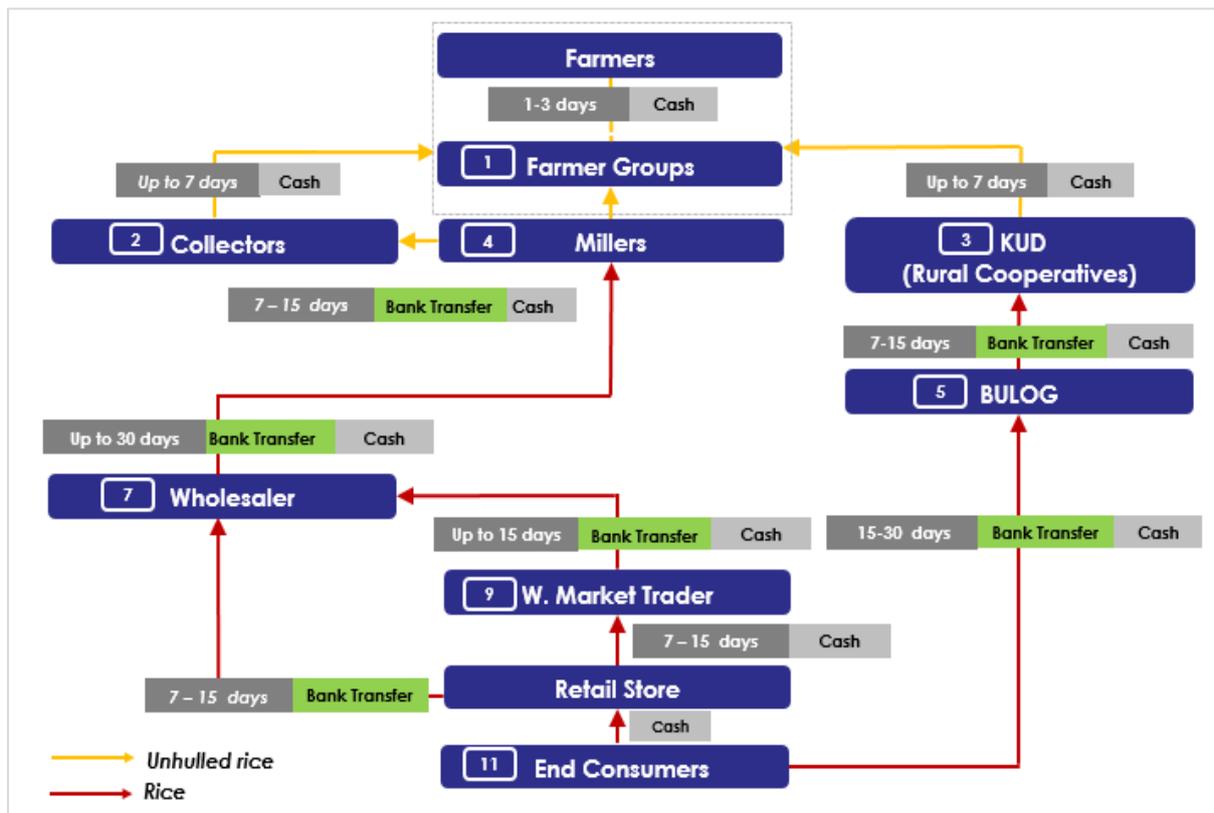
Rice consumption in Indonesia shows an average of 139 kg per capita. BULOG in Jakarta has an important role in absorbing the farmers' harvest. Around 90% of farmers' harvest in Jakarta are absorbed by BULOG through their working partners (collectors). There are no inter island-trader actors present in Jakarta and BULOG is able to sell directly to end consumers or household through its store known as *Bulogmart*.

Figure 5 - Value Chain System of Rice in West Java – Buyer Side



In the value chain of rice in West Java, the supplies heading to the retailer stores and markets were obtained not only from West Java but from the surrounding areas as well. Akin to distribution system in Jakarta, BULOG has an important role in distribution and marketing system in West Java areas. While in Central Java, the role of Rural Cooperatives, millers and collectors have more significant roles in distributing the rice to surrounding areas.

Figure 6 - Value Chain System of Rice in Central Java – Buyer Side



4.1.3 Interest Level on Mobile Payment Services by Value Chain Actors – Buyer Side

In the current payment system of rice value chain, cash and bank transfer are still preferable due to some barriers in the business environment of agribusiness in the country. Rice farmers and farmer groups still have low interest level in switching to mobile payment system due to limited access to the internet and non-ownership of mobile phone itself. Moreover, farmers found that there are no urgent needs on accessing information to the prevailing price of rice. Actors in tier 2 and 3 level are yet to have shown interest since they discovered it may help them in promoting the products to the end users (households). Table provided below summarizes the interest level on mobile payment and mobile agricultural information services by value chain actors of rice in Indonesia

Table 2 - Interest Level on Mobile Payment Service – Buyer Side

No.	CHANNEL	INTEREST LEVEL	REASON (INTERESTED)	REASON (NOT INTERESTED)
1.	Farmer	Low		<ul style="list-style-type: none"> • Farmers still prefer payment system in conventional way (cash can be used right away to buy personal /family's needs) • Mislead of perception on the concept of the mobile payment technology • Limitation of telecommunication access to the rural areas and non-ownership of mobile phone
2	Farmer Group	Medium	<ul style="list-style-type: none"> • Head of a farmer group is considering of applying payment through mobile since it will give them an easier access on receiving and checking payments from collectors, millers or other actors. • Safety wise on distributing money (cash) to each individual farmers • Accessible information with regards to the prevailing selling price of rice and purchase price of seed, fertilizer as well as their availability in the agent or wholesaler 	<ul style="list-style-type: none"> • Poor telecommunication access in the rural areas and non-ownership of mobile phone • Lack of trust from other actors who involved in the payment transactions
3	Collector	Medium	<ul style="list-style-type: none"> • Accessible information with regards to the prevailing selling price of unhulled rice • Easier access on transferring payment to the farmer group 	
4	Miller	Medium	<ul style="list-style-type: none"> • Accessible information with regards to the prevailing purchase price of unhulled rice from collectors • Accessible information with regards to the prevailing selling price of rice from BULOG 	<ul style="list-style-type: none"> • Lack of trust from actors who involved in the payments transactions

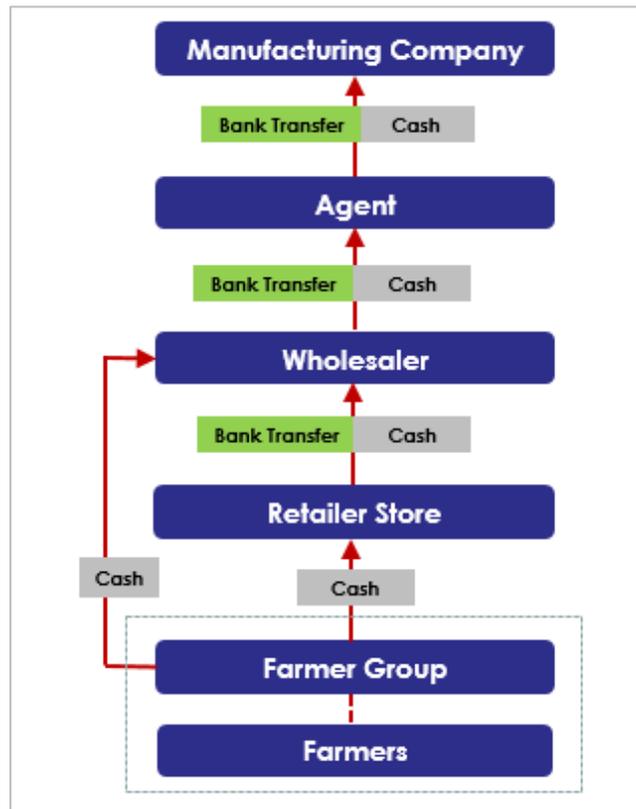
5	BULOG	Medium	<ul style="list-style-type: none"> • BULOG received payment through bank transfer from traders in provincial market. Mobile payment system will be a convenient way to help actors on expediting the process. • BULOG as price controller can also use the system to monitor rice price and stock availability on each tier. 	
6	KUD	Medium	<ul style="list-style-type: none"> • KUD is actively interacting with farmer group, mobile payment system will help KUD on monitoring unhulled rice production and what kind of input supplies farmer group needed as well as farming strategy to optimize production on farmer plantation activities. 	<ul style="list-style-type: none"> • Not all farmer groups are willing to switch to mobile payment system. Conventional way is still preferred.
7	Provincial Market	Medium	<ul style="list-style-type: none"> • Accessible information with regards to the prevailing selling price of rice and stock availability on tier 1's level • Faster payment process from and to each actors in the value chain system 	
8	Wholesaler	Medium	<ul style="list-style-type: none"> • Accessible information with regards to the prevailing selling price of rice and stock availability on tier 1's level • Faster payment process from and to each actors in the value chain system 	

9	Inter-island Trader	Medium	<ul style="list-style-type: none"> • Inter-island trader is willing to switch to mobile payment system on executing transactions, it will support payment progress to wholesaler and from retailer stores who purchase rice 	<ul style="list-style-type: none"> • Lack of trust from actors who involved in the payments transactions
10	W. Market Trader	High	<ul style="list-style-type: none"> • Traders in Wholesaler Market have been using bank transfer on conducting payment to provincial market and wholesaler. • Payment through mobile will easier payment process between each actor. 	
11	Retail Store	High	<ul style="list-style-type: none"> • Seller in retailer store channel would have an easier access on the information of prevailing rice on each actors in the surrounding areas and help on dealing with the traders • Retailer stores could also check the rice stock availability based on its quantity and types on seller actors; Wholesaler market trader, inter-island traders, and traders in provincial market. 	

4.1.4 Value Chain System of Rice – Supplier Side

There would be a simpler value chain system of rice in supplier side which involves only 5 actors in the value chain. Payment system for input supplies purchase transactions are mostly executed in bank transfer and cash. Below are the figure of value chain system of rice from supplier side.

Figure 7 - Value Chain System of Rice - Supplier Side



The characteristics and definitions of each actors in value chain system of supplier side are explained below:

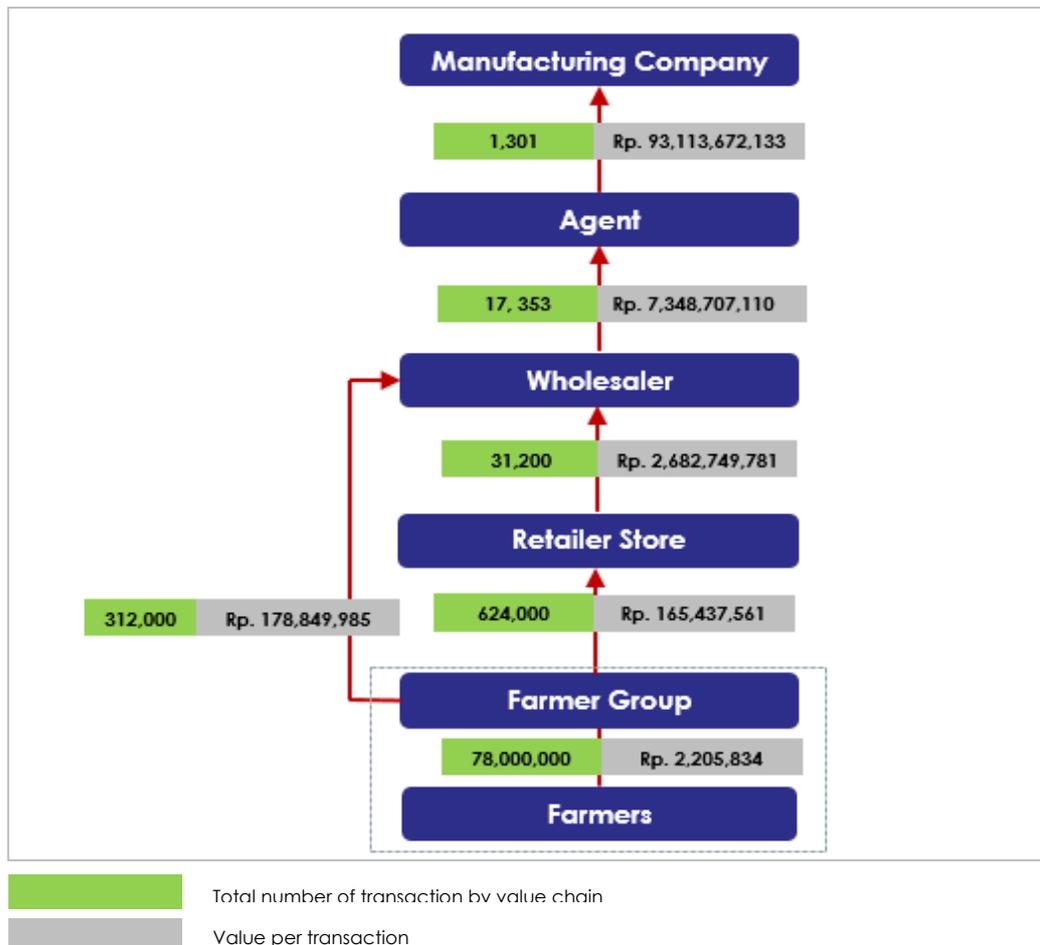
- 1. Manufacturing Company:** Fertilizer manufacturing companies act as the main input supplier in the rice market industry. The industry companies provide seed stocks, fertilizers, pesticides, and herbicides, collectively referred to as Input Supply. Different rice variants require different input supply products, however basically type of input supplies required are fertilizer, seed and pesticides.
- 2. Agent:** Agents obtain input supply from manufacturing companies and sell onwards to Wholesalers. Agents usually act as sole and exclusive distributor of one specific company in a region to supply and maintain marketing and distribution of the brand.
- 3. Wholesaler:** Wholesalers are companies or individuals who purchase input supply in large volume. Wholesaler may buy and sell different brands of input supply in the market.
- 4. Retailer Stores:** The characteristic of seed retail store is usually a store that sells agricultural products and plants and various types of products, including ornamental plants and garden tools.

5. Farmer Group: Farmer group obtain and purchase input supplies from retail store from the surrounding areas or directly from seed wholesaler. Seed and fertilizer are bought thrice in a year aligning with the rice planting seasons in the country.

Farmer: A rice farmer typically own a total land of 1.1 ha and requires around 20 kg of seed, 250 kg of fertilizer and 1.5 liter of pest control prior to the planting season.

Cultivating season of rice in Indonesia is generally up to 3 times in a year which translates to 4 months for each season. Seasons are divided and classified into Cultivating Season 1 (Rainy Season) which started in November up to February, Cultivating Season 2 (*Gadu* Season) which started in March up to June, and Cultivating Season 3 (Dry Season) which started in July up to October.

Figure 8 - Value per Transaction and Total Transaction by Value Chain Actors - Supplier Side



Farmers under a Farmer Group are supplied with seed and fertilizer every planting season which can be obtained through retailer store from the surrounding area. Moreover, farmer group can also obtain seeds, fertilizers and pesticides directly from

wholesalers that can appear in form of individual or a company that purchase input supply from agents in large volume and several types of brands to the market.

A total land owned by 1 farmer group in Indonesia is around 80-140 h.a or approximately 1.1 h.a per farmer. Table below explains the supplies input of fertilizers and seed products for each planting seasons.

Table 3 - Payment System by Value Chain Actors - Supplier Side

No.	Channel	Payment Freq. per Actor (Yearly)	No. of Actors (Buyers)	Avg. Purchase Volume per Transaction			Avg. Purchase Value in IDR / Transaction	Total No. of Transaction (Per Year)	Total Payment Value in IDR (Per Year)
				Seed (Kg)	Fertilizer (Kg)	Pest Control (Liter)			
1	Farmer Group from Farmers	6	13,000,000	132	11	1	2,205,834	78,000,000	172,055,062,935,000
2	Retail Store from Farmer Group	8	78,000	9,930	794	60	165,437,561	624,000	103,233,037,761,000
3	Wholesaler from Farmer Group	6	52,000	13,240	1,059	79	178,849,985	312,000	55,801,195,441,200
4	Wholesaler from Retail Store	14	2,229	198,605	15,888	1,192	2,682,749,781	31,200	83,701,793,161,800
5	Agent from Wholesaler	16	1085	595,133	47,611	3,571	7,348,707,110	17,353	127,523,164,293,000
6	Supplier from Agent	18	72	8,080,935	646,475	63,750	93,133,672,133	1,301	121,212,143,800,605

The planting seasons of rice are typically 3 times in a year. The frequency of purchases and payment of farmer to farmer group of seed, fertilizer and pesticides are six times in year with an assumption of 2 payment terms for each transactions which generated the biggest total payment value among value chain actors amounted to Rp.172, 055,062,935,000.

4.1.5 Interest Level on Mobile Payment Services by Value Chain Actors – Supplier Side

As described on the value chain chart above, most transactions occur between each actors are done through cash and bank transfers. Supplier Companies, Agents and Wholesalers are willing to switch to mobile technology system in order to maximize their operating and marketing activities on providing input supplies to the farmers. However, hesitation remains due to lack of trust between actors and moreover, the willingness of farmers in using mobile to conduct the business operation particularly in payment system.

Table 4 – Interest Level on Mobile Payment Service – Supplier Side

No.	CHANNEL	INTEREST LEVEL	REASON (INTERESTED)	REASON (NOT INTERESTED)
1.	Manufacturing Company	Medium	<ul style="list-style-type: none"> • Mobile technology can help supplier companies on providing information on price and stock availability on what kind of seed, fertilizer and other input supplies needed by farmers. • Faster process payment from agent. 	
2.	Agent	Medium	<ul style="list-style-type: none"> • Assisting agents on prevailing market price and stock availability on what kind of seed, fertilizer and other input supplies needed by farmers. • Faster process payment from wholesaler 	
3.	Wholesaler	Medium	<ul style="list-style-type: none"> • Wholesaler traders would be able to provide information about brand and type of input supplies available in the market and store, where can farmer groups can obtain them. • Faster process payment from retailer stores and farmer groups 	
4.	Retailer Store	Medium	<ul style="list-style-type: none"> • Faster process of payment transaction from farmer groups and to agents and/or wholesaler. • Big amount transaction could be more secure and safe. 	
5.	Farmer Group	Low to Medium	<ul style="list-style-type: none"> • Farmer group can benefit the information regarding weather, which is one of the critical information needed on each planting seasons. • Easier access on obtaining information about farming input supplies on stock and 	<ul style="list-style-type: none"> • Poor telecommunication access in the rural areas.

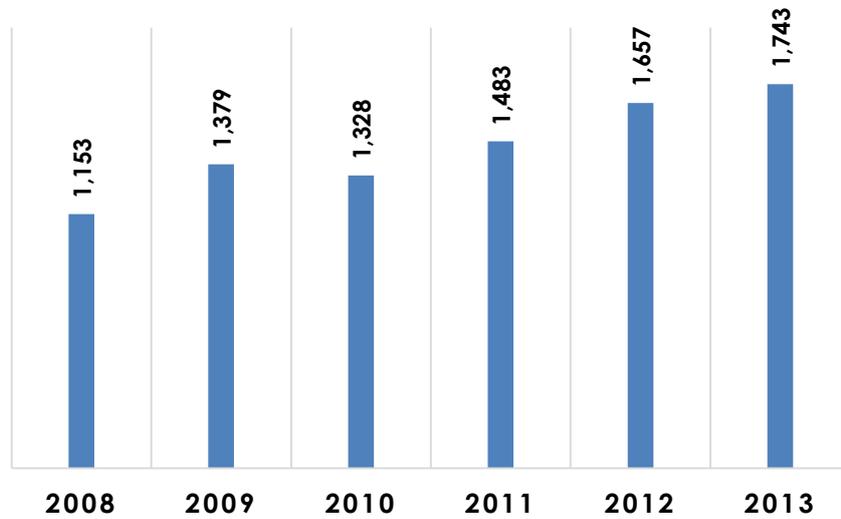
			market price.	
6.	Farmer	Low		<ul style="list-style-type: none"> • Lack of knowledge about mobile technology system advantages on helping the process of agribusiness • Poor telecommunication access in the rural areas • Unwillingness to pay for any mobile services.

4.2 Chili

Chili production in Indonesia is increasing on annual basis, from 1.48 million tons in 2011 to 1.6 million tons in 2012 or increasing for about (11%). Data from BPS also shows growth in both productivity area (from 239 thousand hectares in 2011 to 242 thousand hectares in 2012) and productivity volume in quantity (6.19 tons/hectare in 2011 to 6.84 tons/hectare in 2012).

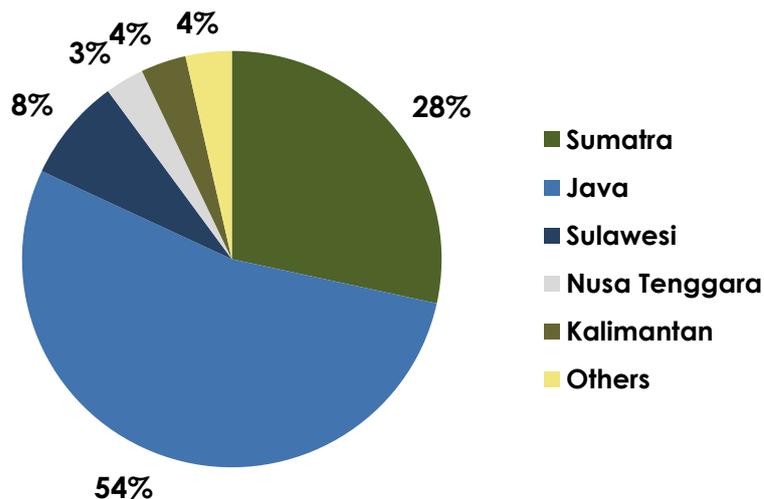
Chili's planting season is twice a year, with high production capacity during dry season and low production capacity during rainy season because chili plants are susceptible to disease at the time. Due to this inconsistency to production capacity, the price for chili could fluctuate wildly during the dry and rainy seasons.

Figure 9 - Total Chili Production in Indonesia (2009-2013)



Based on geographical coverage, more than half of chili production areas in Indonesia are located in Java (54%), followed with Sumatra (28%) and Sulawesi (8%). West Java, Aceh, and North Sumatra are the best areas in terms of productivity. Each hectares of farm in West Java can produce 12.73 tons of chili, while each hectares of farm in Aceh and North Sumatra can produce up to 11.07 and 11.11 tons of chili respectively. In most areas, the rate of productivity ranges from 3-6 tons per hectare. This situation is yet to achieve its optimal level, because chili potential for each hectare of farm is supposed to be 15-20 tons per hectare.

Figure 10 - Chili Producing Areas in Indonesia - 2012 (in hectares)



Chili needs in Indonesia is estimated to be 1.12 million tons annually. 70% of the needs (784,000 tons) are used for daily consumption (fresh), while the other 30% or 336,000 tons are used for industrial needs. There are crops shrinkage occurred at

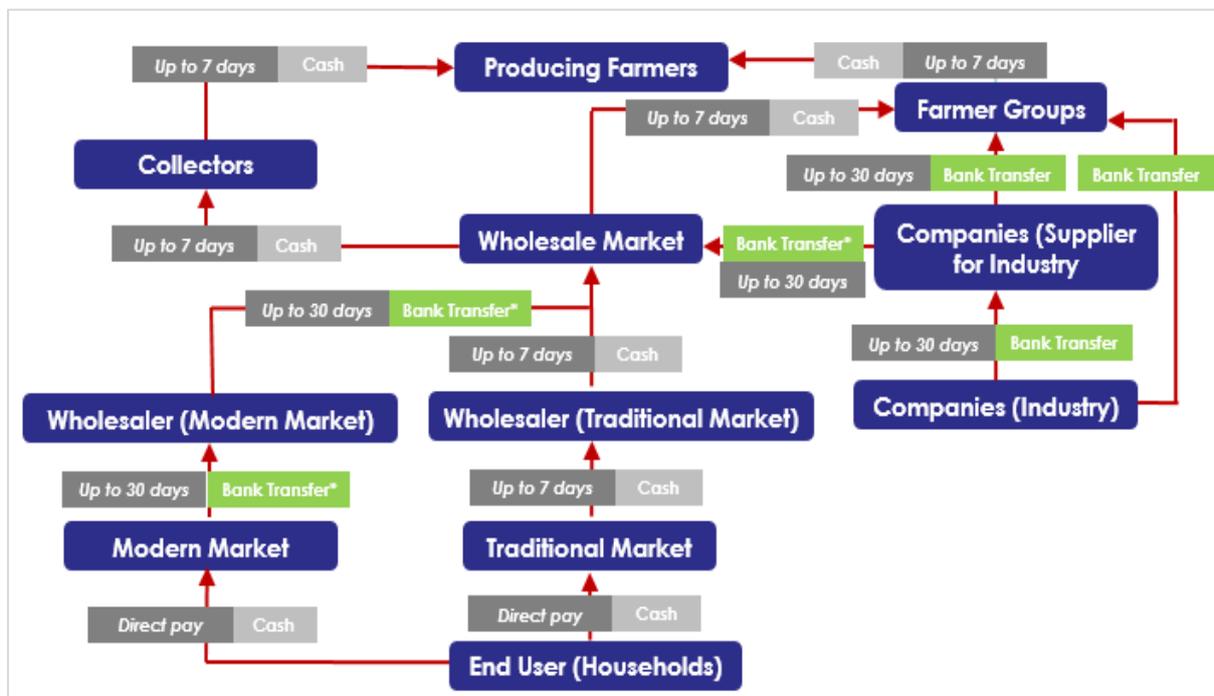
every level in the supply chain. This happened because of decaying goods since chili cannot be stored for a long time.

In 2012, Indonesia is the fourth country that produces most chili in the world (After China, Mexico, and Turkey). Despite of the high productivity, Indonesia still imports chili from other countries. In 2012, Indonesia imported 22,737 tons of chili and exported 7,575 tons of chili.

4.2.1 Value Chain System of Chili – Buyer Side

Value chain of chili in Indonesia can be fairly described in the graphic below. As seen from the graph, most of transactions within the value chain are completed in cash payment method.

Figure 11 - Value Chain System of Chili in Indonesia - Buyer Side



** A buyer industry company prefers a 'contract system' for purchasing chili. Payment conditions are generally managed through an invoice system*

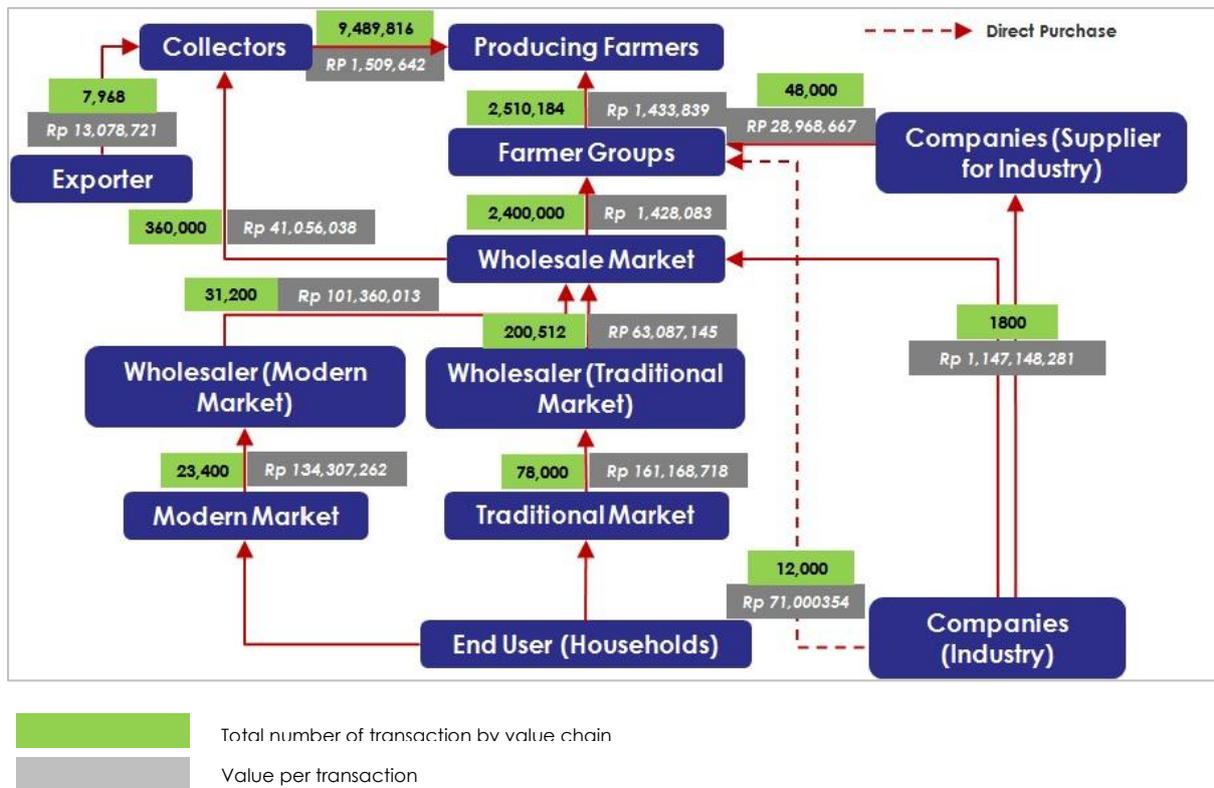
The description of actors' activities on the value chain are explained below:

- 1. Collectors:** Collectors act as traders to buy chili directly from producing Farmers. Collectors' main roles are assessment of chili's prices by quality categorization, bagging and weighing, and making payments to farmers.
- 2. Farmers Group:** Farmers Group is an affiliation among farmers living in a certain area. Being in a group enables farmers to conduct business with companies because companies can only deal with organizations who are registered in Indonesia.

-
3. **Exporters:** Exporters are companies or individuals that sell chili produced by farmers to other countries.
 4. **Companies (Supplier to Industry):** Companies (Supplier to industry) are the procurer commissioned by companies (industry) to provide raw materials for the production. In practice, they assist farmers by ensuring consistent chili supplies throughout the year.
 5. **Wholesale Market:** Collectors act as traders to perform the function of buying chili from both Collectors and Farmers' Groups. Their main roles are assessment of chili prices, bagging and weighing, and making payments to Collectors and Farmers Groups. Examples of wholesale markets are Pasar Induk Cipinang and Kramat Jati.
 6. **Wholesaler (Traditional and Modern):** Buyers from wholesale market distribute chili to traditional and modern market respectively. Wholesalers for modern market are obtaining superior product quality than those of traditional market.
 7. **Companies (Supplier for Industry):** These companies act as buyer for industry. They could cooperate with farmer groups (as middleman between companies (industry) and the farmer groups, or they could also act as middleman between the wholesale market and the company (industry).
 8. **Modern Market:** Distribution channels to household consumers. Examples of modern markets are Giant, Carrefour, Superindo, etc.
 9. **Traditional Market:** Distribution channels to household consumers.
 10. **Companies (Industry):** Manufacturing Companies are users who necessitate chili as raw materials for their production. Examples of Manufacturing Companies are Heinz, Indofood, and Wings Food.
 11. **End User:** End users or households purchase chili products from traditional market and modern market. Traditional market posted bigger transaction from end user for its competitive pricing as compared to the modern market.

Most transactions in value chain of chili are occurring between collectors and farmers with accounted around 9.5 million of transactions. In terms of value, the biggest value per transaction occurred on the link between wholesalers (traditional) and wholesaler market. The total amount for the transactions annually could reach Rp 17.3 trillion.

Figure 12 - Value per Transaction and Total Transaction by Value Chain Actors – Buyer Side



Chili plant can be harvested after 8 – 10 weeks old. For each planting time, farmers could harvest their chili for 12-14 times. The harvest could not be stored for a long time, so they have to be sold immediately to both aggregators and companies. During dry season, the farmers usually sell their crops to aggregators for Rp 11,000 – 13,000/kg. While for farmer groups cooperation with companies, there is agreement that the base price for the company to buy the chili is Rp 9,000/kg.

When there is deviation between the price from the market (aggregator) and the price from the company, then the company will add half of the deviation to the price (for example: The price from the company is Rp.9,000, when the price from aggregators reach Rp. 13,000/kg, then the company will pay $Rp.9,000 + (11,000 - 9,000):2$ (for the farmers). The table on buyer actors' value and payment is listed below:

Table 5 - Payment System by Value Chain Actors - Buyer Side

No.	Channel	Total Volume in Tons per Value Chain	Payment Freq. Per Actor (Yearly)	No. of Actors (Payment Receiver)	Avg. Purchase Volume in Tons /Transaction	Avg. Purchase Value in IDR /Transaction	Total No. of Transactions (Per Year)	Total Payment Value in IDR (Per Year)
1	Farmers from Collectors	1,165,682	24	395,409	0.12	1,509,642	9,489,816	14,326,226,986,900
2	Farmers from Farmers Group	292,856	24	104,591	0.117	1,433,839	2,510,184	3,599,200,240,000
3	Collectors from Exporter	7,865	24	332	0.987	13,078,721	7,968	104,211,250,000
4	Collectors from Wholesale Market	1,115,485	120	3,000	3.099	41,056,038	360,000	14,780,173,600,000
5	Farmer Group from Company (Supplier)	113,140	12	4,000	2.357	28,968,667	48,000	1,390,496,007,600
6	Farmer Group from Wholesale Market	278,877	120	20,000	0.116	1,428,083	2,400,000	3,427,399,559,000
7	Farmer Group from Company (Industry)	69,325	12	1,000	5.777	71,000,354	12,000	852,004,250,000
8	Wholesale Market from Wholesaler (Modern)	225,888	52	600	7.240	101,360,013	31,200	3,162,432,420,000
9	Wholesale market from Wholesaler (Traditional)	903,552	52	3,856	4.506	63,087,145	200,512	17,314,769,275,560
10	Wholesale Market from Companies (Industry)	161,629	12	150	89.794	1,257,116,000	1,800	2,586,067,200,000
11	Wholesaler (Modern) from Modern Market	196,424	52	450	8.394	134,307,262	23,400	3,142,789,920,000
12	Wholesaler (Traditional) from Traditional Market	785,698	52	1,500	10.073	161,168,718	78,000	12,571,160,000,000
13	Companies (Supplier from industry) from Companies (Industry)	107,753	12	150	59.863	1,147,148,281	1,800	1,400,786,400,000

*]Due to the diversification of numbers of actors, the obtained number of actor above is based on assumption that each payment is a transaction between farmer and different actor and therefore there is no same actor in 2 transactions.

4.2.2 Interest Level on Mobile Payment Services by Value Chain Actors – Buyer Side

Table below summarizes the interest level on mobile payment services of each actor in value chain system of chili business in Indonesia.

Table 6 - Interest Level on Mobile Payment Service – Buyer Side

No.	CHANNEL	INTEREST LEVEL	REASON (INTERESTED)	REASON (NOT INTERESTED)
1.	Producing Farmers	Low		<ul style="list-style-type: none"> Chili farmers still prefer cash, since it is more liquid and practical to spend for their daily needs Limited ownership of mobile phone of chili farmers in some region in Indonesia Poor signal and undeveloped telecommunication infrastructure.

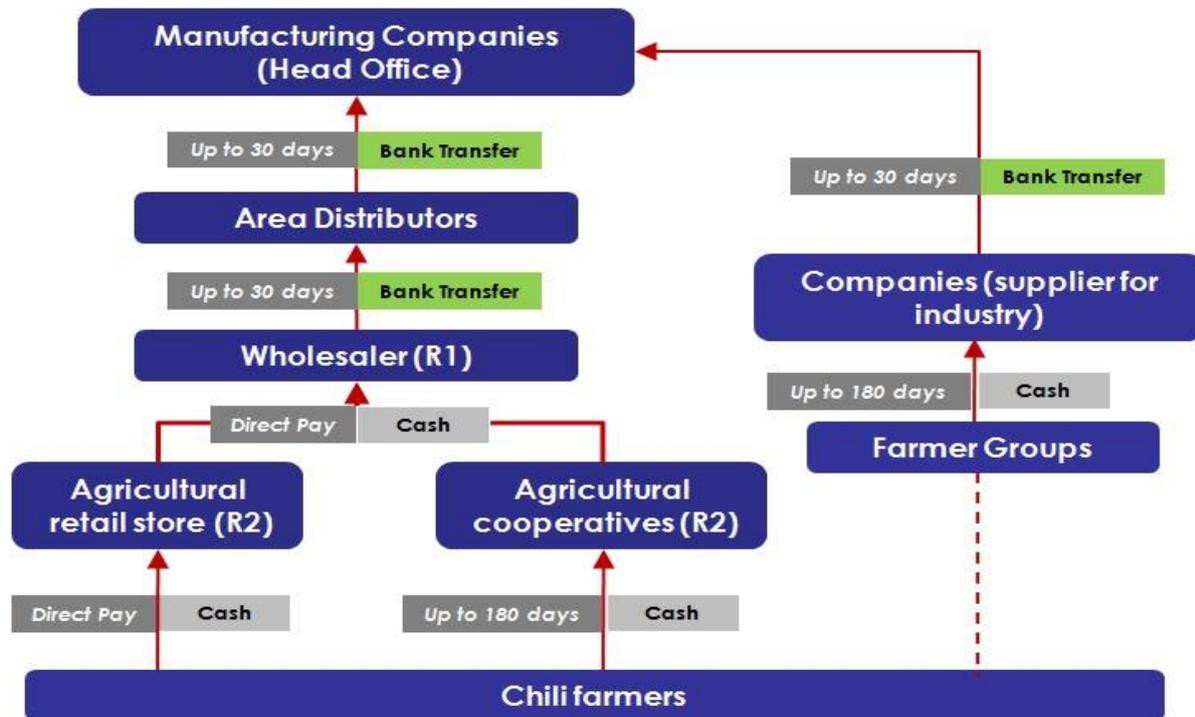
2	Farmer Group	Low to Medium	<ul style="list-style-type: none"> • Easier access on receiving and checking payments from traders in wholesaler market and supplier for industry companies. • Time saving on checking payments on multiple transactions 	<ul style="list-style-type: none"> • Poor signal and undeveloped telecommunication infrastructure • Lack of knowledge of farmers which would be difficult to implement the mobile payment technologies
3	Wholesale Market	Medium	<ul style="list-style-type: none"> • Traders in wholesale market can save more time on each payment transaction • Traders could also check availability stock in each collectors 	
4	Collector	Low		<ul style="list-style-type: none"> • Collector prefer cash because they can directly check products at farmers, with regards to the quality and quantity • Collector is usually subscribed to a specific farmer group with regular transaction and quantity therefore assured to have available stock every purchase transaction.
5	Companies (industry)	Low		<ul style="list-style-type: none"> • Lack of trust from actors who involved in the payments transactions • Prefer bank transfer for payment • Contract is more reliable to each collectors

6	Wholesaler (Traditional and Modern)	Medium	<ul style="list-style-type: none"> • Wholesaler for traditional and modern market would consider switching since they have frequent transactions to the both type of market. It would be a time saver if the mobile payment technology is applied. • Safety wise • Wholesaler can inform how much chili stock is available to sell to the market 	<ul style="list-style-type: none"> • Lack of trust from actors who involved in the payments transactions
7	Companies (Supplier for Industry)	Medium	<ul style="list-style-type: none"> • Easy access to the information of chili stock to the industry companies as well as from the wholesale market and farmer group 	<ul style="list-style-type: none"> • Not all farmer groups are willing to switch to mobile payment system. Conventional way is still preferred.
8	Modern Market	Medium	<ul style="list-style-type: none"> • Accessible information with regards to the prevailing selling price of rice and stock availability on tier 1's level • Faster payment process from and to each actors in the value chain system 	

4.2.3 Value Chain System of Chili – Supplier Side

Seeds and fertilizer used by the farmers are coming from three sources as described in the below figure:

Figure 13 - Value Chain System of Chili - Supplier Side



The description of actors' activities on the value chain are explained below:

1. **Manufacturing Companies:** The seeds from this distributor are usually the imported or the hybrid ones. The types of chili seed is distributed through several value chain, from distributors to local agricultural stores or kiosks. The production rate for chili from this type of seed is more than other types of seed, but they also require extra care, fertilizers, and pesticides.
2. **Area Distributors:** These are the distributors for the seeds and fertilizers located in big cities and they are usually appointed directly from the manufacturer. They are the ones who usually conduct business with the wholesalers.
3. **Wholesalers:** Wholesalers are bigger stores that supply various agricultural needs. They are conducting business with agricultural retail store and agricultural cooperatives.
4. **Companies (supplier for industry):** The seeds from this distributor usually have followed certain standard set by the company (industry), following the types of chili used in the production. The type of chili could be different than those cultivated by other chili farmers that do not engage in cooperation with the manufacturer. It is said that this difference could also avoid incidents where the farmers sold their crops to other entities beyond the price ceiling.
5. **Agricultural Retail Store (R2):** Most farmers buy their products in this agricultural retail store via cash.

6. **Agricultural Cooperatives (R2):** Agricultural cooperatives are made by the farmers, usually to help them with crops financing.
7. **Farmer Groups:** Farmers Groups affiliation between farmers living in a certain area. Being in a group help farmers in conducting business with companies because they can produce lots of chili (collective harvest).

Farmers in Indonesia plant chili for twice a year. The first harvest occurs approximately 8 weeks after the planting, and it could be re-harvested in every 5 days after the initial harvest. Generally, a chili plant can be harvested for 12-14 times.

Supply chain for chili crops involves 8 channels from the farmers to the supply manufacturing companies. The table below describes the entire supply channels and the amount of transaction and payment value made by each value actors:

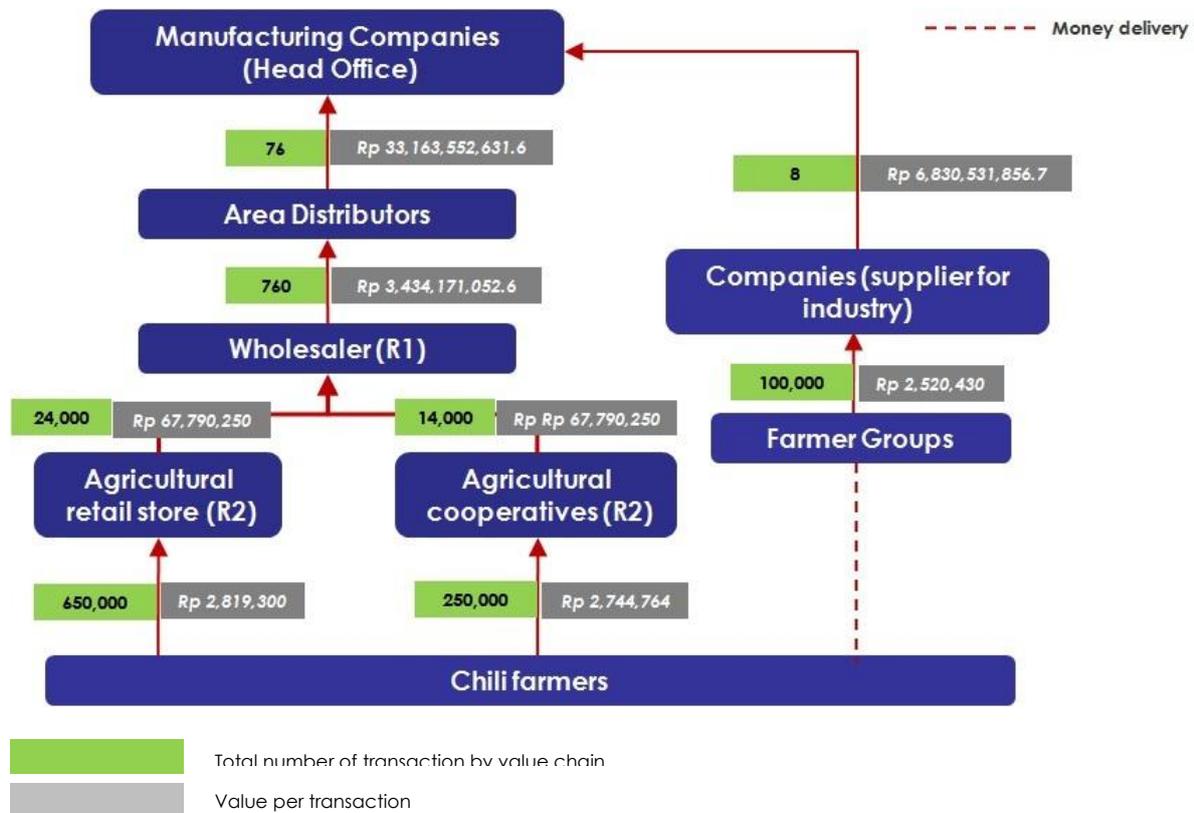
Table 7 - Payment System by Value Chain Actors - Supplier Side

No.	Channel	Payment Freq. per Actor (Yearly)	No. of Actors (Buyer)	Avg. Purchase Volume per Transaction			Avg. Purchase Value in IDR / Transaction	Total No. of Transaction (Per Year)	Total Payment Value in IDR (Per Year)
				Seed (Kg)	Fertilizer (Kg)	Pest Control (Liter)			
1	Agricultural Retail Store from Farmers	2	325,000	0.05	217.80	8.71	2,819,300	650,000	1,832,545,000,000
2	Agricultural Cooperatives from Farmer	2	125,000	0.05	217.80	8.71	2,744,764	250,000	686,191,000,000
3	Companies (Supplier from Industry) from Farmer Groups	2	50,000	0.05	217.80	8.71	2,520,430	100,000	252,043,000,000
4	Wholesaler from Agricultural Retail Store	12	2,000	1.21	5,445	217.8	67,790,250	24,000	1,626,966,000,000
5	Wholesaler from Agricultural Cooperatives	12	1,167	1.21	5,445	217.8	67,790,250	14,000	949,063,500,000
6	Area Distributors from Wholesalers	12	63	63.68	286,578.95	11,463.16	3,434,171,052.6	760	2,609,970,000,000
7	Manufacturing Companies from Area Distributors	12	6	636.84	2,865,789.47	114,631.58	33,163,552,631.6	76	2,520,430,000,000
8	Manufacturing Companies from Companies (Supplier from Industry)	2	4	1,210	5.27	948.74	6,830,531,856.7	8	54,644,254,854

Due to instability of fertilizer supply in the market, farmers are worried that they might be unable to get fertilizer (or must buy it at much higher price) when they need it. The anxiety about fertilizer shortage has driven farmers to purchase all the fertilizer they needs for each planting at once.

More than half of the supply transactions on the farmer level are being done between agricultural retail store and farmers. Approximately there are 650,000 thousand transactions conducted every year, with monetary value for Rp 1.8 Trillion. Supply transactions between agricultural cooperatives and the farmers came at second with 250,000 transactions because there are less agricultural cooperatives compared with agricultural retail stores. In total, there are about 1 million supply transactions made annually by the farmer agricultural retail store, agricultural cooperatives and companies (supplier from industry), with monetary value for about Rp 2, 75 Trillion.

Figure 14 - Value per Transaction and Total Transaction by Value Chain Actors – Supplier Side



Because there are more actors involved in the lower level of supply chain, it is logical that there are more transactions occurred at this level. Most transactions from supplier side occurred on the lower level; that is between farmers and agricultural retail store and cooperatives (650,000 and 250,000 transactions respectively). There are limited transactions between companies (supplier for industry) and farmer groups because they are using agreement system, in which the company will help the farmers by providing seeds and fertilizers needed, on the condition that the farmers must sell their crops to the company.

4.2.4 Interest Level on Mobile Payment Services by Value Chain Actors – Supplier Side

The interest level of chili farmers and value chain actors on switching to mobile payment service is still considered low. Most of chili farmers are located in the area with poor signal giving them a hard time to access a proper telecommunication services such as SMS or phone call.

Other value actors such as retail stores and cooperatives also still have not found the importance of the mobile payment system yet. Poor signal and limited knowledge on the technology are considered to be the reason behind this problem.

Higher up in the supply value chain, the area distributor and the manufacturing companies also do not see the importance of using mobile payment system technology. It is considered to be unsupportive for corporate-related business activities.

Table 8 – Interest Level on Mobile Payment Services - Supplier Side

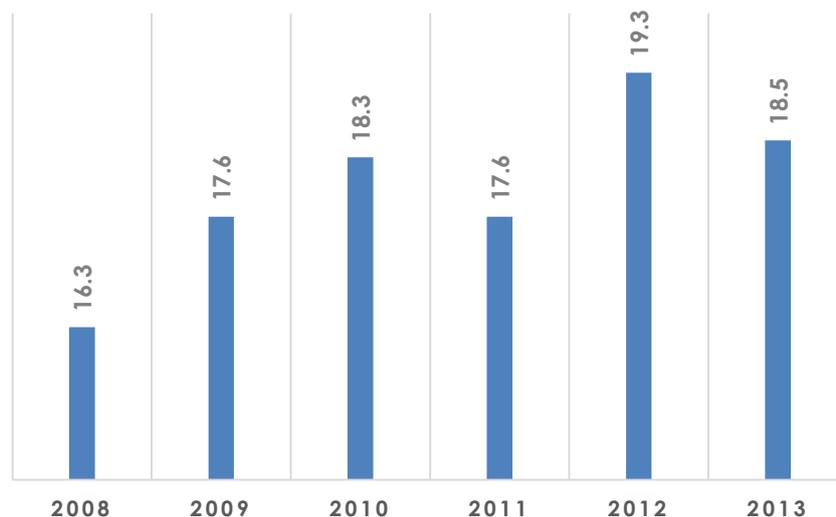
No.	CHANNEL	INTEREST LEVEL	REASON (INTERESTED)	REASON (NOT INTERESTED)
1.	Producing Farmers	Low	<ul style="list-style-type: none"> Farmers may be provided with the information with regards to the input supplies products' price, quality and quantity information 	<ul style="list-style-type: none"> Limited ownership of mobile phone of chili farmers in some region in Indonesia Poor signal and undeveloped telecommunication infrastructure.
2.	Agricultural Retail Store	Low		<ul style="list-style-type: none"> Poor access to the internet in most of region in Indonesia
3	Agricultural Cooperatives	Low		<ul style="list-style-type: none"> Poor access to the internet in most of region in Indonesia Do not consider the mobile payment system is necessary in the business Prefer to visit the farmers to check about chili production in quality and quantity directly
4	Wholesaler	Low		<ul style="list-style-type: none"> Wholesaler is not interested at the moment since they are prefer to use telephone in communicating about the products and prefer to pay in cash to make sure about the quality of chili products

5	Area Distributor	Low	<ul style="list-style-type: none"> • Area distributor is still preferred for bank transfer on doing the payment. • Bank account is usually for corporate thus need to an authorized person on checking each payment transaction
6	Manufacturing Companies	Low	<ul style="list-style-type: none"> • Bank transfer is preferable due to corporate bank account used in payment transaction to area distributor companies

4.3 Maize

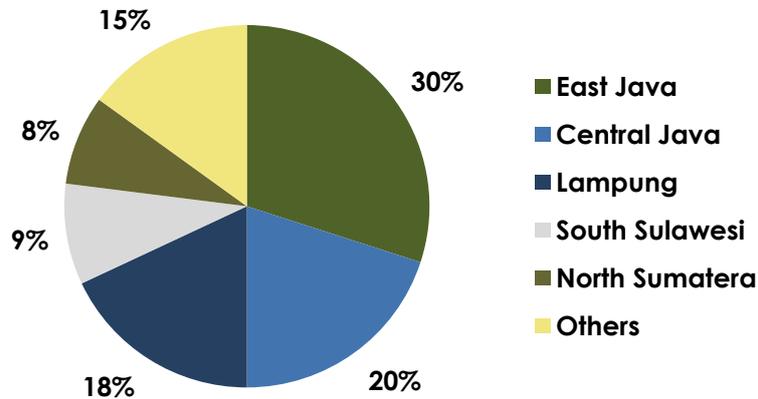
Indonesia's total Maize production in 2013 is estimated with a figure of 18.5 million tons. The Maize production increased 1 million tons (5.3%) compared to 2011. The increasing number of Maize production is supported by increasing Maize field to 4 million hectare and productivity growth up to 1.74 quintal/hectare. Value of Maize production in 2013 is projected to top around 62 Trillion rupiah.

Figure 15 - Total Maize Production in 2008-2013 (in Million Tons)



Maize farming in Indonesia mostly located in East Java/ Madura (5 million tons/year), Central Java (3,3 million ton/years), Lampung (2 million ton/years), and South Sulawesi (1, 3 million ton/ years).

Figure 16 – Maize Producing Areas in Indonesia – 2012 (in Million Tons)



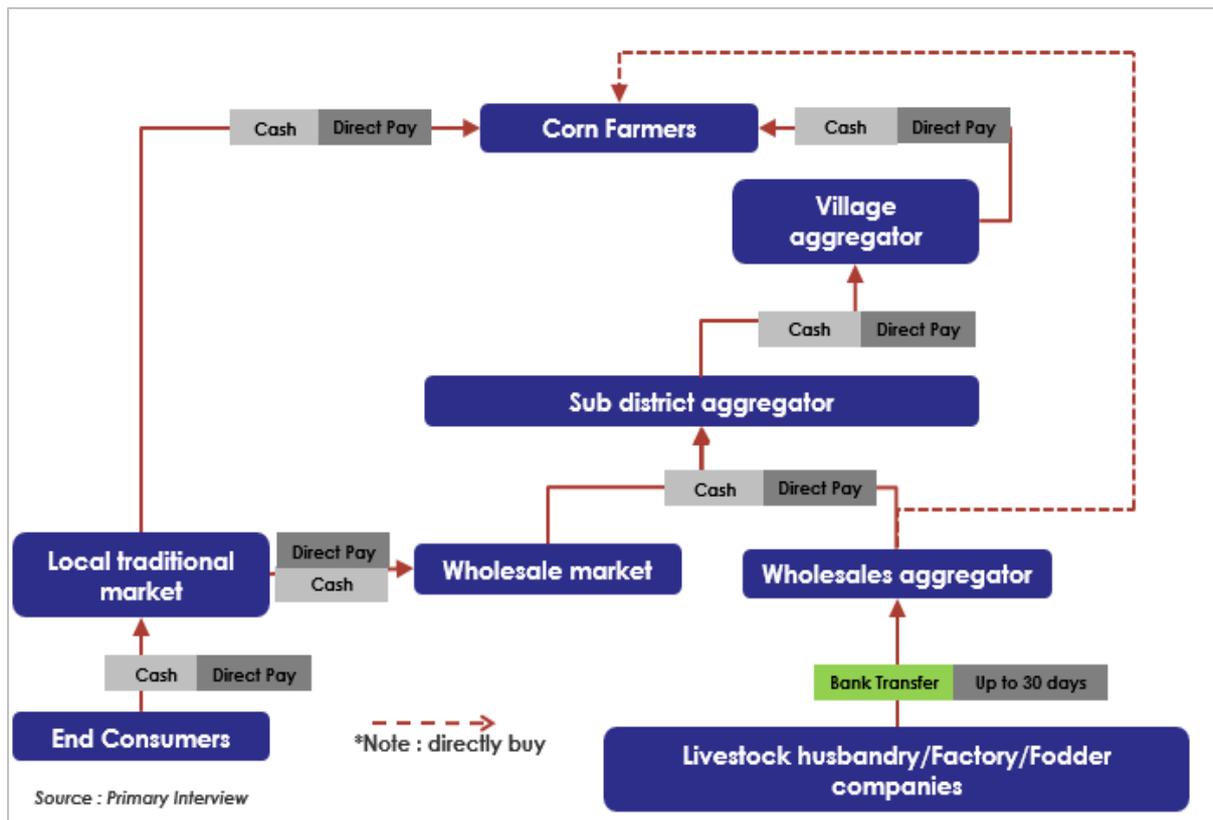
Demand for Maize in Indonesia are 65% for consumption, 25% for livestock feed, 5% for raw material for industry, and 5% for other purpose. Generally, types of Maize that grow in Indonesia are hybrid Maize (40%) and non-hybrid (60%) Maize seed. Hybrid Maize seed is expensive but preferred by farmers because its higher resistance to pests and the Maize will mature faster; so the Maize productivity could be maximized.

In 2012, total number of imported Maize in Indonesia constituted to 1.7 million tons and in 2013 estimated reaching 2 million tons, due to highly demand Maize for livestock feed. Around 90% of Maize for fodder industries are imported. In 2012, total number of export Maize recorded a figure of 20,000 tons.

4.3.1 Value Chain System of Maize – Buyer Side

Overall in Indonesia, there are two types of flow chart in Maize buyer value chain; type 1 which is involving 5 value chain actors until end users (consumers and factories) and also type 2 which is only involving 3 value chain actors. In general, main flow of Maize buyers in Indonesia is on the subsequent figure.

Figure 17 - Value Chain System of Maize (Overall) – Buyer Side



The actors on the value chain are listed below:

1. **Corn Farmers** in Indonesia are estimated reaching 6,100,000 farmers. Each farmers mostly cultivates corn in 1 hectare of land.
2. **Village Aggregator** or “*PengepulDesa*” is a trader who lived in/near the Maize farmer’s village, they buy Maize yields in form of “*jagung-pipilan*” from farmers. Village aggregators or “*PengepulDesa*” visit to the farmers’ home to buy Maize harvested, so the farmers do not pay extra fee (for carry and delivery).

Generally, Village aggregators buy Maize in amount 5-6 tons from farmers. Village aggregators appraise the Maize price from farmers based on its quality and drought level of Maize. Payment from Village aggregators to Maize farmers is paid by cash.

3. **Sub-district Aggregator** or “*PengepulKecamatan*” is a trader who lived near of central sub-district area, and buys Maize from Village aggregators and sells to Wholesale aggregator or “*PedagangBesar*” and also supply the Wholesale market “*PasarInduk*”. Sub-district aggregator already has warehouse and small truck, to distribute Maize crops.

Generally in one harvest season, Sub-district aggregators are able to buy Maize from 2-4 Village aggregators; the amount weighs up to 20-30 tons, Wholesale aggregators sometimes re-dried the Maize to sell it to Wholesale aggregators. Payment for Village aggregators is paid by cash after Sub-district aggregators received the Maize.

- 4. Wholesale Aggregator** or "*Pedagang Besar*" is a supplier for factory and Fodder Company. Factory and Fodder Company already have contract system to Wholesale aggregator. In some area; farmers, village aggregators, and sub-district aggregators sell directly to Wholesale aggregator or "*Pedagang Besar*". So, mostly Wholesale aggregator has a large capital because they must pay in cash to farmers, village aggregators, and sub-district aggregators.

Wholesale aggregators are able to buy Maize in amount of 50-100 tons. Payment method from Wholesale aggregator to their suppliers (farmers, village aggregators, and sub-district aggregators) are paid by cash. Payment from Wholesale aggregator to Factory and Fodder Company are paid by bank transfer, due to contract system. Wholesale aggregator or "*Pedagang Besar*" sometimes holds the Maize stocks in their warehouse and put on hold trading activities in compliance to supply and demand.

- 5. Wholesale market** or "*Pasar Induk*" is a large market located in central district or in outer city. Sub-district aggregators supply the trader in wholesale market, and wholesale market will supply the groceries trader in Traditional market in their area and sell the Maize to consumer (end users).
- 6. Traditional market** or "*Pasar Tradisional*" in Indonesia is around 13,450 markets. In traditional market, there are many kind of trader; retail store, groceries, fish seller, fruit seller, etc.
- 7. Livestock husbandry/ Factory/Fodder Company** need Maize as raw material for their industry. Factory and Fodder Company usually have several Wholesale aggregator or "*Pedagang Besar*" who supplies to their factory and pays them by bank transfer.
- 8. End consumer** is consumers who buy corn in traditional market. They buy corn for direct consumption as vegetable.

Payment systems in Maize value chain system in Indonesia are mostly done in cash and bank transfer. According to the interview results conducted, payment through cash is preferred. Village aggregators and Sub-district aggregators are visited farmers to buy Maize harvest. Banks involved include BRI and BCA.

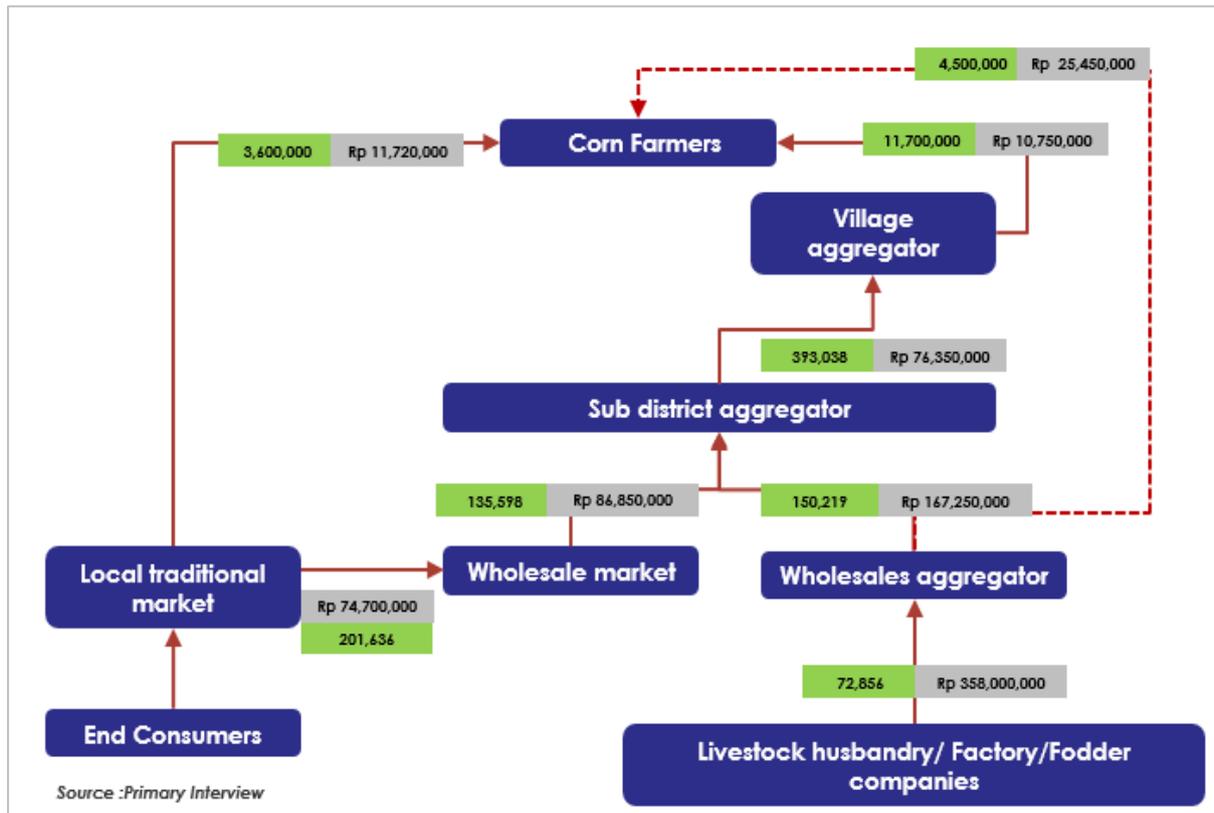
Table 9 - Payment System by Value Chain Actors – Buyer Side

No.	Channel	Total Volume in Tons per Value Chain	Payment Freq. Per Actor (Yearly)	No. of Actors (Payment Receiver)	Avg. Purchase Volume in Tons /Transaction	Avg. Purchase Value in IDR /Transaction	Total No. of Transactions (Per Year)	Total Payment Value in IDR (Per Year)
1	Farmers from Village aggregator	12,031,731	3	3,900,000	5	IDR 10,750,000	11,700,000	IDR 125,775,000,000,000.00
2	Farmers from Traditional market	1,851,043	6	600,000	5	IDR 11,725,000	3,600,000	IDR 42,210,000,000,000.00
3	Farmers from Wholesale aggregator	4,627,608	3	1,500,000	10	IDR 25,450,000	4,500,000	IDR 114,525,000,000,000.00
4	Village aggregator from Sub-district aggregator	11,791,145	6	65,506	30	IDR 76,350,000	393,038	IDR 30,008,464,025,000.00
5	Sub-district aggregators from Wholesale aggregator	7,579,948	24	6,317	50	IDR 167,250,000	151,599	IDR 21,943,949,460,000.00
6	Sub-district aggregators from Wholesale market	4,067,945	24	5,650	30	IDR 86,850,000	135,598	IDR 15,193,774,575,000.00
7	Wholesale market from Traditional market	5,071,960	24	10,567	20	IDR 74,700,000	253,598	IDR 16,965,706,200,000.00
8	Wholesale aggregator from factory/fodder company	12,207,556	30	4,069	100	IDR 358,000,000	122,076	IDR 43,703,050,480,000.00

**]Due to the diversification of numbers of actors, the obtained number of actor above is based on assumption that each payment is a transaction between farmer and different actor and therefore there is no same actor in 2 transactions.*

Farmers sell Maize to Village Aggregator, Traditional Market, and some also sell directly to Wholesale aggregator. Maize harvest is 3 times a year; so in farmers' layer, selling frequency to Village Aggregators and Wholesale Aggregator is 3 times in a year. Average purchase value by Village Aggregator is Rp 10,750,000.

Figure 18 - Value per Transaction and Total Transaction by Value Chain Actors – Buyer Side



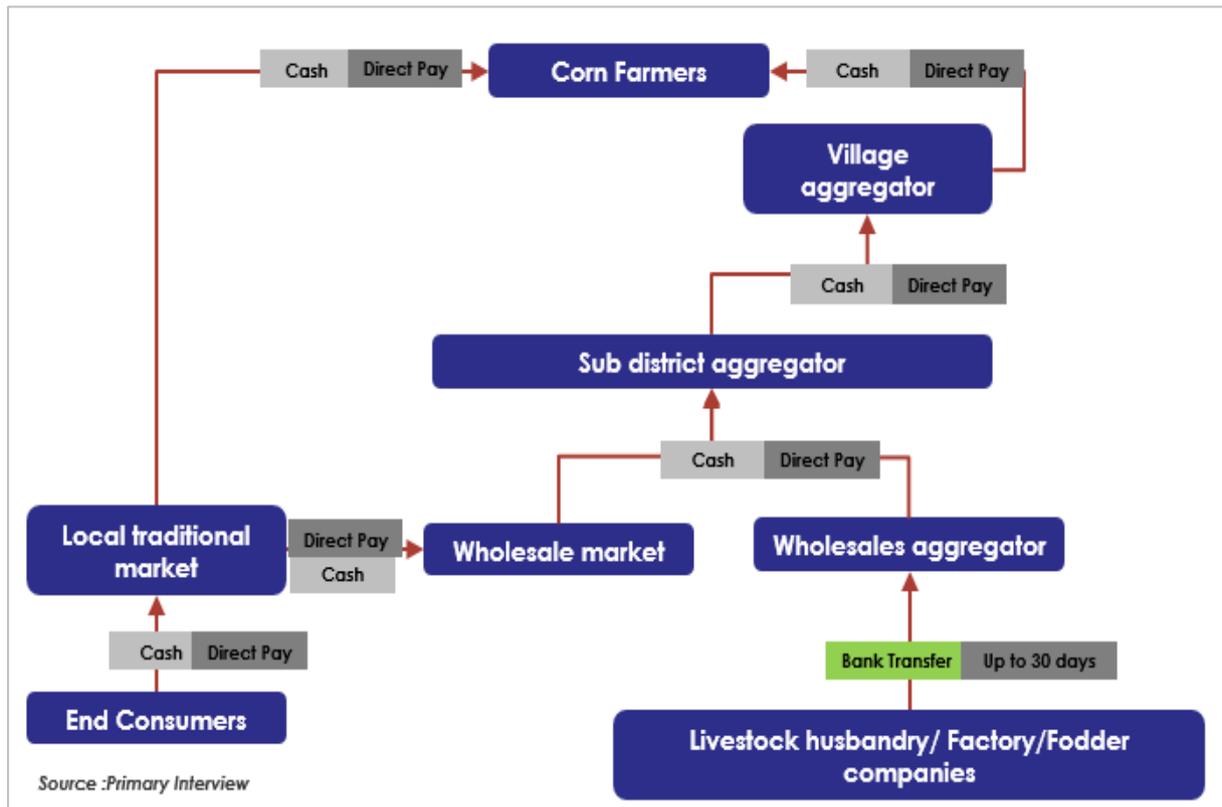
Total number of transaction by value chain
 Value per transaction

Cash is mostly used as payment method between actors in the value chain system of Maize business in Indonesia. At national level, mostly transactions occur between farmers and Village aggregators accounted for 11.7 million transactions.

4.3.2 Other Type of Value Chain System of Maize – Buyer Side

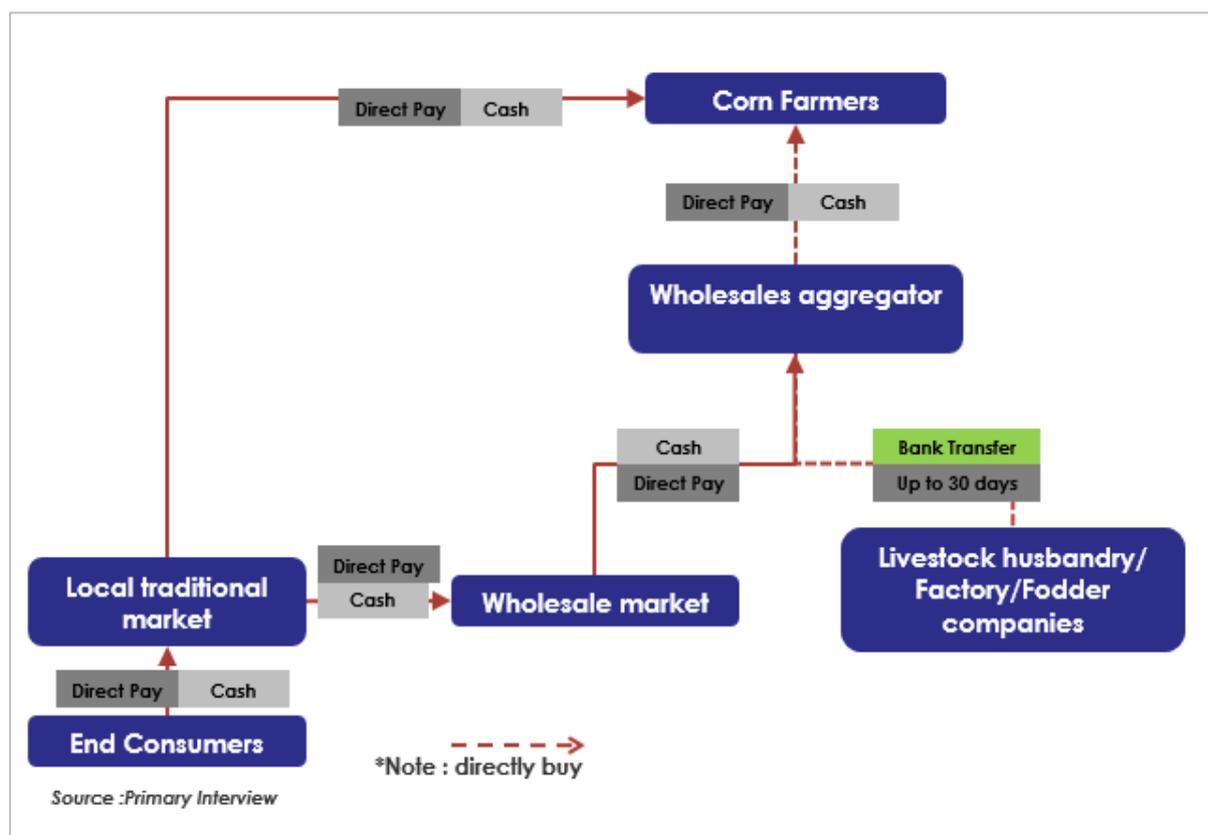
There are two other different types of value chain available in Indonesia for Maize. **Value chain type 1** is more complicated. It requires intermediate traders who have important role to distribute Maize harvest from farmers to end users. Those intermediate traders are: Village aggregator, Sub-district aggregators, Trader in wholesale market, Trader in traditional market, and Wholesale aggregator. Below is flowchart of value chain type 1:

Figure 19 - Value Chain System of Maize (Type 1) – Buyer Side



Value chain type 2 is simpler than type 1; it only takes 3 actors (Wholesale aggregator, wholesale market, and traditional market) to the consumer and Factory/ Fodder Company (end users). Type 2 occurs in some areas in Indonesia which transportation and infrastructure are relatively good. These conditions facilitate the Maize farmers to sell their harvest directly to Wholesale aggregators or “Pedagang Besar”. Below is the second type value chain available in Indonesia.

Figure 20 - Value Chain System of Maize (Type 2) – Buyer Side



4.3.3 Interest Level on Mobile Payment Services by Value Chain Actors – Buyer Side

Wholesaler aggregator and sub-district aggregators are considering on switching to mobile payment services in order to help them to have an easier access of the maize price information in the market. However, lack of trust on making payment via online would be one of the reasons of actors that need to be solved.

Table 10 - Interest Level on Mobile Payment Services - Buyer Side

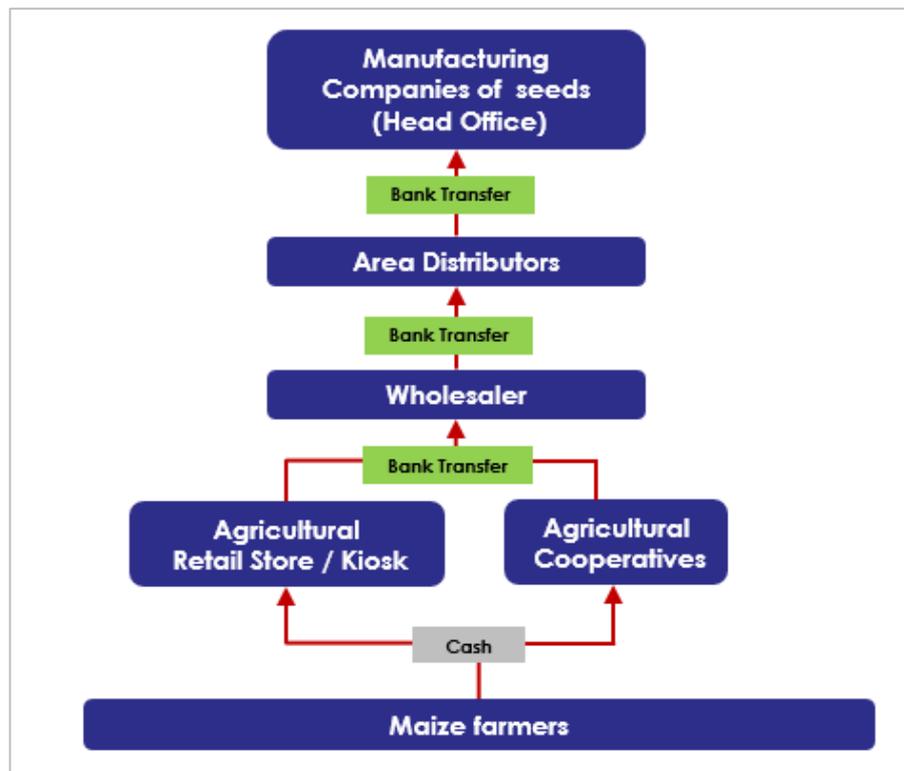
No.	CHANNEL	INTEREST LEVEL	REASON (INTERESTED)	REASON (NOT INTERESTED)
1.	Farmer	Low		<ul style="list-style-type: none"> Farmer's buyers and suppliers are still paid the farmers in cash. Farmers still prefer payment system in conventional way (cash can be used right away to buy personal /family's needs). Limitation of telecommunication access to the rural areas and non-ownership of

				mobile phone.
2	Village Aggregator	Low		<ul style="list-style-type: none"> Poor telecommunication access in the rural areas Lack of trust from other actors who make payments.
3	Traditional Market	Low		<ul style="list-style-type: none"> Traders in traditional market are used to pay supplier and receive payment from their consumer by using cash.
4	Wholesale aggregator	Medium	<ul style="list-style-type: none"> Accessible information with regards to the prevailing purchase price of Maize-finely from sub-district aggregators. Wholesale aggregator has strong capital; and buy Maize from numbers of farmers and sub-district aggregator. Already familiar with mobile banking from bank. Mobile payment to check the transferred payment from company/ fodder company. 	<ul style="list-style-type: none"> Lack of trust from actors who involved in the payments transactions.
5	Sub-district aggregator	Medium	<ul style="list-style-type: none"> Accessible information with regards to the prevailing purchase price of Maize-finely from village aggregators. 	<ul style="list-style-type: none"> Lack of trust from actors who involved in the payments transactions.
6	Wholesale market	Low		<ul style="list-style-type: none"> Traders in wholesale market or "PasarInduk" are used to pay supplier and receive payment from their consumer by using cash.
7.	Livestock husbandry/ Factory/ Fodder Company	Low	<ul style="list-style-type: none"> Sophisticated organization; familiar with electronic payment 	<ul style="list-style-type: none"> Large scale user; payment involving many departments (procurement, finance, staff, etc.)

4.3.4 Value Chain System of Maize – Supplier Side

Mostly Maize farmers in Indonesia are still using non-hybrid Maize seeds. Below is flowchart of seed supplier value chain:

Figure 21 - Value Chain System of Maize– Supplier Side



The definition and activities of each actor are explained as below:

1. **Manufacturing company** produces Maize seed (hybrid and non-hybrid variety) or fertilizer, then send the products to area distributors in some big cities in Indonesia (Jakarta, Surabaya, Medan, Makassar, etc). Mostly hybrid-Maize seeds that used by farmers are produced by PT BISI (Charoen Pokphan Group), Syngenta, PT Bayer Indonesia, PT. Shang Hyang Seri, and PT. Dupont Indonesia (Pioneer). Fertilizers mostly used by farmers are Urea, SP, and KCL.
2. **Area distributors** supply the products to Wholesaler. Area distributors are not prohibited to sell the seed directly to farmers.
3. **Wholesaler** is a supplier of Agricultural retail store/ kiosk and Agricultural cooperatives.
4. **Agricultural retail store/ kiosk** exist in village area until sub-district area. Farmers buy seeds in this channel due to its easiness of access.

-
5. **Agricultural cooperatives** are existed in village area until sub-district area. Usually it is an agricultural kiosk which has legal entity as cooperative.
 6. **Maize Farmers** in Indonesia are estimated to total up to 6,000,000 farmers. Each farmer mostly cultivates corn in 1 hectare of land.

Ministry of Agriculture has produced approximately up to 38 varieties of non-hybrid Maize seeds and 14 varieties of hybrid Maize seeds. These kinds of Maize seeds have already imposed price subsidies from government. Ministry of agriculture distributes the seeds to the Center of Seedling in province level or "*BalaiBenihInduk*". Then distribute to Center of Seedling in sub-district level or "*BalaiBenih*". Maize farmers are buy Maize seed subsidies in Center of Seedling in sub-district level or "*BalaiBenih*".

Small number of farmers correspondingly able to make their own Maize seedling locally and non-hybrid seed type. Up to 2010 in Indonesia, total number of fertilizer brand that registered was 623 brands and total number of pest control brand listed was 1,549 formulations. For the distribution system of subsidized fertilizer, Ministry of Agriculture registered 1,031 distributors company; with a range of 3 - 228 distributors per province in Indonesia, and supply 4,276 official agricultural kiosks with a range of 3 - 1080 stall per province. Below is chart flow of fertilizer supplier value chain in Indonesia:

Along with the increasing number of agriculture production, the number of distributors and agricultural retailers kiosks growing rapidly in both official and unofficial kiosk; including seasonal retailers which only appear at certain times when fertilizers and pesticides in high demand. These conditions are often led to the possibility of irregularities in various forms of abuses such as the rising price of subsidized fertilizer, sell the counterfeit fertilizer and illegal pesticides and various forms of violations which are detrimental to farmers.

In general maize cultivation is done 2-3 a year, both in dry land or "*tegalan*" and rice-field or "*sawah*" but in the future, Ministry of Agriculture plan to implement new agriculture technology which allows farmers to cultivate Maize four times a year. For seed, farmers need 20 kg/year (3 planting seasons). For fertilizer, farmers need 250 kg of urea fertilizer, 100 kg of SP, and 100 kg of KCL. For pest control, farmers buy one package with a volume of 1-2 liter. For fertilizers and pesticides, farmers are buying 1-2 times/year.

Table 11 - Farmer's Payment Expenses to Suppliers

	Type	Quantity / Hectare	Payment Frequency/ Year	Payment method
SEED	Non-hybrid	20 Kg	3	Cash
FERTILIZER	Urea	250 Kg	2	Cash
	SP-36	100 Kg	2	Cash
	KCL	100 Kg	2	Cash
PEST CONTROL	Pesticide	1 package	1	Cash
	Herbicide	1 package	1	Cash

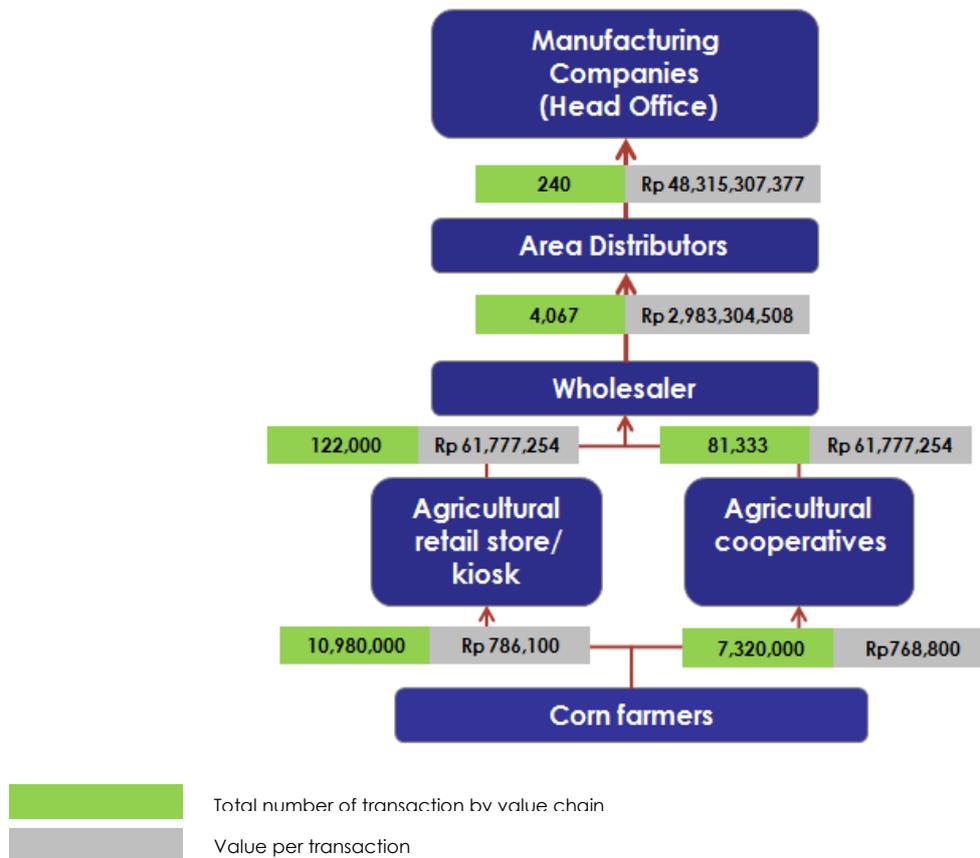
Fertilizer and pesticides supplies are the biggest expenses to pay that every maize farmers. Purchasing percentage of those value chains is agricultural retail store/ kiosk (60%) and agricultural cooperatives (40%). Table below elaborates the payment system by value chain actors for input supplies.

Table 13 - Payment System by Value Chain Actors – Supplier Side

No.	Channel	Payment Freq. Per Actor (Yearly)	No. of Actors (Buyers)	Avg. Purchase Volume in Kg /Transaction			Avg. Purchase Value in IDR /Transaction	Total No. of Transactions (Per Year)	Total Payment Value in IDR (Per Year)
				Seed (Kg)	Fertilizer (Kg)	Pest control (Liter)			
1	Agricultural retail store from farmers	3	3,660,000	14	315	1	IDR 786,100	10,980,000	8,631,378,000,000
2	Agricultural cooperatives from farmers	3	2,440,000	14	315	1	IDR 768,800	7,320,000	5,627,616,000,000
3	Wholesaler from Agricultural retail store	10	12,200	1,210	27,221	60	IDR 61,777,254	122,000	7,536,825,000,000
4	Wholesaler from Agricultural cooperatives	10	8,133	1,210	27,221	60	IDR 61,777,254	81,333	5,024,550,000,000
5	Area distributor from Wholesaler	10	407	60,492	1,361,066	3,025	IDR 2,983,304,508	4,067	12,132,105,000,000
6	Manufacturing company from area distributor	12	20	1,008,197	22,684,426	50,410	IDR 48,315,307,377	240	11,595,673,770,492

Based on the table above, it shows that most frequent transaction is between agricultural retail store and farmers accounted for 10,980,000 transactions. From the table, describing that every maize farmers spend around Rp 786,100 to buy seed, fertilizers, and pesticides from Agricultural retail store/ kiosk for each planting season. Some farmers also buy from agricultural cooperatives and spend around Rp 768,800 for each planting season. The price differentiation between Agricultural retail stores/ kiosks and cooperatives happened due to price subsidy from government to agricultural products distributed by Agricultural cooperatives.

Figure 22 - Value Chain System of Maize – Seed and Fertilizer Supplier Side



Suppliers of input supplies of corn farmers are agricultural retail store/ kiosk and agricultural cooperatives. Agricultural cooperatives offer a lower price than Agricultural retail store/kiosk, since particular seeds and fertilizers are subsidized by government distributed through registered Agricultural cooperatives. Mostly corn farmers buy from agricultural retail store/kiosk valued at Rp786,000 per transactions and accumulated 10,980,000 transactions at national level per year. Transaction value of farmer with Agricultural Cooperatives is Rp 768,000 per transaction, accumulated 7,320,000 transactions.

4.3.5 Interest Level on Mobile Payment Services by Value Chain Actors – Supplier Side

The table below summarizes the interest level of each value chain actors on mobile payment services. Seed's area distributors would be one of the actors who are considering on adopting the mobile payment technology that could benefit them in expediting payment transactions from their customers as well as assisting them on maize pricing and stock information provision in the surrounding areas.

Table 12 - Interest Level on Mobile Payment Services - Supplier Side

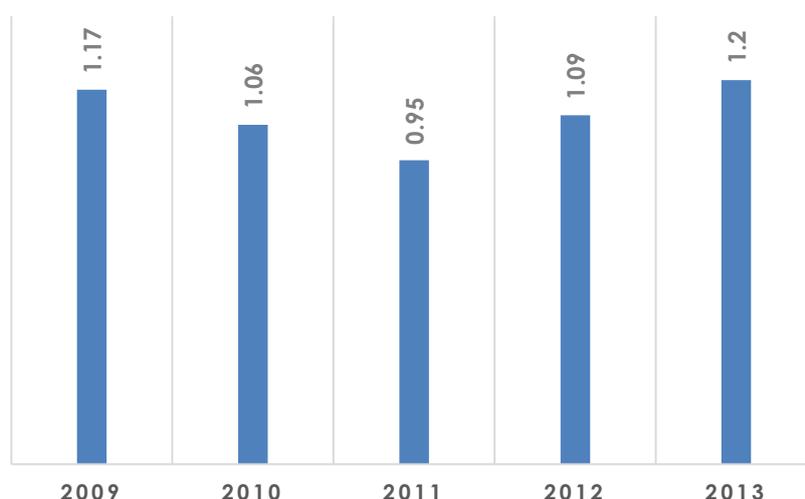
No.	CHANNEL	INTEREST LEVEL	REASON (INTERESTED)	REASON (NOT INTERESTED)
1	Manufacturing Companies (Head Office)	Low		<ul style="list-style-type: none"> Large scale user; payment involving many departments (procurement, finance, staff, etc.)
2.	Area Distributors	Medium	<ul style="list-style-type: none"> Mobile technology can help supplier companies on providing information on price and stock availability on what kind of seed, fertilizer and other input supplies needed by farmers. Expedite process payment from agent. 	
3.	Wholesaler	Medium	<ul style="list-style-type: none"> Mobile technology can help wholesaler traders on providing information on price and stock availability on what kind of seed and fertilizer and other input supplies needed by farmers. Expedite process payment from retailer stores and farmer groups. 	
4.	Agricultural retail store/ kiosk	Medium	<ul style="list-style-type: none"> Mobile technology can help traders in retailer stores on providing information on price and stock availability on what kind of seed and fertilizer and other input supplies needed by farmers. 	

5.	Agricultural cooperatives	Low		<ul style="list-style-type: none"> The administrators of the Cooperatives are mostly farmers too who have lack of knowledge about mobile technology system advantages.
6.	Corn Farmer	Low		<ul style="list-style-type: none"> Lack of knowledge about mobile technology system advantages on helping the process of agribusiness Poor telecommunication access in the rural areas

4.4 Potato

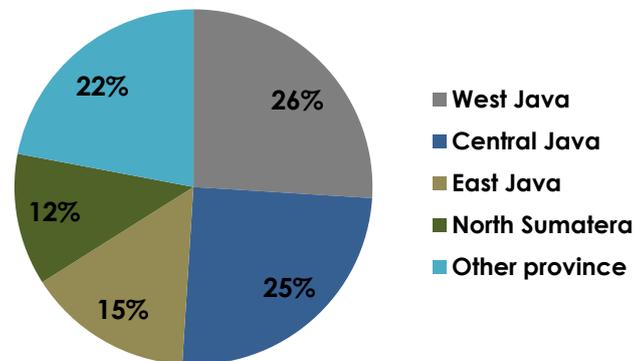
Indonesia's total potato production in 2012 notched a figure of 1.09 million tons and will approximately score 1.2 million tons by the end of 2013. The corn production had increased by 0.14 million tons since 2011 to 2012. In Indonesia, there are approximately 6,000,000 potato farmers in existence; growing potatoes via partnership program or independently nurturing their own crops. Within a year, farmers grow potato 2-3 times, and raise interchangeably with other crops. Generally farmers grow potato in 1 hectare of land and the average production is 13-15 ton/ha.

Figure 23 - Total Potato Production in 2009-2012 (in Million Tons)



Potato farming in Indonesia are greatly populated in West java (260,000 tons/year), Central Java (252,000 tons/year), East Java (150,000 tons/year), and North Sumatera (128,000 tons/year).

Figure 24 - Percentage of Potato Producing Areas in Indonesia – 2013



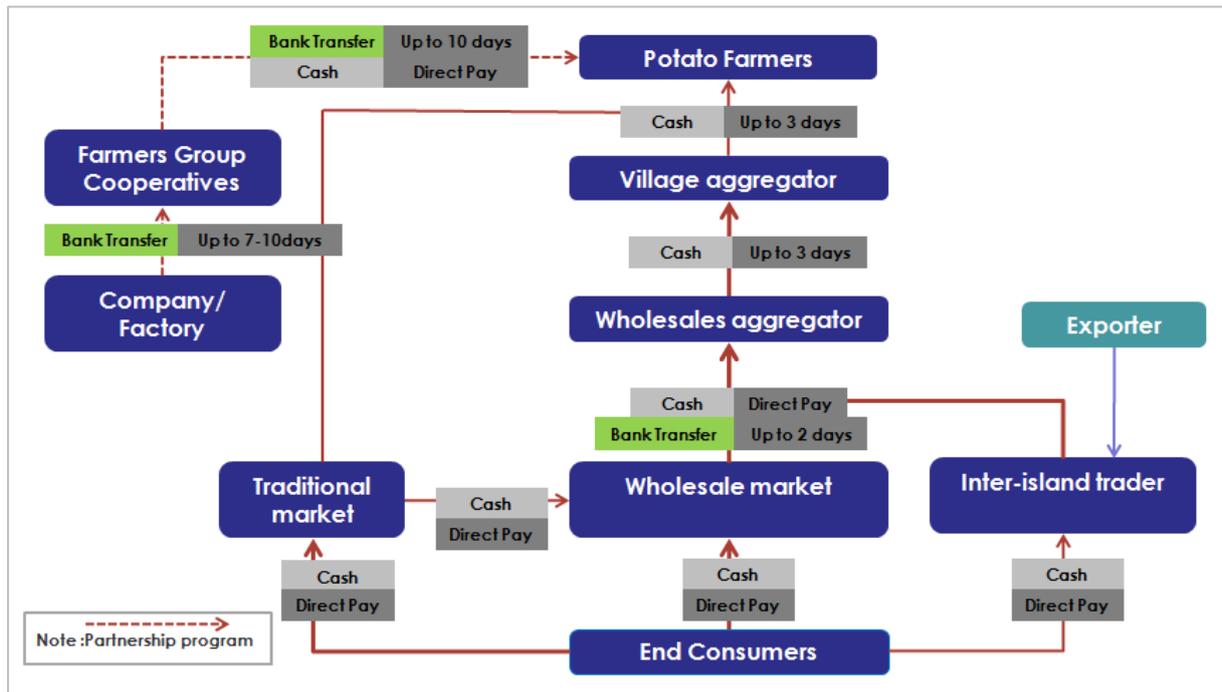
Demand for potato in Indonesia is for consumption as an alternative food and vegetable, and for food industry (French fries and frozen potato). Generally, types of potato seed that grow in Indonesia are Granola and Atlantic variants. A granola variant has superior qualities due to its high productivity; could reach up to 30-35 tons per hectare. Granola is also resistant to potato diseases in general. Granola variant is usually sold to traditional markets and modern markets while an Atlantic variant is supplied to some industry by using partnership program. Atlantic potato production per hectare is 18-20 tons per hectare.

In 2010, total number of imported potato in Indonesia recorded 24,204 tons and total number of exported potato accounted for 6,771 tons. Those numbers denote that import volume exceeds the export volume. This condition is triggered by decreasing productivity of potato production; production costs have risen, more of agricultural land are not fertile and the inapt use of pesticides.

4.4.1 Value Chain System of Potato – Buyer Side

Overall in Indonesia, there are two types of flowchart in potato's buyer value chain; type 1 is value chain of Granola variant and type 2 is value chain of Atlantic variant.

Figure 25–Value Chain System of Potato in Indonesia (Overall) – Buyer Side



The actors on the value chain above are listed below:

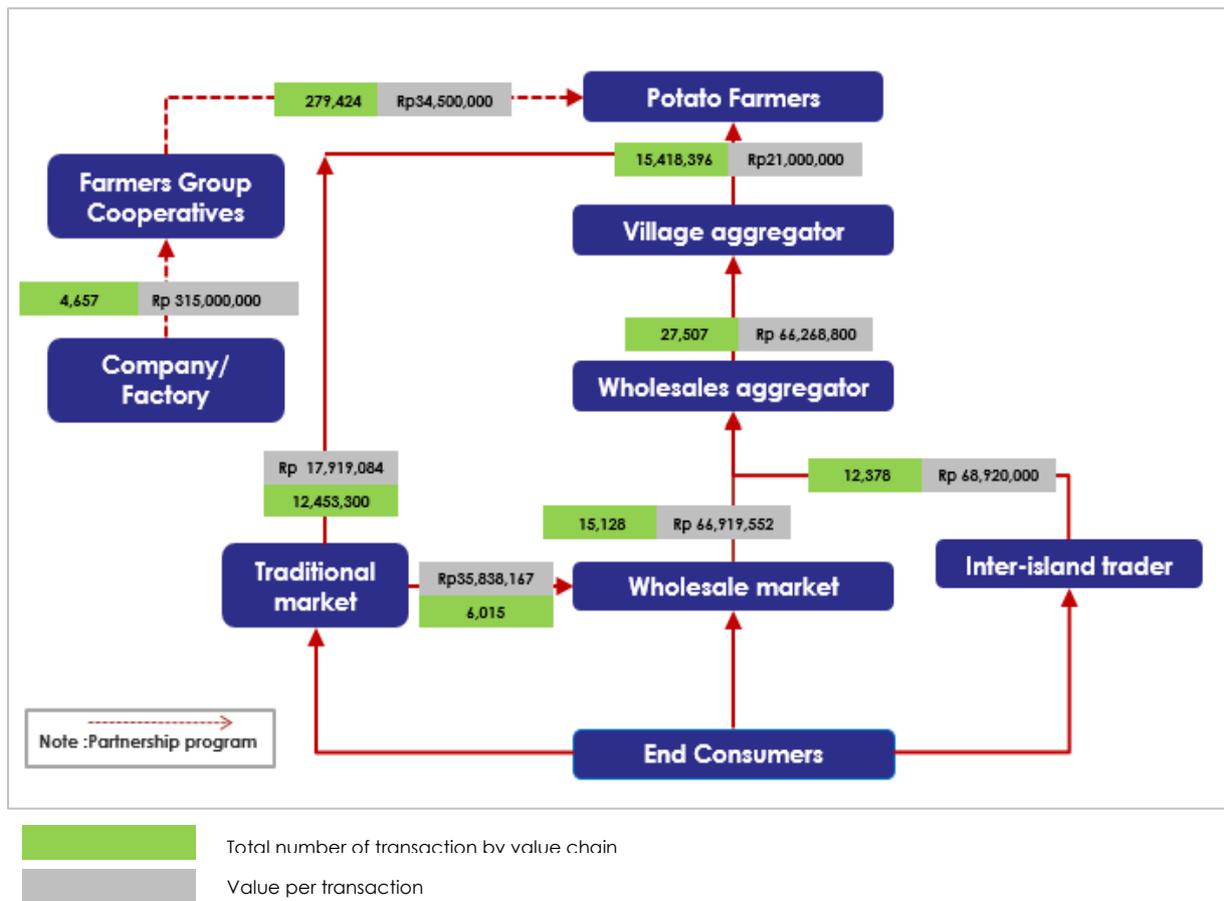
1. **Potato farmers** that approximately exist in Indonesia are 6,000,000 farmers.
2. **Village aggregator** or “*Pengepul Desa*” is a trader who lived in/ near the corn farmer’s village. They actively buy potato harvest by visiting to the farmer’s home, so the farmers do not pay extra fee (for carry and delivery). Generally, Village aggregators buy potato in quantity of 2-5 tons from farmers. Their activities incorporate buying, sorting, grading, packaging in sack, carrying, and sell to wholesale aggregators or “*Pedagang Besar*”. Payment from Village aggregators to potato farmers is paid by cash.
3. **Wholesale aggregator** or “*Pedagang Besar*” is a supplier for Wholesale market or “*Pasar Induk*” and Inter-island traders. Wholesale aggregators are able to buy potato in amount of 7-15 tons. Their activities cover buying, sorting, grading, packaging in sack, carrying, and sell to wholesale market or “*Pasar Induk*”. Wholesale aggregators would sometimes experience shrinkage in weight of potatoes. Payment from Wholesale aggregator to Village aggregators is paid by cash.
4. **Wholesale market** or “*Pasar Induk*” is a large market located in central district. Wholesale aggregators supply the traders in wholesale market, and wholesale market will supply the groceries traders in traditional market.
5. **Traditional market** or “*Pasar Tradisional*” in Indonesia are around 13,450 markets. In traditional market, there are varied forms of trader; retail stores, groceries, fish mongers, and fruit dealers, etc.

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6. **Inter-island trader** are traders who buy potato in large numbers from Wholesale aggregators and sell it to outer city. Typically, exporters obtain potato from the inter-island trader.
 7. **Farmers Group** is a group of farmers; consist of 10-15 potato farmers. This farmers group joined partnership program with Company/Factory/Chain Store Supermarket. For example, farmers group in Pangalengan, Bandung who join partnership program with PT. Indofood Fritolay Makmur (PT IFM). They take delivery of Atlantic potato seed supplies from PT IFM, cultivate the seed with guidance from agriculture-supervisor/ advisor, and sell the potato harvest to PT. IFM with agreed pricing. Usually, farmers group also make such an organization/ cooperatives, named "GAPOKTAN" or "*Gabungan Kelompok Tani*". It consists of 10-15 farmers groups (around 400 potato farmers) from some area/ village, who also form partnership program with company.

This organization was made in order to manage potato harvested by farmers to PT IFM's factory in Tangerang. Company/factory gives a price of potatoes harvest Rp3.900/kg, and farmers will receives Rp3,500/kg. The rest Rp350/kg is for operations cost (transport, sorting, packaging) and Rp50 for "Gapoktan" operational. During transport, potatoes suffered shrinkage of 2%. Rotten potatoes and green are not accepted by the company/ factory.

For payment system, company (PT. IFM) pays the farmers group based on contract price and using bank transfer. The lengthiest period of money transferred to head of farmers group is up to 7 days after delivery of provisions. Farmers group (in form of GAPOKTAN cooperatives) pay the potato farmers by using cash when weighing up the potato harvest. Some farmers also doing advance payment to farmers group; usually 1 month before harvest for an improved cash flow management.

Figure 26 - Value per Transaction and Total Transaction by Value Chain Actors – Buyer Side



Regular transactions occur between Farmers and Village aggregators, with 15,418,396 transactions per year and generated value for Rp 21,000,000 per transaction. The biggest transaction value is from company/ factory and farmers group cooperatives, valued at Rp 315,000,000 per transactions.

Payment system in potato value chain system in Indonesia is predominantly completed in cash. Actors who use bank transfer are only Wholesale aggregator and Farmers group. According to the interview results conducted, payment through cash is more preferable. Below table shows the detail payment frequency, total volume being distributed per type of actor, number of actors, average purchase volume in tons per transaction, total number of transactions per year and total payment value per year.

Table 13 - Payment System by Value Chain Actors - Buyer Side

No.	Channel	Total Volume in Tons per Value Chain	Payment Freq. Per Actor (Yearly)	No. of Actors (Payment Receiver)	Avg. Purchase Volume in Tons /Transaction	Avg. Purchase Value in IDR /Transaction	Total No. of Transactions (Per Year)	Total Payment Value in IDR (Per Year)
1	Farmers from Village aggregator	554,501	4	3,854,599	7	IDR 21,000,000	15,418,396	IDR 323,786,316,000,000
2	Farmers from Traditional market	246,990	6	2,075,550	5	IDR 17,919,084	12,453,300	IDR 223,151,722,799,616
3	Farmers from Farmers Group	436,599	4	69,856	10	IDR 34,500,000	279,424	IDR 9,640,128,000,000
4	Farmers group from Company/factory	419,135	36	129	90	IDR 315,000,000	4,657	IDR 1,466,972,500
5	Village aggregator from Wholesale aggregator	550,144	24	1,146	20	IDR 66,268,800	27,507	IDR 1,822,869,135,360
6	Wholesale aggregator from Wholesale market	302,563	24	630	20	IDR 68,919,552	15,128	IDR 1,042,625,320,589
7	Wholesale aggregator from Inter-island trader	247,551	20	619	20	IDR 68,920,000	12,378	IDR 853,060,746,000
8	Wholesale market from Traditional market	60,153	24	251	10	IDR 35,838,167	6,015	IDR 215,577,326,196

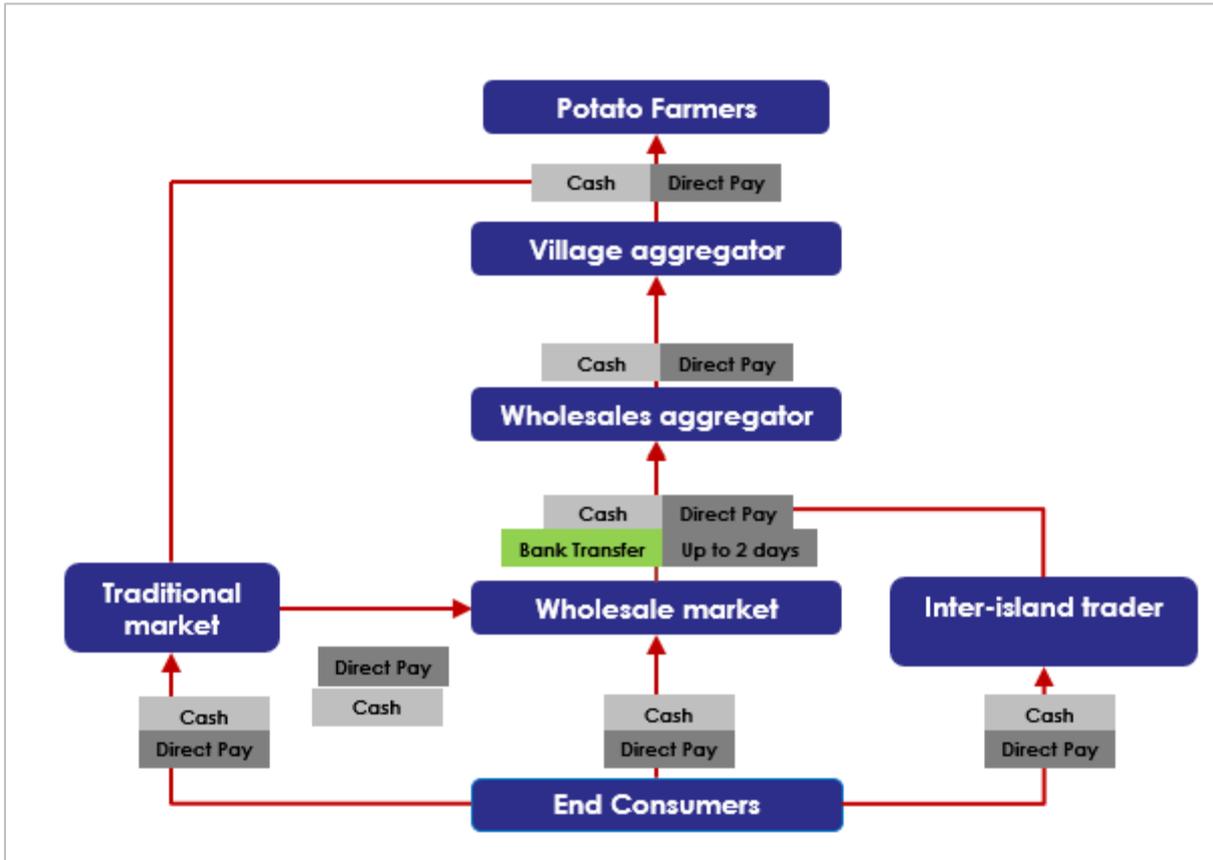
**) Due to the diversified number of actors, the obtained number of actors above is based on assumption that each payment is a transaction between farmer and different actor and therefore there is no similar actor within 2 transactions.*

Most frequent transaction occur between farmers and village aggregator; 15,418,396 per year at national level. It generated the biggest value amounted to Rp 323 Trillion per year. The biggest purchase volume is farmers group from Company/ factory, 90 tons per transaction due to company/factory capacity which reaching 120 tons/day. Therefore, potato supply from farmer group to Company/factory through partnership program remains inadequate.

4.4.2 Other Type of Value Chain System of Potato – Buyer Side

There are two other different types of value chain available in Indonesia for potato. **Value chain type 1** is a buyer's value chain of Granola variant. Generally, Granola variant is for consumption, so the potato harvest distributed would bypass other actors to reach end consumers. Below is flowchart for value chain type 1:

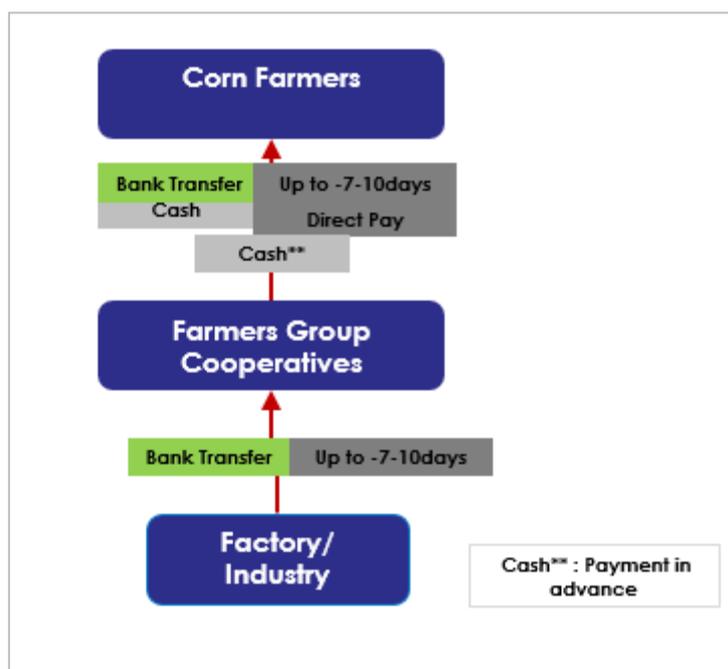
Figure 27 - Value Chain System of Potato in Indonesia (Type 1) – Buyer Side



Value chain type 2 is a buyer's value chain in Atlantic potato variant. This variant is typically cultivated by partnership program with factory/ industry, because Atlantic seeds are still imported, advance technology in cultivation, and only accepted by some industries. An example of partnership program is with PT Indofood Fritolay Makmur (PT IFM). Type 2 only takes 2 actors; Farmers group and Factory/company.

Below is flowchart of value chain type 2:

Figure 28 - Value Chain System of Potato in Indonesia (Type 2) – Buyer Side



4.4.3 Interest Level on Mobile Payment Services by Value Chain Actors - Buyer Side

Table below describes the level of interest of each value chain actors in potato market in Indonesia. Farmer Groups and wholesale aggregators are considering of switching from conventional way in order to access relevant information on the prevailing price of potato on actors at different tiers in the distribution system.

Table 14 – Interest Level on Mobile Payment Service – Buyer Side

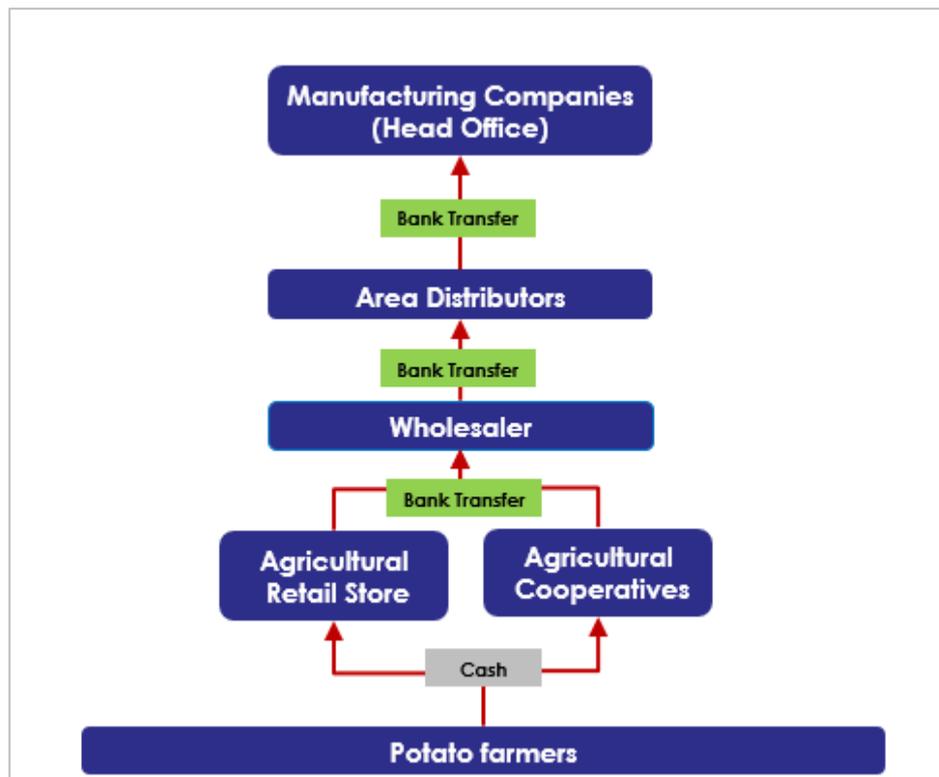
No.	CHANNEL	INTEREST LEVEL	REASON (INTERESTED)	REASON (NOT INTERESTED)
1.	Farmer	Low		<ul style="list-style-type: none"> Farmer's buyers and suppliers are still paid the farmers in cash. Farmers still prefer payment system in conventional way (cash can be used right away to buy personal /family's needs). Limitation of telecommunication access to the rural areas and non-ownership of mobile phone.

2	Village Aggregator	Low		<ul style="list-style-type: none"> • Poor telecommunication access in the rural areas • Lack of trust from other actors who make payments.
3	Traditional Market	Low		<ul style="list-style-type: none"> • Traders in traditional market are used to pay supplier and receive payment from their consumer by using cash.
4	Farmers group	Medium	<ul style="list-style-type: none"> • Accessible information with regards to the prevailing purchase price of potato from sub-district aggregators. • Already familiar with mobile banking from bank. • Mobile payment to check the transferred payment from company 	<ul style="list-style-type: none"> • Lack of trust from actors who involved in the payments transactions.
5	Wholesale aggregator	Medium	<ul style="list-style-type: none"> • Accessible information 	<ul style="list-style-type: none"> • Lack of trust from actors who involved in the payments transactions.
6	Inter-island trader	Low		<ul style="list-style-type: none"> • Lack of trust from actors who involved in the payments transactions.
7	Wholesale market	Low		<ul style="list-style-type: none"> • Traders in wholesale market or “PasarInduk” are used to pay supplier and receive payment from their consumer by using cash.
8	Company/factory	Low	<ul style="list-style-type: none"> • Sophisticated organization; familiar with electronic payment 	<ul style="list-style-type: none"> • Large scale user; payment involving many department (procurement, finance, staff, etc.)

4.4.4 Value Chain System of Potato – Supplier Side

Granola type is a variation of potatoes of which commonly grown in Indonesia. Different with Atlantic type, Granola's seed type is easy to find in agricultural kiosk/ cooperatives or even potato farmers are seedling the potato seed by themselves. Below is chart flow of seed and fertilizer supplier value chain for Granola potato type:

Figure 29 - Value Chain System of Potato (Granola) –Seed and Fertilizer Supplier



The definition and activities of each actor are explained as below:

1. **Manufacturing Company** produce potato seed or fertilizer, then send the products to area distributors in some big cities in Indonesia (Jakarta, Surabaya, Medan, Makassar, etc). Area distributors supply the products to wholesaler of agricultural products; who sell it to some agricultural retail store/ kiosk and agricultural cooperatives.

Third party companies are selected as associates for partnership program (importer/distributor Company) in supplying the Atlantic seed variant to the farmers, because Atlantic potatoes have yet to be grown in Indonesia. Below is flowchart of seed and fertilizer supplier value chain for Atlantic potato type.

2. **Area distributors** supply the products to Wholesaler. Area distributors are not prohibited to sell the seed directly to farmers.

3. **Wholesaler** is a supplier of Agricultural retail store/ kiosk and Agricultural cooperatives.
4. **Agricultural retail store/ kiosk** are present from village area to sub-district area. Farmers buy seeds in this channel due to its easiness of access.
5. **Agricultural cooperatives** are existed in village area until sub-district area. Usually it is an agricultural kiosk which has legal entity as cooperative.
6. **Potato Farmers** usually obtain input supplies during the planting season from agricultural kiosk and agricultural cooperatives.

Potato Seed Manufacturers of Atlantic potato which have a superior quality mostly are from Australia and England. Their products imported by company (PT. IFM, for example) to Indonesia. Then, company (PT. IFM) cooperated with partner distribution, to help them distribute the imported Atlantic seed to all farmers group who already joined partnership program in all around Indonesia.

Productivity of Atlantic potatoes is moderate, reaching 15-30 tons/hectare. Due to high productivity and market availability, many potato farmers choose to cultivate Atlantic type. However, demand to cultivate Atlantic potato type is hampered because of the limitation of seeds availability. Seeds deliveries from PT. IFM are sometimes delayed and arrived late due to the procedure quarantine in Ministry of Agriculture, so the seed cannot be distributed in a timely manner to the farmers; while planting potatoes should be executed in compliance to the planting seasons. If the planting season has been missed, a risk of regression or crop failure might happen.

Potato cultivation is done twice a year. Large numbers of farmers in Indonesia still own land below 0.5 hectare to cultivate potato. Below are table of regular potato farmer's (not a partnership program) payment expenses to their suppliers in a year, assumingly that per farmers grow potato in one hectare:

Table 15 - Farmer's Payment Expenses to Suppliers

	Type	Quantity / hectare	Payment Frequency/ year	Payment method
SEED	Granola	1,500 Kg	3	Cash
FERTILIZER	Urea	250 Kg	2	Cash
	SP-36	100 Kg	2	Cash
	KCL	100 Kg	2	Cash
PEST CONTROL	Pesticide	1 package	2	Cash
	Herbicide	1 package	2	Cash

Value chain actors of seed suppliers and purchasing percentage are agricultural retail store/ kiosk (60%), agricultural cooperatives (38%), and Seed from partnership program (2%). Below is table of total payment by value chain actors:

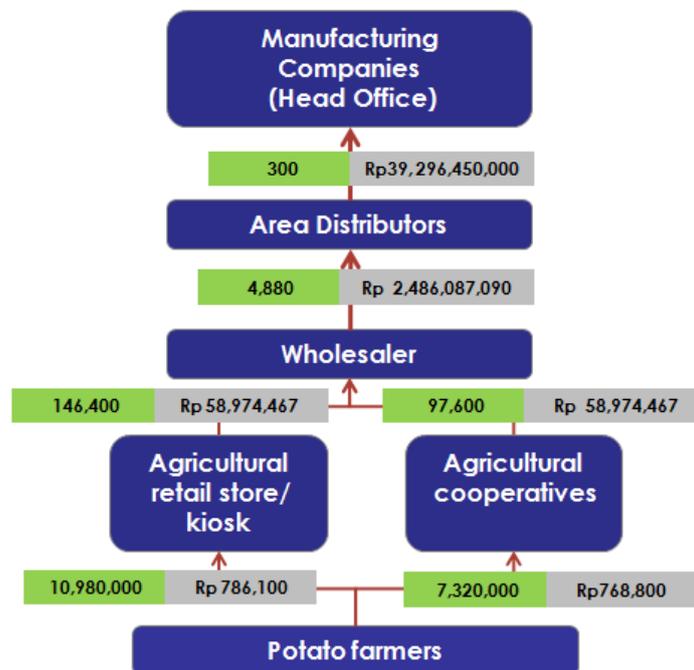
Table 16 - Payment System by Value Chain Actors - Suppliers Side

No.	Channel	Payment Freq. Per Actor (Yearly)	No. of Actors (Buyers)	Avg. Purchase Volume in Kg /Transaction			Avg. Purchase Value in IDR /Transaction	Total No. of Transactions (Per Year)	Total Payment Value in IDR (Per Year)
				Seed (Kg)	Fertilizer (Kg)	Pest control (Package/Liter)			
1	Agricultural retail store from farmers	3	3,660,000	14	315	1	IDR 786,100.00	10,980,000	IDR 8,631,378,000,000.00
2	Agricultural cooperatives from farmers	3	2,440,000	14	315	1	IDR 768,800.00	7,320,000	IDR 5,627,616,000,000.00
3	Wholesaler from Agricultural retail store	12	12,200	1,008	27,221	60	IDR 58,974,467.21	146,400	IDR 8,633,862,000,000.00
4	Wholesaler from Agricultural cooperatives	12	8,133	1,008	27,221	60	IDR 58,974,467.21	97,600	IDR 5,755,908,000,000.00
5	Area distributor from Wholesaler	12	407	50,410	1,134,221	2,520	IDR 2,486,087,090.16	4,880	IDR 12,132,105,000,000.00
6	Manufacturing company from area distributor	12	25	820,000	18,450,000	41,000	IDR 39,296,450,000.00	300	IDR 11,788,935,000,000.00

At national level, the most frequent transaction occurs between Agricultural retail store and Farmers for 10,980,000 payment transactions, valued Rp 8.6 Trillion per year. Average purchase transaction value by farmers to Agricultural retail store is Rp 786,100.00 per farmers/ planting season; it is relatively small due to an average available land for potato cultivation which is below 0.5 hectare.

Value chain actors of fertilizer and pest control suppliers to corn farmers are: agricultural retail store/ kiosk and agricultural cooperatives. Purchasing percentage of those value chains is agricultural retail store/ kiosk (60%) and agricultural cooperatives (40%). Below is table of payment value per year, of actor suppliers:

Figure 30 - Value per Transaction and Total Transaction by Value Chain Actors – Supplier Side



Total number of transaction by value chain
 Value per transaction

Potato farmers conduct transaction to their supplier with a value at Rp 786,100 per transaction to the agricultural retail kiosk; or Rp 768,800 while purchasing input supplies to the agricultural cooperatives. At national level, there are around 407 Wholesalers who pay Rp 2,486,087,090 per transaction to the Area Distributor.

4.4.5 Interest Level on Mobile Payment Services by Value Chain Actors – Supplier Side

Potato farmers and agricultural cooperatives do not find mobile payment services as a primary needs to be fulfilled in the near future, since most of them are located in highland areas thus telecommunication infrastructure is not well-developed yet. The table below summarizes the interest level and reasoning for each value chain actors.

Table 17 - Interest Level of Mobile Payment Services – Supplier Side

No.	CHANNEL	INTEREST LEVEL	REASON (INTERESTED)	REASON (NOT INTERESTED)
1	Manufacturing Companies (Head Office)	Low		<ul style="list-style-type: none"> Large scale user; payment involving many department (procurement, finance, staff, etc.)
2	Area Distributors	Medium	<ul style="list-style-type: none"> Mobile technology can help supplier companies on providing information on price and stock availability on what kind of seed, fertilizer and other input supplies needed by farmers. Hasten process payment from agent. 	<ul style="list-style-type: none"> For Atlantic type of seed which imported, there will be many barriers to pay imported products by using mobile payment.
3	Wholesaler	Medium	<ul style="list-style-type: none"> Mobile technology can help wholesaler traders on providing information on price and stock availability on what kind of seed and fertilizer and other input supplies needed by farmers. Expedite process payment from retailer stores and farmer groups 	
4.	Agricultural Retail Store/ kiosk	Medium	<ul style="list-style-type: none"> Mobile technology can help traders in retailer stores on providing information on price and stock availability on what kind of seed and fertilizer and other input supplies needed by farmers. 	
5.	Agricultural cooperatives	Low		<ul style="list-style-type: none"> Poor telecommunication access in the rural areas. The administrators of the Cooperatives are mostly farmers too who have lack of knowledge about mobile technology

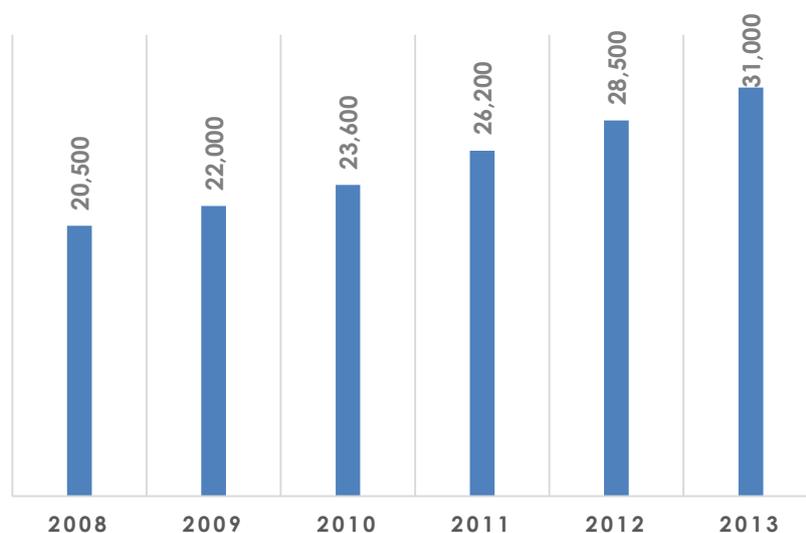
				system advantages.
6.	Farmer	Low		<ul style="list-style-type: none"> • Lack of knowledge about mobile technology system advantages on helping the process of agribusiness • Poor telecommunication access in the rural areas

4.5 Palm Oil

Since 2005, palm oil has developed into the most utilized commodity in the world (24%). In recent years, the palm oil plantation and palm oil processing sectors have become a key part of Indonesia's economy. The growing demand for edible oils domestically and internationally create conditions in which Indonesia has become the global leader in terms of the cumulative area of oil palm plantations and Crude Palm Oil (CPO) production.

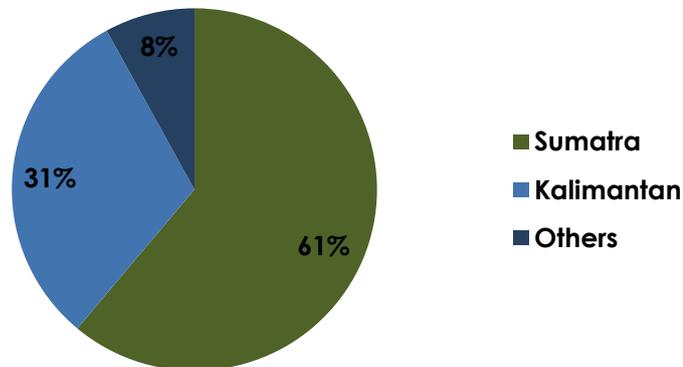
In 2012, oil palm plantations covered 9 million hectares in Indonesia, out of which 7.2 million ha were productive plantations under harvest, yielding 28.5 million tons of CPO. According to the World Bank reports nearly 50% of CPO produced in Indonesia are exported in an unrefined form, while the remaining is subject to processing into cooking oil out of which about 50% are exported and the remaining is consumed locally.

Figure 31 - Total CPO Production in Indonesia in 2008-2013 (in Million Tons)



Typically, CPO produced in Indonesia emanated from Sumatra and Kalimantan, with a total 5.4 million and 2.8 million hectare of palm plantation, respectively.

Figure 32 - Palm Oil Producing Areas in Indonesia – 2012 (in Million Tons)



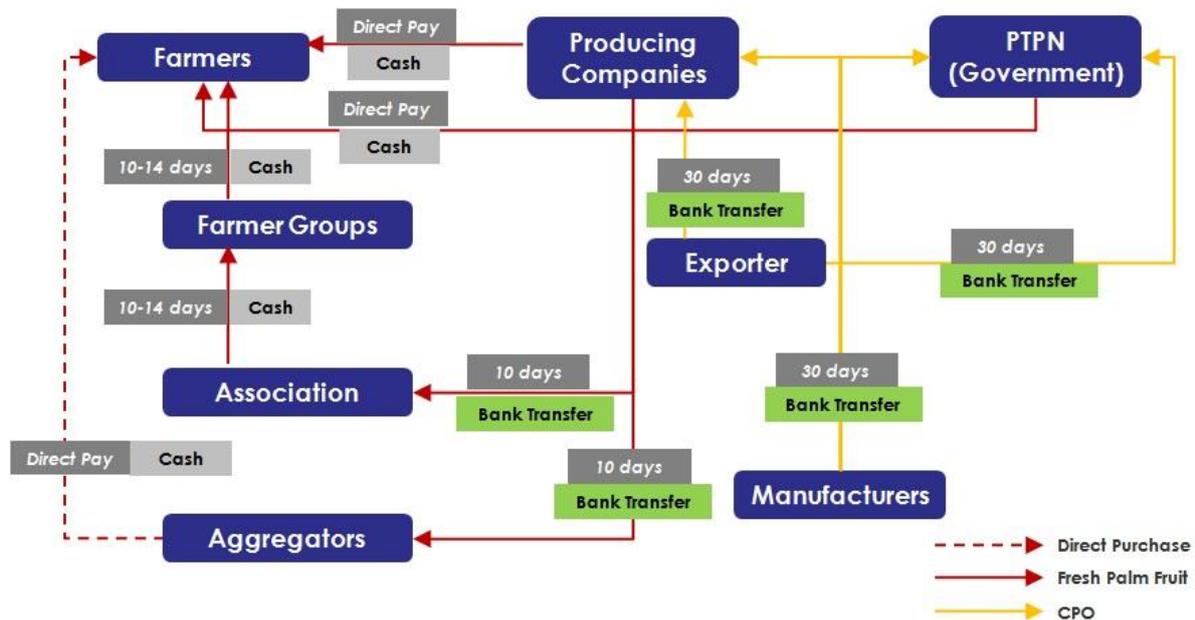
4.5.1 Value Chain System of Palm Oil Distribution – Buyer Side

In Indonesia, there are three types of CPO producer: Private companies, which hold ownership for 4,617,868 hectare (51%) palm oil plantation, farmers, which hold ownership for 3,773,526 hectare (43%) palm oil plantation, and the government, which hold ownership for 683,227 hectare (6%) palm oil plantation. Based on the value chain, there are several ways that a company do for purchasing CPO:

1. Buying the product through cooperation with farmer groups or association
2. Buying the product through cooperation with farmer groups or association
3. Buying the product through aggregators

It is also a common practice for private companies to buy CPO from farmers around their plantation to increase their production rate. In general, main flow of palm oil buyer in Indonesia is illustrated below on the chart:

Figure 33 - Value Chain System of Crude Palm Oil (CPO) in Indonesia – Buyer Side

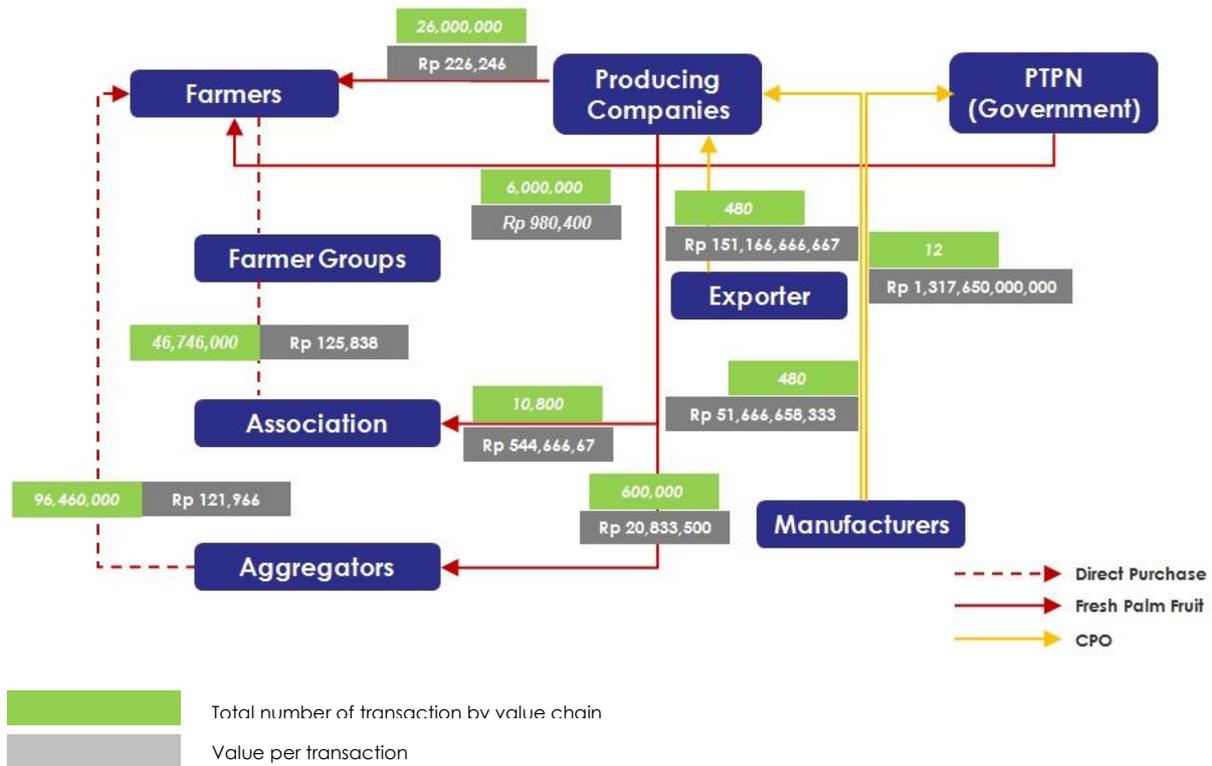


The description of actors' activities on the value chain are explained below:

- 1. Farmers:** The actors who cultivate palm oil on their own farm.
- 2. Farmers Groups:** act similarly as collectors, collecting produced CPO from their group members. Farmers' Groups basically act as selling agents. They do not decide on prices.
- 3. Association:** affiliation between several farmer groups together. They have a legal entity, thus are able to conduct business with companies.
- 4. Aggregator:** acts as middleman between end user (company) and the farmers. They collecting harvest to a large quantity, and then sell it to companies.
- 5. Producing companies:** private companies that are also planting palm oil in a large area of land. One of the examples on these companies is Sinar Mas Group.
- 6. PTPN:** is a government company that also growing several types of crops, including palm oil.
- 7. Manufacturer:** Manufacturer is the user for the CPO produced by the farmers, such as cooking Oil Company, etc.
- 8. Exporter:** are private companies that sell the crops to other countries. Exports from producing companies and state owned farms are managed by themselves, so it is not shown in the graphic.

Most transactions in value chain of palm oil are taking place between farmers and aggregators. In terms of value, the biggest transaction value is occurred on the link between producing company and end user.

Figure 34 - Value per Transaction and Total Transaction by Value Chain Actors – Buyer Side



When trade occurs in between individuals, the payment method being used is cash system. At the farmer level, this method is much more preferable, because the farmers are having difficulties in accessing banks, mostly due to the distance from their farm to the banks or nearest ATM. Because they are in need of funding for both farm and personal needs, going to the banks every time they need to make a purchase is simply inefficient. But, when the transaction is being done between two companies, the transaction is being conducted via bank.

Table 18 - Payment System by Value Chain Actors – Buyer Side

No.	Channel	Total Volume in Tons per Value Chain	Payment Freq. Per Actor (Yearly)	No. of Actors (Payment Receiver)	Avg. Purchase Volume in Tons /Transaction	Avg. Purchase Value in IDR /Transaction	Total No. of Transactions (Per Year)	Total Payment Value in IDR (Per Year)
1	Farmers from aggregators	24,510,000	52	1,855,000	0.25	121,966	96,460,000	11,764,800,000,000
2	Farmers from PTPN	12,255,000	12	500,000	2.04	980,400	6,000,000	5,882,400,000,000
3	Farmers from Producing Companies	12,255,000	52	500,000	0.47	226,246	26,000,000	5,882,400,000,000
4	Farmers from Association	12,255,000	36	1,298,500	0.26	125,838	46,746,000	5,882,400,000,000
5	Association from Producing Companies	12,255,000	36	300	1134.72	544,666,667	10,800	5,882,400,000,000
6	Aggregators from Producing Companies	24,510,000	12	50,000	40.85	20,833,500	600,000	12,500,100,000,000
7	Producing Companies from Exporters	18,140,000	12	40	37791.67	151,166,666,667	480	72,560,000,000,000
8	Producing Companies from Manufacturers	6,199,999	12	40	12916.66	51,666,658,333	480	24,799,996,000,000
9	PTPN from Manufacturers	4,161,000	12	1	346750	1,317,650,000,000	12	15,811,800,000,000

**)Due to the diversification of numbers of actors, the obtained number of actor above is based on assumption that each payment is a transaction between farmer and different actor and therefore there is no same actor in 2 transactions.*

Farmers and the aggregators are the actors that do most of the transaction in a year. Transaction occurs weekly which accounted for 52 times in year and therefore accumulated to 96.46 million transactions at the national level. In the farmer level, the aggregators counting the volume of the fruit based on the cluster of the fruit, and not based on the weight. Each cluster of palm weighs for about 25 kg.

In the level of the manufacturing companies, the palm is evaluated by its weight (kg). The frequency of payment happened in this level is lesser than the frequency on the farmer level, but with greater payment value.

4.5.2 Interest Level on Mobile Payment Service by Value Chain Actors – Buyer Side

Table below summarized the interest level on mobile payment service on value chain system of each actor in palm oil business market in Indonesia.

Table 19 - Interest Level on Mobile Payment Service – Buyer Side

No.	CHANNEL	INTEREST LEVEL	REASON (INTERESTED)	REASON (NOT INTERESTED)
1.	Farmer	Low		<ul style="list-style-type: none"> • The location of the banks and ATM are quite far, while they need to have ready cash often to pay for workers, etc. • Farmers still have low familiarity with cell phone, especially to conduct business transaction through banks • In rural areas, where most farmers are located, the signal quality is bad. • Unavailable device (smartphone).
2	Village Aggregator	Low		<ul style="list-style-type: none"> • Poor telecommunication access in the rural areas • Farmers are reluctant in conducting business via mobile transaction.
3	Farmer groups	Low		<ul style="list-style-type: none"> • The members (farmers) are more interested in cash because it is more accessible and save (in their opinion).

4	Association	Medium	<ul style="list-style-type: none"> • Easier to access • Safer because do not need to bring many cash. • Quite familiar with cell phone usage. • Are staying in the city, have no problem with the cell phone signal. 	<ul style="list-style-type: none"> • There is no known mobile application that can be used to access business account. • Cannot be used for transaction to farmers.
5	Producing Company	Medium	<ul style="list-style-type: none"> • Are already using bank transaction. Mobile transaction is much simpler. 	<ul style="list-style-type: none"> • Need to know better about the system first. • Safety concern. • Lack of trust from actors who involved in the payments transactions.
6	State-owned farms (PTPN)	Low		<ul style="list-style-type: none"> • Safety concerns, especially because the nominal of transaction are quite high. • Having complicated bureaucracy, mobile transactions are considered not save enough.
7	End user (Company)	Low		<ul style="list-style-type: none"> • Are already using internet transaction • Mobile transaction cannot support business needs (corporate-related transactions)

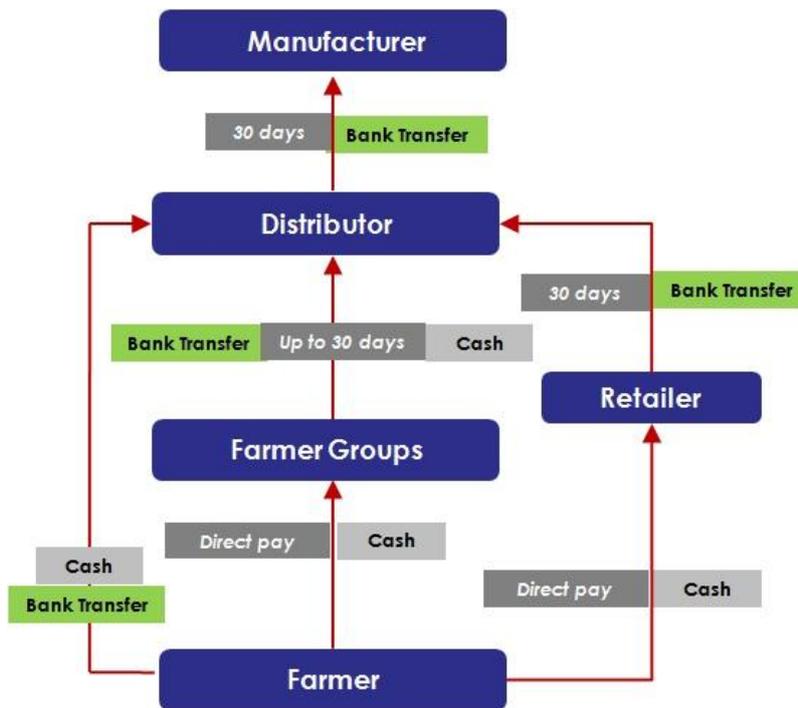
4.5.3 Value Chain System of Palm Oil – Supplier Side

The supplier side's value chain system of palm oil in Indonesia only involved 5 actors; Manufacturer, distributor, retailer, farmer groups, and farmers. Like other farmers, palm oil farmers also buy their supply twice every year. There are several exceptions, though:

- Palm oil seeds are sold in form of saplings (young palm tree plants). Thus, it is usually sold directly from the nursery or the distributor, without going through the retailer
- Due to this limitation, farmers that are living in a distant place from the nursery (distributor) are required to utilize bank transfer as the paying system (Other farmers usually order seed from closer location). Palm oil tree is a long term investment (It can be harvested for at least 12 years), so farmers always try to find exclusive seeds. Farmers in Kalimantan can even order their seed from Riau just to acquire a superior seed quality.

The graphic below describes the value chain system of palm oil supply in Indonesia:

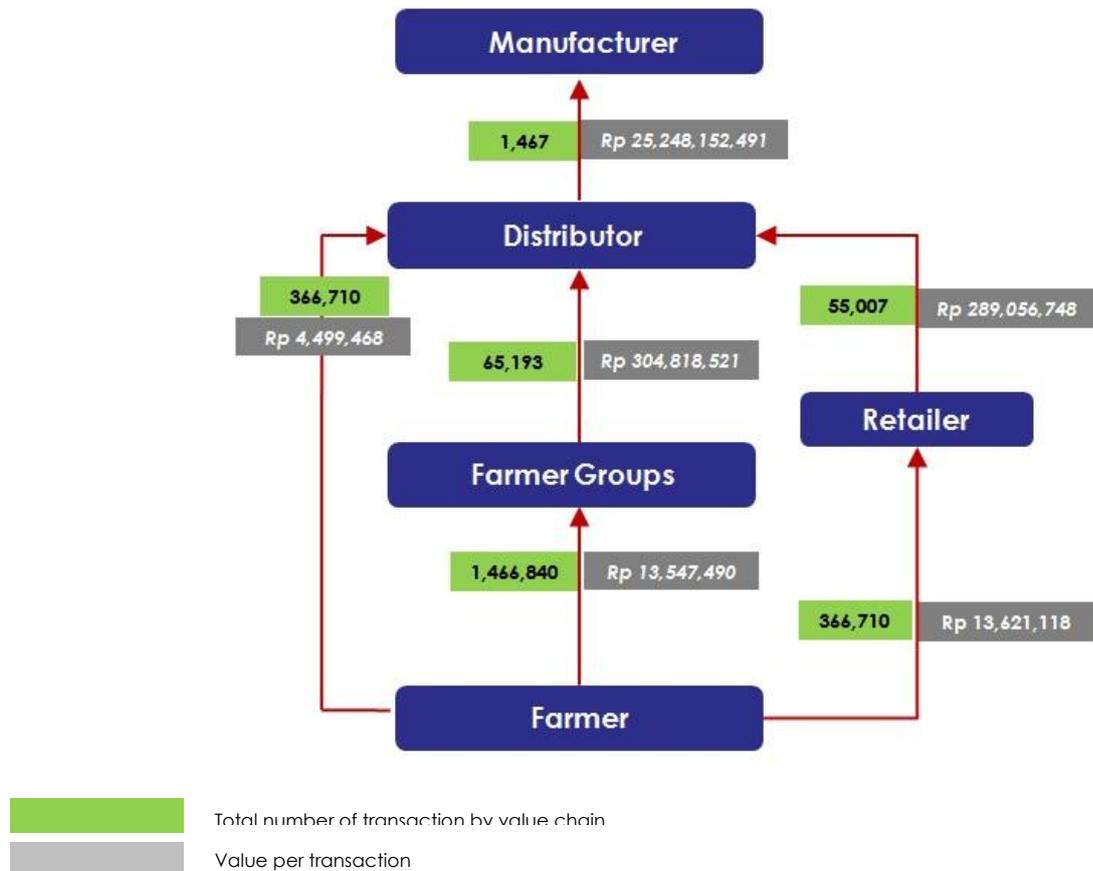
Figure 35 - Value Chain System of Palm Oil – Suppliers Side



1. **Manufacturer:** The producer of the seeds and fertilizer and the seeds. For the seeds, it is usually produced by a division of big palm oil companies in Indonesia such as Asian Agri.
2. **Distributor:** Distributors are the middle man between the manufacturer and the farmers. In palm oil, there are two types of distributor: those who sell the fertilizer and pesticide, and those who sell the saplings. Palm oil saplings do not sell through retail stores.
3. **Retailer:** Retailers in the value chain system are small retail store that sell fertilizer and pesticide to the farmers.
4. **Farmer Groups:** Farmer groups are farmer association located in one area. There are usually 40-50 farmers in each group. Business transactions (buying and selling) from the farmers can be conducted through this channel.
5. **Farmers:** Individuals who grow palm oil in Indonesia. There are approximately 1.8 million palm oil farmers in Indonesia.

The total number of transactions between each actors and the value for each chain actors can be seen from the figure below:

Figure 33 - Value per Transaction and Total Transaction by Value Chain Actors – Supply Side



Each palm plantations can produce palm fruit for at least 12 years. Thus, palm oil farmers do not need to buy palm oil saplings every year, unless they are planning to expand their farm area or replacing their unproductive palm plants.

The detailed transactions between value chain actors for palm oil supply are described in the table below:

Table 20–Farmer’s Payment Expenses to Suppliers

No.	Channel	Payment Freq. per Actor (Yearly)	No. of Actors (Buyer)	Avg. Purchase Volume per Transaction			Avg. Purchase Value in IDR / Transaction	Total No. of Transaction (Per Year)	Total Payment Value in IDR (Per Year)
				Seed (sapling)	Fertilizer (Kg)	Pest Control (Liter)			
1	Farmer Groups from Farmers	1	1,466,840	638		3.9	13,547,490	1,466,840	19,872,000,000,000
2	Retail Store from Farmers	2	1,833,550		1,227	0.8	4,499,468	3,667,100	16,500,000,000,000
3	Distributor from Farmers	1	366,710	638		1.0	13,621,118	366,710	4,995,000,000,000
4	Distributor from Farmer Groups	2	32,596	14,357		88	304,818,521	65,193	19,872,000,000,000
5	Distributor from Retail Store	9	6,112		81,809	55	289,056,748	55,007	15,900,000,000,000
6	Manufacturers from Distributor	12	122	797,633	3,067,819	6,136	25,248,152,491	1,467	37,035,000,000,000

Most transactions for the supply occurs in the farmer level, and being done mostly via cash. Due to the massive number of actors, the average value per transaction is

considered to be small. While in the upper level, the number of transactions are limited, but the value per transaction is high.

4.5.4 Interest Level on Mobile Payment Services by Value Chain Actors – Supplier Side

Table Below summarizes the interest level of each actor in value chain system on supplier side. Their acceptance levels on the concept of mobile payment services vary from low to medium. Retailers who engage in intense contact with farmers are having lower acceptance to the concept. Their opinion is somehow greatly related and affected by the farmer's opinion.

Table 21 - Interest Level on Mobile Payment Services -Supplier Side

No.	CHANNEL	INTEREST LEVEL	REASON (INTERESTED)	REASON (NOT INTERESTED)
1.	Seed manufacturer	Low		<ul style="list-style-type: none"> • Safety concern • Internet banking are considered enough • Education on the product still needs to be done by face to face approach.
2.	Distributor	Medium	<ul style="list-style-type: none"> • Mobile technology can help distributors on providing information on price and stock availability on what kind of seed and fertilizer and other input supplies needed by farmers. • Expedite process payment from retailer stores and farmer groups 	
4.	Retailer Store	Low		<ul style="list-style-type: none"> • Retailer store usually only deals with local farmers and local farmers prefer to deal in cash. • Unfamiliarity with the concept and the device needed to do the transactions

5.	Farmer	Low	<ul style="list-style-type: none"> • Lack of knowledge about mobile technology system advantages on helping the process of agribusiness • Poor telecommunication access in the rural areas • Needs on available cash to pay salary and other needs.
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5. MFI's Roles in Value Chain System In Indonesia

Capital shortage has remained to be the main issue for farmers in Indonesia including rice farmers. The banking system which is still insufficient has inflicted misfortunes to farmers in maximize their growing efforts. Characterized by troublesome administrative requirements for obtaining capital, as well as the lending policies by the banking institution which are questionable since banking institutions are not willing to take risks on small businesses. On the other hand, lesser farmers do not have the collateral to comply with the requirements proposed by the banking institutions.

The gap against the farmers' needs for information services would be driven by the facts that rural farmers typically lack of access to financial services that could help them to enhance their ability to upgrade and diversify their farming practices. Banks and financial institutions need to be watchful of the loan needs of specific farmers (farmer groups). Meanwhile, banks and financial institutions would also to do some assessment and verification with regards to their previous contracts or with identified credit history.

Challenges and barriers in providing mobile payment services and mobile agricultural information services between micro finance institutions and smallholder farmers will be driven by some factors in rice business in Indonesia, such as:

- Constricted customer base. Not all MFIs have the data to all rice farmers in Indonesia.
- Lack of experience with and some cases interest in, low-income customers
- Inflexible regulatory requirements with significant agreement issues
- The availability of technology infrastructure; back office system may not be linked with mobile money platforms, lack of network coverage in some of rural areas where rice farmers reside.
- Cultural conflict. Some of rice farmers are still traditional and find the mobile payment system will be contradicting with their daily practice.

- Farmers themselves still do not see the importance of spending money on subscribing internet
- An innovative ways to form private-sector partnerships would be one of the challenges in implementing the mobile payment services in the agribusiness in Indonesia.

Listed below are MFIs in Indonesia who involved in the agribusiness industry in Indonesia, including their activities and future developments:

Table 22 - MFIs' Roles, Activities and Future Development in Indonesia

MFI	Main Function/Roles	Programs/ Activities	Future Development
Lembaga Pengelola Dana Bergulir (LPDB)	Governing body that provides endowment for agriculture-related entities.	<ul style="list-style-type: none"> • Loans • Savings • Financial Services 	N/A
Amartha Microfinance	To empower low-income people in rural areas with affordable financial services, enabling them to pursue life for greater purposes Vision: To be nationwide MFI that provides affordable financial services with the highest standard of excellence and the largest outreach	<ul style="list-style-type: none"> • Loans • Voluntary Savings • Financial Services 	<ul style="list-style-type: none"> • Loans in Local Currency • Loans in USD • Capacity-Building Grants • Donations • Guarantees • Loans in EUR
Bank Danamon	Danamon aims to become "The Leading Financial Institution in Indonesia" with a significant market presence. A Customer Centric Organization which covers all customer segments, each with a unique value proposition, centered on Sales and Service Excellence supported by World Class Technology. It aspires to be the Employer Of Choice and to be respected by our Customers, Employees, Shareholders, Regulators and the Community.	<ul style="list-style-type: none"> • Loans • Savings • Shareholder Capital 	N/A

BMT Pringsewu	To develop the members' economy in particular and community in general and involve in development of national economic array as well as developing modernize, fairness and prosper environment rooted in the Indonesian Five Principles and Constitution of 1945.	<ul style="list-style-type: none"> • Loans • Savings and leasing products. 	<ul style="list-style-type: none"> • Equity investments
BPR AN	Creating a healthy & sustainable rural banks, Mission: Providing financial services to the community, especially the micro and poor communities	<ul style="list-style-type: none"> • Loans • Voluntary Savings 	<ul style="list-style-type: none"> • Equity • Loans in Local Currency • Loans in USD • Capacity-Building Grants • Donations • Guarantees • Loans in EUR
BPR Bhakti Daya Ekonomi	To raise funds from the community in form of time deposits and savings to finance small class businesses and rural people	<ul style="list-style-type: none"> • Loans • Savings • Shareholder Capital 	<ul style="list-style-type: none"> • Donations • Capacity Building Grants
BPR BKK Cilacap	The mission of BPR is to empower the community economic condition, increase the local government revenue through dividend and tax payment as well as to improve the welfare of its employees	<ul style="list-style-type: none"> • Loans • Voluntary Savings • Fund Transfer Services 	<ul style="list-style-type: none"> • Donations • Capacity Building Grants
BPR Dana Agung Bakti	To Support economic development of the surrounding rural and sub-urban areas by providing financial services to small and medium enterprises	<ul style="list-style-type: none"> • Loans • Voluntary Savings 	<ul style="list-style-type: none"> • Loans in Local Currency

BPR NBP 11	<ol style="list-style-type: none"> 1. To provide fast and accurate service for its customers 2. To support microfinance and medium scale business development 3. To offer products in accordance with the needs of the public 4. To enhance the value of its shares and welfare of its management and staff 	<ul style="list-style-type: none"> • Grants • Loans • Savings • Shareholder Capital 	<ul style="list-style-type: none"> • Equity • Loans in Local Currency • Loans in USD • Capacity-Building Grants • Donations • Guarantee
BRI	To become a leading commercial bank that always prioritizes customer satisfaction.	<ul style="list-style-type: none"> • Loans • Voluntary Savings • Training and Consulting • Fund Transfer Services 	<ul style="list-style-type: none"> • Capacity Building Grants • Other Investment
CU Sawiran	To improve the quality of life and welfare of members. To create a financial services institution that is professionally managed in accordance with the values and principles of the cooperative.	<ul style="list-style-type: none"> • Loans • Voluntary Savings 	<ul style="list-style-type: none"> • Equity • Loans in Local Currency • Loans in USD • Capacity-Building Grants • Donations • Guarantees • Loans in EUR
KOMIDA	The development of YAMIDA into a micro financial entity capable to move the economy of poor communities based of fair, transparent and sustainable principles.	<ul style="list-style-type: none"> • Loans • Voluntary Savings • Insurance 	<ul style="list-style-type: none"> • Equity • Loans in Local Currency • Loans in USD • Donations • Guarantees • Capacity Building Grants • Loans in EUR
LPD Pecatu	Collecting saving from the local community and surplus funds owned by the village, and then lending these fund to the community members for various types of productive enterprises.	<ul style="list-style-type: none"> • Loans • Voluntary Savings 	N/A

LPD Ubung	To act as the financial arm of the village to improve the local economy.	<ul style="list-style-type: none"> • Loans • Voluntary Savings 	N/A
MBK Ventura	Improve the living standards of the bottom 25 percent of the population in Indonesia. Vision: Provide access to micro and small working capital to large numbers of low-income households, particularly in rural areas and small towns, in a transparent, honest, timely and efficient manner, and in accordance with recognized client protection principles	<ul style="list-style-type: none"> • Loans • Insurance 	<ul style="list-style-type: none"> • Equity • Loans in Local Currency • Guarantees

Existing Providers of Mobile of Electronic Payment Services

Presently, non-cash payment systems have yet to make its presence available in the value chain system of agribusiness in Indonesia. All transactions to farmers are done through cash, and payment between actors in different level of tiers is done by cash or bank transfer. Payment through internet banking is available yet services are not as broad as electronic payment services as offered by Mercy Corps.

1. Nokia Ovi Life Tools

The service was launched in 2009 in Indonesia. The target users of the company is Indonesian farmers in order to help them to have an easy access for more available information on agricultural prices, weather and availability of pesticides and seeds. Additionally, the information is customized by location.

The Agriculture services of Nokia Life Tools are available in Java and Sumatra at the first stage. The company was also working with the Ministry of Agriculture, the Center of Meteorology, Climatology and Geophysics (BMKG), Synovate and other partners to deliver important news and relevant information to consumers. The Company came up with the several type of mobile devices as well to support the mobile electronic services. However, it is reported that the service will be soon removed by the Company due to the new innovation that will come up in the near future.

2. XL Bumiku

XL as one telecommunication providers in Indonesia has launched its weather information service to help farmers in Indonesia and the community as general. This

service is free of charge and accessible by XL customers. The service was launched and can be accessed in April 2013.

XL Bumiku is supported by TotoAgriculture – a non-profit organization funded by the Bill and Melinda Gates foundation. In socializing the services, the company is also collaborated with Parade (Persatuan Rakyat Desa) with member of heads of community villages throughout Indonesia.

In the first phase, XL Bumiku provides weather forecasts based on data from TotoAgriculture.org. The next phase, this service will provide also access information about troubleshooting the soil, plant troubleshooting, market price information, and purchase of agricultural produce. The services can be accessed using any type of cell phone, does not necessarily have to be a smartphone.

The areas that can be accessed by XL Bumiku is Banyumas, Bandung, Garut, Kudus, Pati, Pekalongan, Purwodadi, Tegal, Magelang, Purwekerto, Majalengka, Tasikmalaya, Madiun, Probolinggo, Serang, South Jakarta, Kisaran, Labuan Batu, Padang Sidempuan, Siantar , Tapanuli and Jambi.

6. GAP Analysis on Existing Payment Mechanism in Value Chain System

There are several factors needed for a successful adoption of mobile money system for actors in the agribusiness value chains in Indonesia:

1. The knowledge on the mobile money system itself
2. The pattern of monetary transaction from the various actors
3. Equipment needed for the system implementation, both in hardware or signal coverage needed
4. The support of the system towards the need of the actors

Farmers, as we know, live mostly on the rural areas of Indonesia. While people living in the city may be able to enjoy flawless signal coverage provided by the existed communication companies, there are many farmers unable to get signal coverage from the provider. Even though there are some who live nearer to the city and got the signal coverage, there are still lots of farmers who are unable to use/have cellphone. This might be directly related to the educational level of farmers in Indonesia.

Currently, there are more than 40 million farmers in Indonesia, 46.19% of them are studying to the elementary level. Only 8.95% of farmers are graduated from high school, and 1.73% are graduated from university. Developer may need to consider about this fact while creating a mobile payment system addressed to our farmers. The system must be user friendly.

Cashless transaction occurred regularly on the upper tier of transaction. This means, the payment method used while doing transactions with various chain actors are also considering the other party involved with the transactions. For example: seed and fertilizer retailers are using cash while doing transactions with the farmers. The retailers are simply accommodating the wish of the farmers –that prefer to use cash payment system.

On the upper level, mobile payment system also has its own weakness: It is unavailable for corporate use. Monetary transactions that involving companies required higher security system and (as far as the value chain actors knowledge) still unavailable in mobile technology yet. Considering all the factors above, mobile payment system for farmers in Indonesia still have a long way to go.

Table 23 - GAP Analysis On Existing Providers of Mobile / Electronic Payment Services in Indonesia

NO	REQUIREMENTS / NEEDS & WANTS FROM FARMERS	CURRENT STANDING	DEFICIENCY	ACTION ITEMS
1.	Direct cash for paying debts, buying seeds, fertilizer and other supplies, house and family needs	Farmers receive cash which enable them to pay debts, buying seeds, fertilizer and other supplies, house and family needs	None	Not Available / Not Required
2.	Ability to borrow money for buying supplies or expansion, buy tractors, etc - with low interest rate and minimum complexity in application process/administration	Currently they are borrowing money or having debts by getting seeds, fertilizer and other supplies from Cooperatives. Cooperatives usually are not able to lend as much money as banks could give. Farmers do not have bank account and do not like to go to banks because banks are usually far and they feel the application process is too troublesome and they do not have the required documentation or records.	Cooperatives usually are not able to lend as much money as banks could give. Farmers do not have bank account and do not like to go to banks because banks are usually far and they feel the application process is too troublesome and they do not have the required documentation or records.	Provide a payment system/provider who allows the Farmers to borrow money with easy access, low interest rates and easy application process

3.	Have the payment money delivered to the Farmers directly without the need for going anywhere	Current payment allows Farmers to have the money delivered to their house	None	Not Available / Not Required
4.	Faster time to receive payment (most preferred in cash)	Some payments are received right when the products are collected, some payments need few days or weeks to be finalized. For rice the payment can be finalized in 1-3 days, for potatoes 1-10 days, for maize 1-3 days, for chilli 1 days - 3 weeks, for palm oil 10 days - 3 weeks.	Some payments need few days or weeks to be finalized. For rice the payment can be finalized in 1-3 days, for potatoes 1-10 days, for maize 1-3 days, for chilli 1 days - 3 weeks, for palm oil 10 days - 3 weeks.	Provide a payment system/provider that can help to ensure the payments (most preferred in cash) are received as soon as the products are sold to the buyers
5.	The harvesting period is usually the time where Farmers have very lack of money in hand, therefore they want to be able manage money expenditure.	Receiving all payments at once and keeping a lot money sometimes make the Farmers not able to control the expenses	Farmers not able to control the expenses	Provide a payment system/provider that can indirectly control the amount of money kept with the Farmers and somehow minimize the possibilites of taking out all the money at a time but still allowing easy access for money withdrawal regularly or whenever needed.

7. Additional Findings on Farmers' Interest Level in Using Mobile Technology in Agribusiness

One of the limitations of this report would be the small sample size of the survey method. The methodology and report are more focused on value chain analysis, both buyer and supplier sides, as well as actors involved in the business. The number of farmers interviewed is insufficient to define the overall interest level of farmers in Indonesia.

A study entitled *Agri-Fin Mobile Product Development Demand Research Report* conducted by Mercy Corps, the Microfinance Innovation Center for Resources and Alternatives (MICRA) Indonesia and the Grameen Foundation was conducted in 2012 across different crops (rice, potato, chili and maize) in the country. The surveys engaged 408 Indonesian farmers as the sample size through different types of methodology; Merchant Survey, Focus Group Discussion, Short-Form Baseline Survey and Long-Form Product Development Survey, assisting the organizations to explain further on the interest level of farmers to utilize mobile payment service in the agribusiness. The findings supplement this report with broader and clearer findings on farmers' interest level in accessing agricultural information using mobile phone technology.

Of the total number of respondents, 83% were reported to own a mobile phone. However, mobile phone usage is primarily limited to voice calls and SMS communication functions both for personal and business and not for any kind of mobile banking or Internet services. Only 13% of mobile phone users reported on having internet connection on their phone, which they mainly use to access social networks, agricultural information and for general information.

Furthermore, the study emphasized that under-developed telecommunication infrastructure in rural areas results in poor quality signal and is a major constraint in Agri-Fin product utilization and development in the business. Telkomsel is claimed to be the best provider to farmers on providing good strength and stability of signal. The survey results also explained more in detail with regards to the constraints such as farmers' anxiousness on fraud, such as stolen credit from mobile phones.

Despite the constraints in the market, Mercy Corps should not ignore the fact that there is a demand for agricultural information and financial services via mobile technology of Indonesian farmers in order to help their production process achieve higher yields and increase their own income level.

In terms of financial services, credit is the most significant service demanded by farmers to improve their access to technology and purchase additional equipment such as tractors, processing equipment and water pump. Other services would be savings, billing payment, insurance and remittance. Below is the summary of demand profile based on type of financial services:

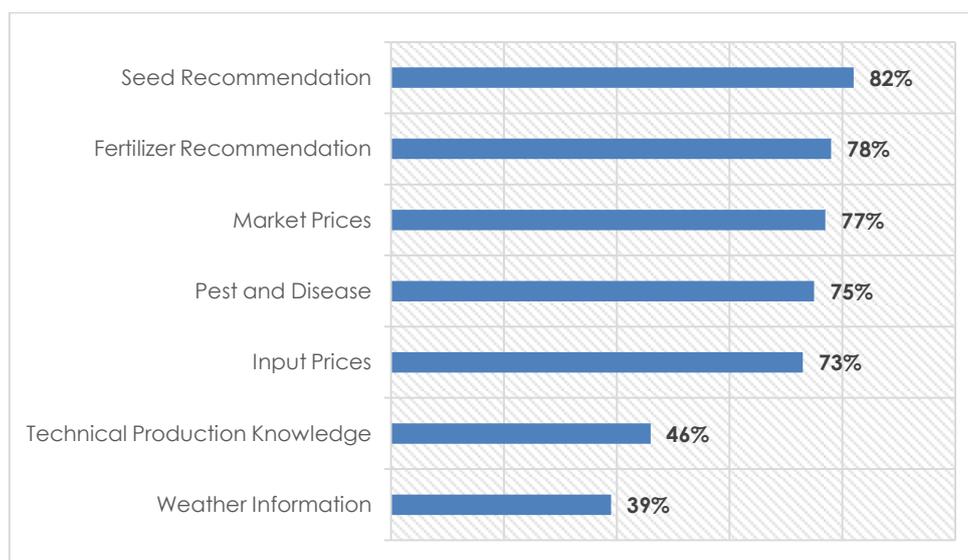
- **Credit:** Credit is mostly needed before the planting season. Around 60% of respondents are willing to access credit services from commercial banks. Other than that farmers need credit also to improve their marketing capacity. Participants are willing to pay only IDR 100,000 to IDR 200,000 in interest upon the harvest season and pay-off the total amount on the following harvest season.
- **Savings:** Farmers are reported to have limitations on saving their income due to the very small amount they receive. Savings are used for emergencies

rather than capital investment. This fact inhibits willingness of farmers to access mobile services, although some respondents report being willing to pay IDR 5,000 for the service.

- **Remittance:** Remittance services are mostly accessed by farmers through commercial banks or through a post office. According to the report, respondents in Wonogiri (maize farmers) report they would like remittances delivered directly to their home, cutting costs on transportation. Maize farmers in Wonogiri, primarily represented by women, show higher willingness to pay for mobile services compared to other districts. Meanwhile, Chili and potato farmers in Bandung reported to have the highest demand for free services.
- **Bill-Pay:** In terms of billing payment, the utilization of PPOB (Payment Point Online Banking) by farmers is relatively high. Farmers report familiarity making payments for utilities using the system. This could be a low-resistance point of entry for bundling agricultural information and remittance services. Moreover, respondents would be willing to pay around IDR 1,000 – IDR 3,000 per transaction.
- **Insurance:** Though respondents have not recognized any existing agricultural insurance services yet, they believe that such services will benefit them in order to protect farmers from loss of harvest, natural disaster and drought. Respondents report a willingness to pay for insurance services around IDR 10,000 – IDR 50,000 per month or IDR 30,000 – IDR 200,000 per quarter for agricultural life and health insurance products.

Furthermore, through a focus group discussion, the study gathered information on types of agricultural services and agricultural information needed. A high demand for trusted and reliable agricultural information services was discovered. This is in line with the high number of respondents who report obtaining information from government extension workers and farmer groups.

Figure 36 - Type of Agriculture Information Services and Percentage Received by Farmers



Based on the figure above, technical production knowledge assistance and weather information are the less accessible by farmers. A demand for reliable weather information is reported and would be a challenge for Mercy Corps on developing Agri-fin mobile services. Moreover, rice farmers are reported to be the lowest user-base for agricultural information services.

The study addressed satisfaction level across different information sources, noting that farmers trust their friends and relatives more than third party providers of information. The highest percentage of satisfaction on current services, however, is from input prices information gathered from Government agricultural extension workers, agricultural input dealers and buyers with farmer groups.

Survey results also stated that some farmers still prefer to access information through face-to-face interactions from Agri-input suppliers, government workers and farmer groups. Only 20% of respondents are willing to access it via SMS and voice. In addition, 40% of the sample is willing to pay for the services at a price point maximum of IDR 2,000 per transaction. This resistance to pay for access is due to the limited trust for reliable services as currently provided. On the other side, respondents from Indramayu (rice farmers) have their own point of view regarding the service cost, stating that the provision of information services is the responsibility of the government, thus it should not be shouldered by the farmers and be free of charge.

In Garut and Bandung, Chili and potato farmers are reported to have willingness on receiving information via mobile phone. Farmers in Garut were reported to show the highest demand for SMS and voice services. Face-to-face interactions are still preferred in all other districts. However, farmers still recognize that provided services are not meeting their needs and they do not feel they are being served well. A regular monthly visit and meeting opportunity is supposedly required by order of

Agricultural extension officers to deliver information to assist farmers, starting with cultivation practices up to post-harvest processing.

Maize farmers in Wonogiri area are interested in accessing agriculture information service via mobile phone. Those respondents state that they prefer to access it in the form of text (SMS) that will cost them around Rp. 100 to Rp. 1,000 per message. On the other side, accessing mobile information is in low demand since there is an absence of knowledge by farmers in navigating the internet and they assume it to require a higher cost.

In summary, the study concluded that farmer interest and willingness on accessing agriculture information and financial services through mobile phone technology is promising. Though farmers in Indonesia are not currently utilizing the mobile phone on accessing agriculture and financial services information, they agreed and believed that mobile phones would be a highly effective tool to deliver information as it supposed to be affordable, accelerate business processes and cutting cost on transportation. Additionally, the higher rate on mobile phone ownership of farmers and penetration of mobile phones in rural areas would be one of the key drivers for Mercy Corps on developing Agri-fin Mobile products in Indonesia.

8. Conclusion and Recommendation

The study conducted for this report describes how mobile technology payment and information services are being applied within agricultural value chains including farmers itself in new and innovative ways. It is also discussed and assessed how mobile technology, specifically mobile money transfer and mobile banking can benefit agribusinesses and farmers in the country.

Key Points	Conclusion	Recommendation
<p>1. Market Potential</p>	<p>Mobile payment technology services have the potential for large scale with approximately 44 million farmers in Indonesia at the end of 2012. This number is projected to remain stable for the next few years in line with the stable growth of agribusiness sector in the country.</p> <p>In agricultural value chains, the usage of mobile phones can reduce the cost to agribusinesses working with large numbers of small farmers across different crops, thus supports increased investment potential in rural areas.</p> <p>It is stated that 85% of 44 million farmers in Indonesia own mobile phones. This number is projected to increase in line with the growth of mobile penetration</p>	<ul style="list-style-type: none"> • Develop a sustainable business plan • Build strategic partnerships with government and other key stakeholders

	<p>rate at around 33% annually.</p> <p>As of the moment, there is no existing well-developed and/or well-established mobile payment and information service for the agribusiness in Indonesia yet. On the other hand, most transactions between value chain actors in the business are done by cash and bank transfer.</p> <p>At the national level, there are around 10 to 15 million payment transactions between farmer (farmer groups) across 5 type of crops in both buyer and supplier sides value chain system.</p>	
<p>2. Challenges & Barriers for Existing Payment System</p>	<p>Farmers in Indonesia still prefer cash for their payment transactions and have not recognized mobile payment services as an urgent need for business.</p> <p>Lack of knowledge and misperception of the concept of mobile payment and information services.</p> <p>Lack of trust between value chain actors in terms of making payment transaction (fraud concern)</p>	<ul style="list-style-type: none"> • Build local relationship with smallholder farmers to access and benefits from mobile service • Workshop on the mobile payment and technologies services models, more highlights on the advantages are most important
<p>3. Challenges and barriers in providing mobile payment services and mobile agricultural information services between micro finance institutions and smallholder farmers</p>	<p>Constricted customer base. Not all MFIs have the data about farmers in Indonesia.</p> <p>Some banks lack experience and, in some cases, interest in low-income customers. Furthermore, there exist inflexible regulatory requirements with significant agreement issues</p> <p>Cultural conflict. Some of rice farmers are still traditional and find the mobile payment system will be contradicting with their daily practice. Farmers themselves still do not see the value of spending money on subscribing to internet.</p> <p>Presenting an innovative way to form private-sector partnerships is one of the challenges in implementing the mobile payment services in the agribusiness in Indonesia.</p>	<ul style="list-style-type: none"> • Build strategic partnerships with government and other key stakeholders • To be involved in micro transactions, existence of MFIs is on the right track in assisting the farmers who have low-income. Regulatory requirements should be less-complex than banks. • Workshop on the mobile payment and technologies services models, more highlights on the advantages are most important • Expanding network for obtaining private sector partners with close communication and education about the

		<p>potentials of providing the system.</p>
<p>4. Important Factors/Key Driver for Adopting Mobile Payment Services Technologies</p>	<p>Indonesia is supported with telecommunication infrastructure and mobile wireless networks are started expanding as technical and financial innovations widen coverage to more areas.</p> <p>Prepaid connectivity and inexpensive devices, often available second hand make mobile phones far cheaper</p> <p>Applications and services using mobile phones range from simple text messaging services that could provide real-time public services</p>	<ul style="list-style-type: none"> • Build a user-friendly mobile platforms with value-added services to the users • Workshop on the mobile payment and technologies services models, more highlights on the advantages are most important
<p>5. Interest Level</p>	<p>Medium interest level mostly derived from wholesaler and area distributor actors. Nowadays, the said actors are familiar with the mobile banking system in order to make payment in their business transaction.</p> <p>Low level interest on switching to mobile payment by farmers is mostly driven by the lack of knowledge with the concept and lack of awareness. However, they are seeing the benefits on reduce risk of carrying cash on each payment transactions.</p>	<ul style="list-style-type: none"> • Approach needs to start from farmers until wholesaler and area distributor actors. • Workshop on the mobile payment and technologies services models, more highlights on the advantages are most important • Long-term commitments to build coverage products and services, maintain

		regular improvements
<p>6. GAP Analysis on Existing Payment Mechanism</p>	<p>Cooperatives usually are not able to lend as much money as banks could provide.</p> <p>Farmers do not have bank account and do not like to go to banks because banks are usually far and they feel the application process is too troublesome and they do not have the required documentation or records.</p> <p>Some payments need few days or weeks to be finalized. For rice the payment can be finalized in 1-3 days, for potatoes 1-10 days, for maize 1-3 days, for chilli 1 days - 3 weeks, for palm oil 10 days - 3 weeks.</p> <p>Farmers not able to control the expenses when receiving all payments at once (but still not wanting to go to and from banks for cash withdrawal)</p>	<ul style="list-style-type: none"> • Provide a payment system/provider who allows the Farmers to borrow money with easy access, low interest rates and easy application process • Provide a payment system/provider that can help to ensure the payments (most preferred in cash) are received as soon as the products are given to buyers. • Provide a payment system/provider that can indirectly control the amount of money kept with the Farmers and somehow minimize the possibilities of taking out all the money at a time but still allowing easy access for money withdrawal regularly or whenever needed.

Based on 6 important parameters above, there are some key recommendations derived as basis of action items for Mercy Corps to assist the farmers and actors in the 5 crops value chain. Below steps are the detail recommended action items to address the available potentials and issues in Indonesia.

1. Develop a sustainable business plan

Some important points for the mobile payment system and information services are as followed:

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- A beneficial and user-friendly mobile platform with value-added services to the users (e.g. low interest rate, low transaction costs (if applied), weather forecasts, etc.)
 - Mobile payment and information system should operate a user-friendly platform that could offers its users a convenient means of carrying out mobile money transactions from their mobile devices and from wherever they are. Moreover, farmers mostly want to adopt a services a value-added system which in ways could help them to have an easier access to borrow loan from the financial institutions.
 - System that allows farmers to borrow money with easy access to apply system and easy application process (less complex than banks are required)
 - If possible, farmers would wish for a system that could help ensuring the payments are received as soon as products are given to buyers.
 - Due to the farmers' preference to receive cash for paying the needed materials for farming, household needs, some needs to pay debts they already have, the mobile payment system provider is required to provide many kiosks near their areas for cash withdrawal.

2. To build strategic partnerships with government and key stakeholders

Key stakeholders across the agricultural supply chain collective support will be needed as well as contribution from the expertise to bring the critical elements together. Additionally, to have a partnership with security system vendor would help the mobile payment service to perform in a reliable and safe way. Government bodies such as Ministry of Agriculture should be also approached for the assistance in mapping out the locations of farmers and relevant actors and support in approaching and educating the farmers and value chain actors.

3. To build local relationship with smallholder farmers to access and benefit from mobile service

Building local relationships will be crucial in helping smallholder farmers to access and benefit from mobile services. By engaging local stakeholders, it will help to ensure that both the content provided and the services used to deliver this content are made to order to their market.

4. Workshop on the mobile payment and technologies services models

A series of workshops around the possible mobile payment and information services for key player participation with presentation by a number of experts would help users to adopt the idea and models of the mobile payment and information services.

5. Long-term commitments to build coverage products and services; Regular surveys to users are compulsory for obtaining satisfaction level and detecting areas for improvement.

Through investment in permits and infrastructure, the mobile payment and information system should be able to demonstrate a long-term commitment in markets to build coverage, products and services which would be able to deliver economic and social benefits to the agribusiness in Indonesia. A regular survey from users' needs is to be conducted to gather feedbacks and investigate if there are any room for improvement.

9. Appendixes

9.1 List of Agribusiness Organization in Indonesia

No.	NAME OF ORGANIZATION	ADDRESS	CONTACT
1.	Asosiasi Bio Agro Input Indonesia (ABI)	KompleksPerkantoran Royal Sunter Jl. Danau Sunter Selatan Blok E No.5, Jakarta Utara 14350 Indonesia	(021) 651-6680
2.	Asosiasi Perusahaan Alat dan MesinPertanian Indonesia (ALSINTANI)	Jln. Sidosermo PDK IV-346 Surabaya	(031) 849-5186
3.	Asosiasi Pemasar Hortikultura Indonesia(ASPerti)	Jln. Rungkut Mapan Tengah IX Blok D1-17 Surabaya	(031) 871-2385
4.	Himpunan Kerukunan Tani Indonesia (HKTI)	Jln. Kapuas 2 Surabaya	(031) 561-7640
5.	Serikat Petani Indonesia (SPI)	Jln. Mampang Parapatan XIV, No.5, Jakarta – Indonesia, 12790	(021) 799-1890
6.	Aliansi Petani Indonesia (API)	Jln. SlametRiyadi IV RT 10/04 No. 49-50, KebunManggis – Matraman, Jakarta Timur 13150, Indonesia	(021) 856-4164
7.	Himpunan Kerukunan Tani Indonesia	Jln. DR. Satrio C4 - 18 Casablanca - Jakarta Selatan 12950	(021) 5210-3784
8.	Asosiasi Agribisnis Cabai Indonesia	N/A	N/A
9.	Masyarakat Agribisnis Indonesia	Jln. Cianjur 17 Jakarta	(021) 3155310
10.	Asosiasi Benih Indonesia	Wisma Perkasa, Jl. Buncit Raya 21B Jakarta	N/A
11.	Agri-Business Club (ABC)	Jln. HOS. Cokroaminoto No. 83, Menteng, Jakarta Pusat 10310	(021) 315-1745
12.	Gabungan Pengusaha Kelapa Sawit Indonesia (GAPKI)	Jln. Brigjen Katamso 62i, Medan 20151	(061) 517-614
13.	Indonesian Environmental & Organic Farming Foundation	Jln. Dato Tonggara 18 Jakarta 13510	(021) 800-4332
14.	Perhimpunan Penyuluhan Pertanian Indonesia (PERHIPTANI)	Kampus Deptan, Gedung D Lt. III, Jl. Harsono RM No. 3 Ragunan, Jakarta Selatan	N/A
15.	Asosiasi Petani Kentang (ASPEK)	N/A	N/A
16.	Asosiasi Produsen Pakan	N/A	N/A

Indonesia		
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9.2 List of Funders of MFI in Indonesia

Funders of MFI in Indonesia	Background
CORDAID	<ul style="list-style-type: none"> • Cordaid (Catholic Organization for Relief and Development Aid) is a Dutch development aid organization that endeavors to turn the tide in the battle against poverty and injustice. • Cordaid is active in Africa, Asia and Latin America and focuses on the several aspects of development cooperation: conflict transformation, emergency aid and reconstruction, health and well-being and entrepreneurship. • The organization has an annual budget of approximately 130 million Euros (2012). Cordaid's Microfinance Program is part of the Business Unit Investments. Under the Microfinance program it invests some 9 million Euros every year in loans, guarantees or equity. In addition, some 1 million Euros are spent annually as grants for supporting technical assistance and capacity building to MFIs and support to other microfinance actors. • Cordaid supports both Microfinance Institutions directly as well as invest in specific Microfinance Investment Vehicles Partner MFIs are selected on the basis of their social mission and are supported in reaching out to remote areas, vulnerable groups and in empowering their membership/clientele. Cordaid's investment portfolio is managed by an Investment team of 12 persons headed by the Director Investments.
Dignity Fund, L.P.	<ul style="list-style-type: none"> • The Dignity Fund was formed to bring needed capital to the microfinance industry to fuel the social empowerment of the poor. • The Dignity Fund aims to increase the number of poor households with access to credit, savings and other financial services by providing debt financing to promising microfinance institutions. • The Dignity Fund believes that additional funding will enable microfinance institutions that are seeking capital for growth to reach more poor clients, allowing more entrepreneurs to lift themselves out of poverty with dignity.
FMO	<ul style="list-style-type: none"> • The Netherlands Development Finance Company (FMO) supports the private sector in developing countries and emerging markets in Asia, Africa, Latin America & the Caribbean and Europe & Central Asia. • FMO provides loans, participations, guarantees and other investment promotion activities. The goal is to contribute to the structural and sustainable economic growth in these countries and, together with the private sector, obtain healthy returns. These returns make FMO a valuable risk partner.
Grameen Credit Agricole Microfinance Foundation	<ul style="list-style-type: none"> • The Grameen Credit Agricole Microfinance Foundation was founded in 2008 by Crédit Agricole SA in partnership with 2006 Nobel Peace Prize winner Professor Muhammad Yunus, and Grameen Trust • The Grameen Crédit Agricole Microfinance Foundation has adopted the values of its founders and puts their commitment into practice by supporting the development of microfinance

	<p>institutions and facilitating the emergence of "social businesses" in developing countries.</p> <ul style="list-style-type: none"> • It offers microfinance institutions a complete range of financing products and services in a spirit of partnership. It targets institutions adhering to best governance, transparency and consumer protection practices. • It focuses primarily on microfinance institutions dedicated to agriculture and rural development, as well as those specifically intended for women. • As a non-profit organization, the Grameen Crédit Agricole Microfinance Foundation conducts its activities in a manner that allow it to preserve the €50 million endowment contributed by its founders.
Incofin Fund	<ul style="list-style-type: none"> • Incofin invests in sustainable microfinance institutions (MFIs) in developing countries that provide appropriate financial services to small entrepreneurs and emphasize high social added value. • Incofin supports MFIs that help enterprising people set up their own businesses, improve their living conditions, and thus break the vicious circle of poverty.
Microfinance Alliance Fund	<ul style="list-style-type: none"> • To promote social and economic justice in SE Asia by increasing low-income people's access and participation in the formal financial sector. • CRS CORDAID Microfinance Alliance Fund is a pilot project with the end purpose of creating a bigger regional fund that will be open to other organizations (preferably those wishing to invest in a social justice fund). In its first phase, the project is tackling the following issues: <ol style="list-style-type: none"> 1. Legality of transacting business across countries. 2. Relationship with government agencies in its participating countries 3. Limitations set by each country 4. Documentation procedures taking into consideration the limitations in its countries 5. Possibility of centralizing operations by assigning tasks to consultants from each country 6. Cost-benefit of centralizing operation 7. Other factors that would ensure the success of the regional fund • The first phase is terminating in December 2002. The preparation for the second phase is presently being finalized, and the committed funds for MFIs are still uncertain at this point.
Oikocredit	<ul style="list-style-type: none"> • Oikocredit is one of the world's largest sources of private funding to the microfinance sector. • Oikocredit provides credit and equity to small businesses through microfinance institutions across the developing world and directly to trade cooperatives, fair trade organizations and small-to-medium sized enterprises (SMEs). • Oikocredit investors are offered a dual return: social and financial. In addition to earning modest financial returns, investors are secure in the knowledge their money is being used to fight poverty, promote fair trade and respect our planet's natural resources.

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