

Access to Finance: The Cocoa Case Cocoa Sector Training for Financial Institutions

Part 2: Cocoa Financials



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Business Plan

1st Edition

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1. INTRODUCTION

The second part of this manual concentrates on cocoa financials. This includes the economic perspectives of cocoa, risk, cash flows, finance needs and so forth.

Financing farmers seems to be a difficult task, especially in the case of smallholder farmers. From the farmers' side, they often lack collateral, farm and household records, and knowledge regarding formal financial services. Governmental and development project credit schemes from previous decades have led to the incorrect perception that loan repayment is not a priority, because those "loans" were a social activity.

Financial institutions typically do not have sufficient in-house experience with particular crops and the risks associated with those crops. Furthermore, small loan amounts seem to be unattractive and labor-intensive, other sectors look more promising, and farmers are technically considered not creditworthy. In the past these challenges made it difficult to develop appropriate and commercially successful products. Due to the lack of financial products there is limited framework established to analyze agricultural clients in a cost efficient way.

High-productivity cocoa farming requires continuous investment of the farmers' time and resources in order to achieve optimal results. Properly done, cocoa farming can be a very profitable business with regular cash flows. How profitable depends on the qualification and motivation of the farmer, the quality of the material (trees, soil and agri-inputs), the daily care for the farm, post-harvest processing, access to markets/buyers, etc. Excellent cocoa farmers can grow more than 2,000 kg of cocoa per ha/year, while the average farmer reaches about 450 kg/ha/year. 40.9% of the 60,000+ cocoa farmers involved in the SCPP program have a farm size of less than 1 ha. Those small farm sizes make it challenging to lend to because of the cash flows generated.

Studies have shown that the classification of farmers only based on land sizes is not target leading. The majority of farmers have a farm size of 1 ha or more and/or has excellent production (more than 1,000 kg/ha). It is possible to identify those farmers through a specific Management Information System (MIS).

At the time of writing this manual, a huge gap between cocoa demand and supply is expected to emerge in 2020, a fact that will be addressed below. This results in good prospects for farmers and for financial institutions financing them. The cocoa price for Indonesian cocoa farmers depends on the world market price for cocoa (in USD) and the exchange rate between USD/IDR. This development will be discussed in the following chapter.

Currently, land use competition is high. There are different crops like rice, palm oil or corn which require less labor input, making those crops attractive for cocoa farmers if they were to get the desire to switch crops. This is only valid for non-professional farming though. Professional cocoa farmers can earn a much higher income per hectare than professional corn or palm oil farmers. Still, some characteristics of those competing crops make them more difficult for lending to because of the harvest cycles and timely occurrence of cash flows generated over the year. Cocoa as a crop tree needs long-term commitment of the farmers and professional cocoa farmers are an attractive target group for financial institutions. However, banks have to see the potential of professional cocoa farmers compared to the average cocoa farmer. The professionalization of cocoa farmers is a remaining challenge in Indonesia.

Analyzing loan applications from input suppliers (e.g. supplier of fertilizer), processors or other stakeholders in the value chain is easier than analyzing cocoa farmers' applications. The other stakeholders usually have a more organized setting, complete records and an accounting system, which cocoa farmers lack. They are often legally registered and do have collateral, such as stock or machinery. Therefore, their financials can be modeled easier, loan amounts are higher and financial institutions feel more comfortable to loan to them. Lending to farmers can work very well, which can be seen by the loans given by traders to farmers.

There are sector specific risks. Lending to the agricultural sector seems to be more risky than lending to other sectors. One of the objectives of this manual is to develop the knowledge of the people involved in a financial institution, starting with the managers and going down to the loan officers, but also internal audit, risk control, etc. Usually, other sectors like retail businesses and services do have records and regular/daily cash flows to be analyzed. Assuming that sufficient data (sales records, production, borrower's history, etc.) are available and farmers have a basic financial literacy level, risks for financial institutions can be limited to an acceptable and profitable level. Lending to professional cocoa farmers can make good business, not only because of the profitable lending. Lending to professional cocoa farmers can have a regional and local economic impact, especially income generation, and increase the client base for future provision of financial services.



2. WHY COCOA? ECONOMIC PERSPECTIVES OF COCOA

2.1. Economic Perspectives of Cocoa

Cocoa is one of the most important commodities in Indonesia, especially since more than 1 million smallholders and their livelihoods rely on this commodity. However, in recent years, the cocoa sector in Indonesia has been impacted by a number of challenges. Aged trees and poor soil management are results that could have been foreseen and addressed, because they result from poor farming practice and maintenance. Many farmers lose their interest in cocoa farming due to the hard work involved and other crops seemingly offer better economic options.

Cocoa is an attractive crop for financial institutions, because it can be harvested and sold throughout the year and creates a permanent cash flow. That makes cocoa different from many other crops, which can only be harvested once or twice a year. Permanent cash flows can reduce the risk for financial institutions, because repayments of interest and/or principal can be designed accordingly. Based on the cash flow/deposits a farmer can be monitored on a regular base. Cocoa is storable for a long time and transport costs compared to the commodity price are marginal. This gives cocoa an advantage over other crops, e.g. in horticulture.

Cocoa is a cash crop. It is grown and sold, rather than being consumed at the farm level like rice, and still needs a lot of added value to make chocolate or other products. Currently, cocoa cannot be substituted to make chocolate. Its economic perspective depends on various factors and the most important one is the demand for it. Cocoa is of particular interest to the Indonesian government, as many cocoa specific programs and announcements of future commitments have shown.

Cocoa grows on trees. It takes time to grow a tree and it is obviously different from growing rice or corn. Cocoa farmers need long-term com-

mitment. Once producing, a tree can yield for up to 40 years, but it reaches peak pod production between the 7th and 15th year. The time between planting and first production, usually 3 to 5 years, requires planning ahead in order to attain steady production and income from the farm. Gaps in the farm's production cannot be covered by a spur of the moment decision to plant more cacao trees. Switching the crop only makes sense if a new crop has better economic returns.

The following table lists the major cocoa producers in the world. Indonesia is the 3rd largest producer and the government intends to become the biggest producer. Indonesia's primary competitive advantage in the global cocoa trade lies in its ability to supply large quantities of beans with high fat content. Cocoa grown in Indonesia, originally bred in Malaysia, was developed for its high yield (fat), not its flavor. As a large volume supplier of filler cocoa beans, Indonesia does not have any competitors. Indonesian beans are traded at a discount to the standard NY terminal price. Still, the farm gate prices (what the farmer receives when he sells) are amongst the highest in the world, providing at least professional Indonesian cocoa farmers a decent income. However, farmer income also depends on land sizes, productivity and other cash flows.

Estimations on annual production at country level are difficult and highly diverse, as the chart below shows. The total number of cocoa farmers in Indonesia is estimated between 1.0 and 1.6 million. The total annual production figures vary depending on the body calculating it. In 2012, ICCO estimated that the annual production reached 450,000 tons, while the Direktorat Jenderal Perkebunan (Disbun) estimated 845,000 tons. In 2013, the annual production estimates ranged between 482,000 and 740,513 tons, according to ICCO and Disbun respectively.

Other estimations are somewhere in between. On the country level the estimating is difficult, however, on the individual level yields can be analyzed more accurately, based on the number of trees, comparison to peer farmers as well as the region. Still, there is an information asymmetry between farmers and financial institutions.

2012/2013	Estimates 2013/2014	Estimates 2014/2015
Africa	2838	3199
Cameroon	225	232
Côte d'Ivoire	1449	1794
Ghana	835	740
Nigeria	238	190
Others	89	95
America	622	726
Brazil	185	229
Ecuador	192	250
Others	246	268
Asia & Oceania	485	447
Indonesia	410	320
Papua New Guinea	41	42
Others	34	40
World Total	3943	4201

Table 1: Production of Cocoa Beans

Source: ICCO Quarterly Bulletin of Cocoa Statistics, Vol. XLI, No. 4, Cocoa year 2014/2015

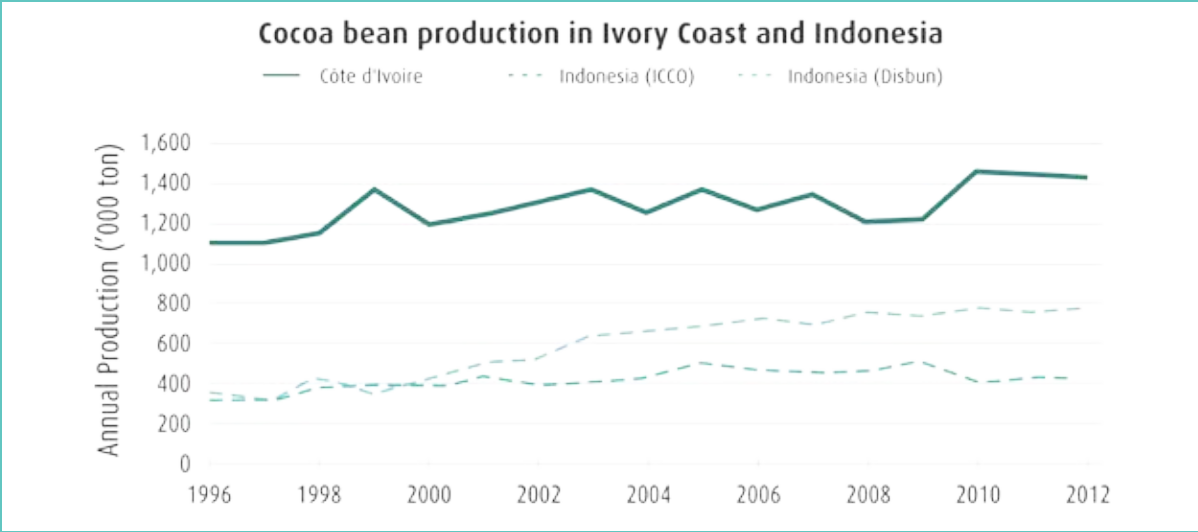


Figure 1: Cocoa Bean Production Ivory Coast and Indonesia

Source: CSP Roadmap, p. 43

Indonesia's cocoa planting area has been increasing over the last decades, but the production did not keep up, meaning the productivity per hectare decreased in the last few years. The main reasons for that are aged trees, depleted soils and farm maintenance. In the global context, together with the increasing demand, this resulted in a higher cocoa price in the last several years. This means that for farmers it is currently very attractive to grow cocoa. However, there is at least a 3 year time gap from the point they decide to grow cocoa until their first yield, while other crops such as vegetables could be produced much faster.

Over the last few years, Indonesia has tried to keep value adding activities in the country. A staggered export tax on cocoa beans established in 2010 led to quick growth in domestic cocoa processing capacity because there is no export tax on processed cocoa products.

Cocoa Price (USD/MT)	Export Tax
< 2,000	0%
2,000 - 2,750	5%
2,751 - 3,500	10%
>3,500	15%

Table 2: Export Tax in Indonesia

Installed capacity (estimated at 600,000 MT) exceeds current bean production in Indonesia with current capacity utilization between 70% and 80%. Processors are interested in getting sufficient supply to achieve 100% factory utilization and will import the missing amount of beans. This indicates that the ICCO production estimates are closer to reality than the official government numbers. Buying beans is highly competitive and the farmers get good prices. At the same time, competition amongst traders can lead to lower margins for those traders.

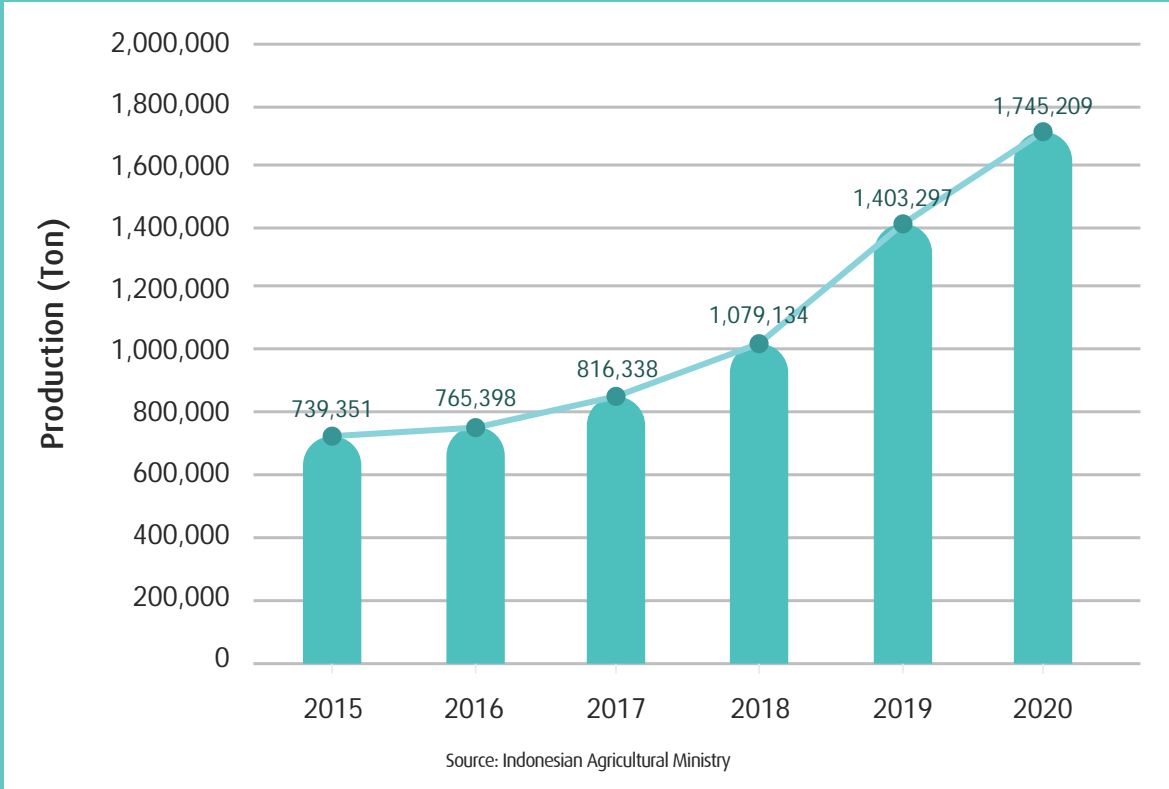


Figure 2: Planned Indonesian Cocoa Production 2015 - 2020

Source: Indonesian Agricultural Ministry

2.2. Key Challenges in Cocoa Sector Finance

Despite the good economic perspectives of cocoa, there are specific challenges on the financial part of the cocoa sector. Those are often related to the behavior and operating environment of financial institutions and to a lesser extent related to the farmer’s behavior and possibilities. The key challenges in cocoa sector finance include:

- Financial institution issues:
 - Financial institutions perceive the agricultural sector as risky due to weather risk, diseases, price fluctuations, etc.
 - Limited understanding of the crop-specific risks and opportunities of the cocoa sector; this results in lending products which are not tailor-made to the sector-specific needs of the farmers and their organizations.
 - Accessibility of farmers: farmers usually live in rural areas, often outside the operational area of a financial institution, making visits time consuming and thus expensive.
 - Sufficient collateral such as land certificates are often not available
 - Better business opportunities outside of agriculture, e.g. in retail or service.
- Low level of organization in the cocoa sector. Farmer organizations are the exception rather than the standard in the cocoa sector and they still face the problem of not having financial track records. Thus, financial institutions are reluctant to provide lending to start-up enterprises.
- Land use competition: Other crops are sometimes economically more attractive to the farmer, but professional cocoa farming is actually more profitable than other crops.
- Record keeping at farmer level.

Those challenges are addressed, both in this manual as well as in the daily program activities to support the farmers in better agricultural practices.

The chart below shows a general cocoa supply chain and which parts interact with financial institutions. Financial institutions are already familiar with most of the actors in the supply chain (shown in blue boxes). Input providers, processors, traders and retailers often have access to finance and are served by the financial institutions with specific services and credit programs (red arrows). Cocoa farmers are addressed occasionally, but not in the same structured way as the other actors. As shown by the green arrows, cocoa farmers usually access finance through other actors in the supply chain rather than directly dealing with financial institutions. Due to the lack of sector specific financial products, only a minority of cocoa farmers are directly financed by financial institutions at this moment.

The cocoa producers, mostly unorganized smallholders, are often considered not creditworthy by regular financial institutions. Immediate suppliers, buyers, family and friends are giving loans to farmers. This “supply chain lending” often leads to unfavorable dependencies, but not necessarily at high costs. Financial institutions should be able to provide better services, since it is their core competency to lend money. With exception to traders/collectors, for whom financing is vital to secure sufficient supply, financing should not be the core competence of neither input suppliers nor other stakeholders in the supply chain.

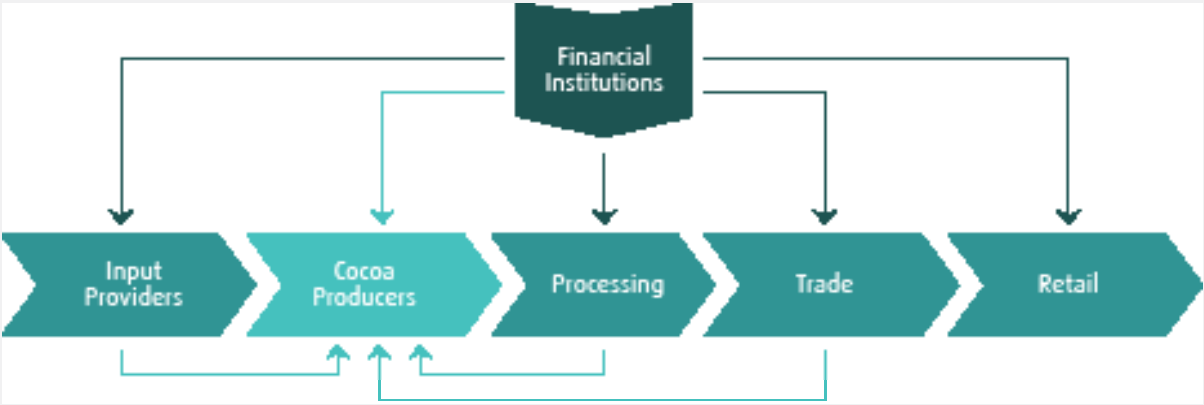


Figure 3: Cocoa Supply Chain

2.3. Demand-Supply Gap

There is expected to be a huge gap between demand and supply over the next few years. The industry stakeholders are concerned about this gap. At the same time, there are some indications that the demand will increase even further, especially in Asia. The annual production over the last few years was relatively stable at around 4 million MT per year.

“[A]gainst a background of higher growth in consumption than in the production of cocoa beans, the largest users have become acutely concerned about the risks to supply and to pricing.”

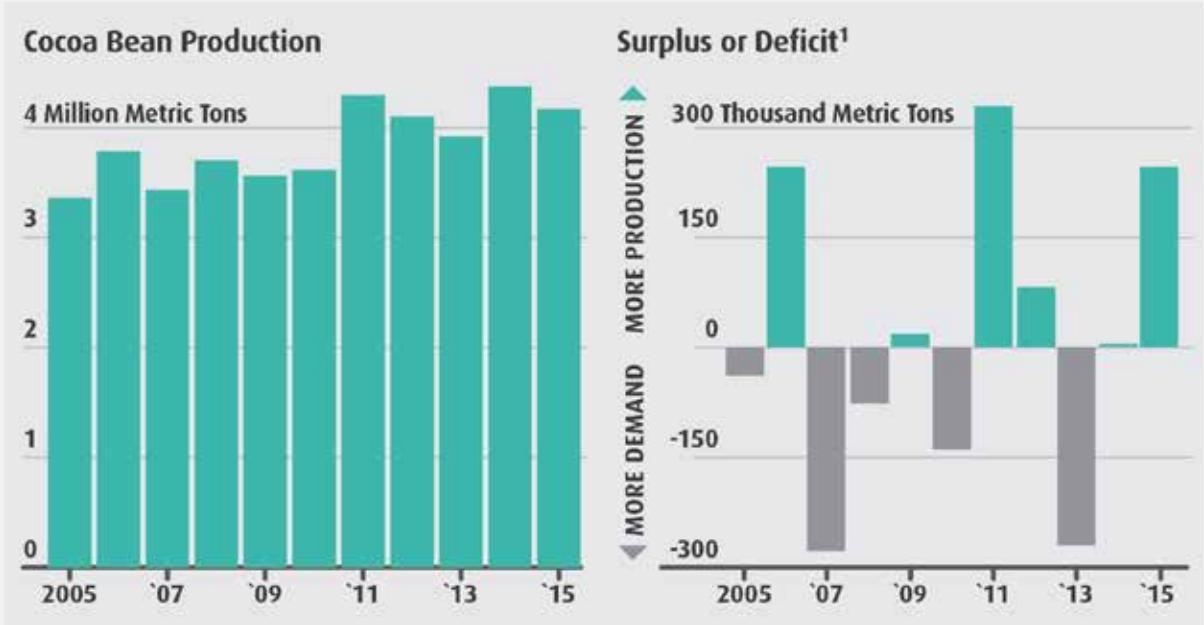


Figure 4: World Cocoa Bean Production, Surplus/Deficit

Source: wallstreetjournal.com (2016)

The chart below shows the world chocolate demand and Asian consumption. Although this is not identical with the cocoa demand, it is obvious that there is a direct relation between both. The chart shows the strong demand in Asia, driven by China and India.

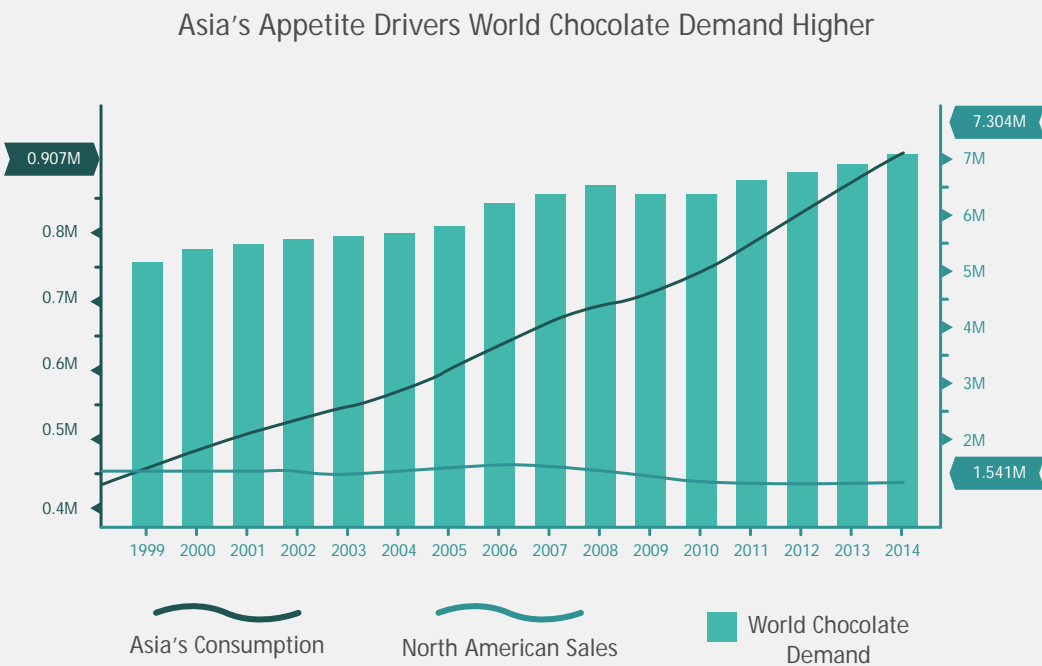


Figure 5: Asia's Appetite Drives World Chocolate Demand Higher
Source: Bloomberg.com

Global chocolate consumption is currently rising by 2-3% annually. In 2012, the cocoa consumption in Indonesia was 0.1 kg/capita/year, compared to a 5.88 kg/capita/year in Switzerland, 0.6 kg/capita/year in Malaysia and 0.04 kg/capita/year in China. Cocoa consumption and chocolate consumption are not the same since chocolate has more ingredients than just cocoa. In 2013, the Indonesian chocolate consumption was 1.2 kg/capita/year.

2.4. Prices

Cocoa world market prices are affected by various factors, including stock/grind ratios, expectations for future production/demand, global food prices, and consolidation/fragmentation in cocoa trade and processing industries. These components generally set the tone for long-term trends in cocoa pricing, while trading by investment funds tend to drive movement in the short-term. The exchange rate between IDR and USD also has to be taken into account. The main market place for cocoa is New York. Although Indonesia has its own market place with the Jakarta Future Exchange

(JFX), volumes are marginal compared to New York. Those are the price factors on a macro level.

Price factors on a micro level include the distance between farmers and traders, competition amongst traders, quality of the beans, price negotiation skills and post-harvest processing methods.

The price development from 2007 to February 2016 is shown by figure 6.

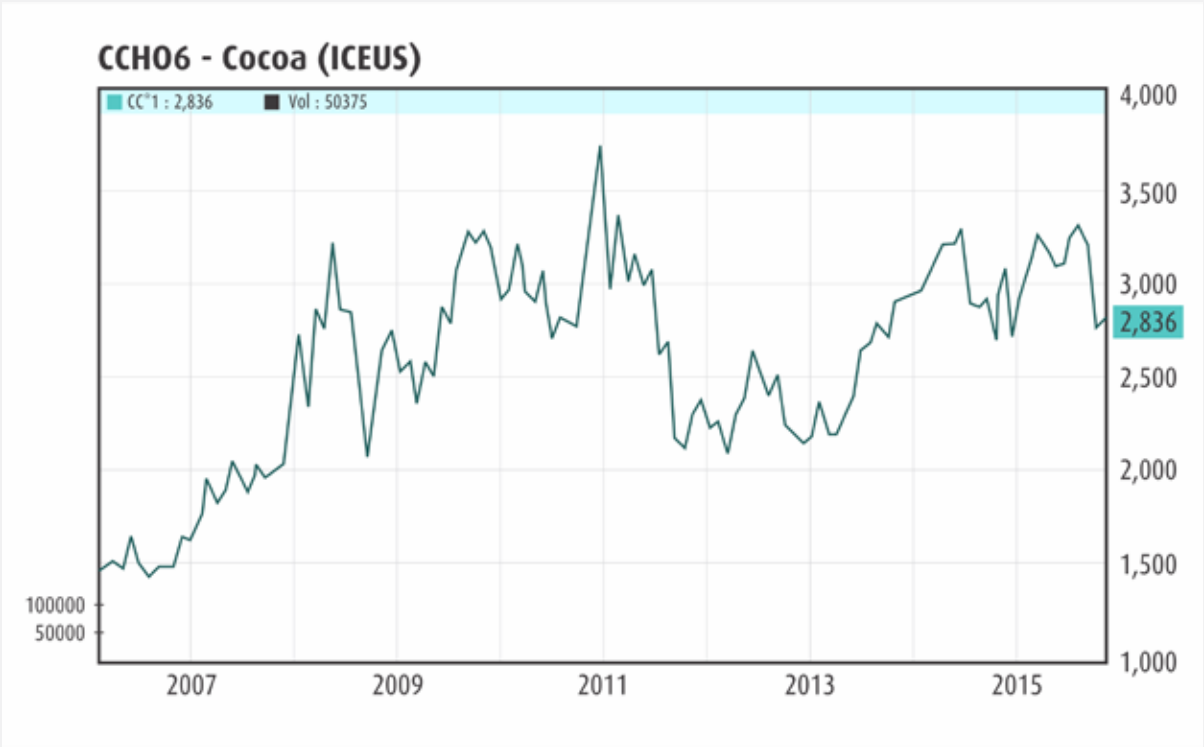


Figure 6: Cocoa Price Development 2007-2016 (Nasdaq)
Source: Nasdaq.com

The increase since 2013 comes from the supply/demand gap and rising interest from funds as described above. Long positions in the future market were built up with the positive consequence of higher prices, which benefited the farmers. On the one hand, the decrease starting in 2016 could reflect a higher predicted production or it might be a sign of a slowing global economy. In the last seven years the price limitation was approximately USD 2,000 per metric ton.

Indonesia has been operating as a free market, where exporters, either directly or through agents, buy from the farmers at daily world market price levels. Therefore, the Indonesian cocoa trading market is highly competitive which is good for the farmers, because they

can choose the buyer and the best price. As mentioned before, Indonesian beans are usually traded with a discount to the world market price due to quality reasons. The farm gate price is obviously lower, because of costs involved to get the beans to the final processor. Still, the competition and demand sometimes leads to an even higher farm gate price than the world market price. Importing cocoa beans is subject to a 5% import tax at this current point in time.

The world market cocoa price development and the price paid to cocoa farmers in Indonesia for the last 4 years is shown below. It can be seen that the price doubled between the beginning of 2012 and the end of 2013.

Cocoa Price (2012 - 2015)

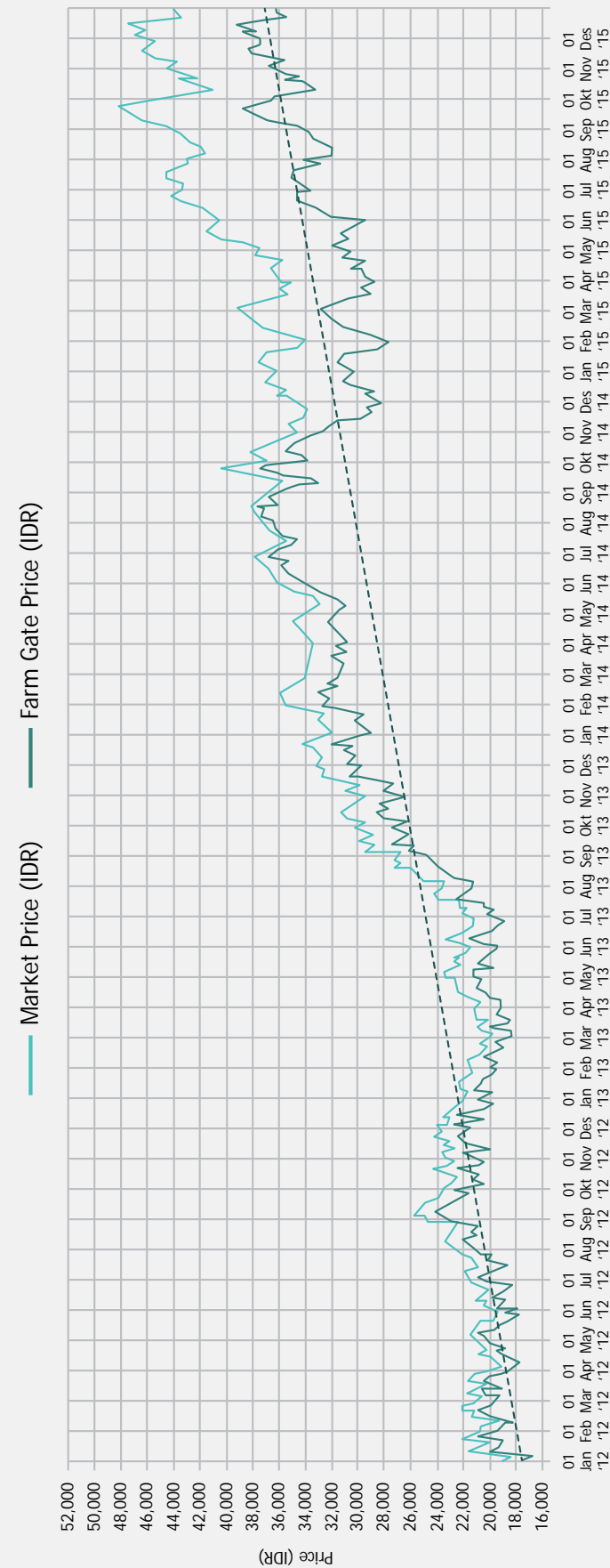


Figure 7: Cocoa Price Development 2012-2015 (Indonesia)

Source: BT Cocoa

Currently, professional farmers are satisfied with the situation, and with the current price cocoa farming can be a profitable business.

Cocoa prices on the international market tend to follow a long-term pattern, which reflects the characteristics of the cocoa cycle and indirectly (or sometimes directly) influences the shifts in emphasis of production between countries and regions. During cocoa boom periods there tends to be a surplus of supply on the world market, leading to falling prices, then low and stagnant prices. The low prices contribute to the ending of the boom period until eventually consumption outgrows production. This results in the world market entering a period of structural supply deficits. The cocoa sector is right now in this stage, further intensified in Indonesia due to two main reasons. First, farmers are switching their crop on purpose under the assumption that their income will improve. Second, virgin rainforests are not as easily accessible as 30 years ago. The forest areas are simply smaller and protected by governments that are increasingly being subject to international pressure.

Some general rules as to how prices for farmers are currently made:



Photo 1: Dried Beans

- For unfermented dried beans with standard quality characteristics: (World Market Price minus USD 500) multiplied by the Exchange Rate. Price discounts are made if there is too much moisture or too much waste in the bags.



Photo 2: Wet Beans

- For wet beans: 37-40% of the dry bean price



Photo 3: Fermented Beans

- For fermented and dried beans: Price of dried beans plus IDR 2,000 per kg

Prices are made on a daily basis from off-takers and sent via SMS to traders, buying stations and key farmers. They are also written on a board at the trader's place.

2.5. Productivity – Some Data

The production per hectare depends on various factors:

- Farming knowledge / Good agricultural practice / Farm maintenance
- Use of proper agri-inputs
- Soil quality
- Planting material
- Share of cocoa on the overall farm
- Number of producing trees
- Age of the producing trees
- Yield of the producing trees

Based on 60,000+ farmers that are participating in the SCPP program in Indonesia to date, some key information is:

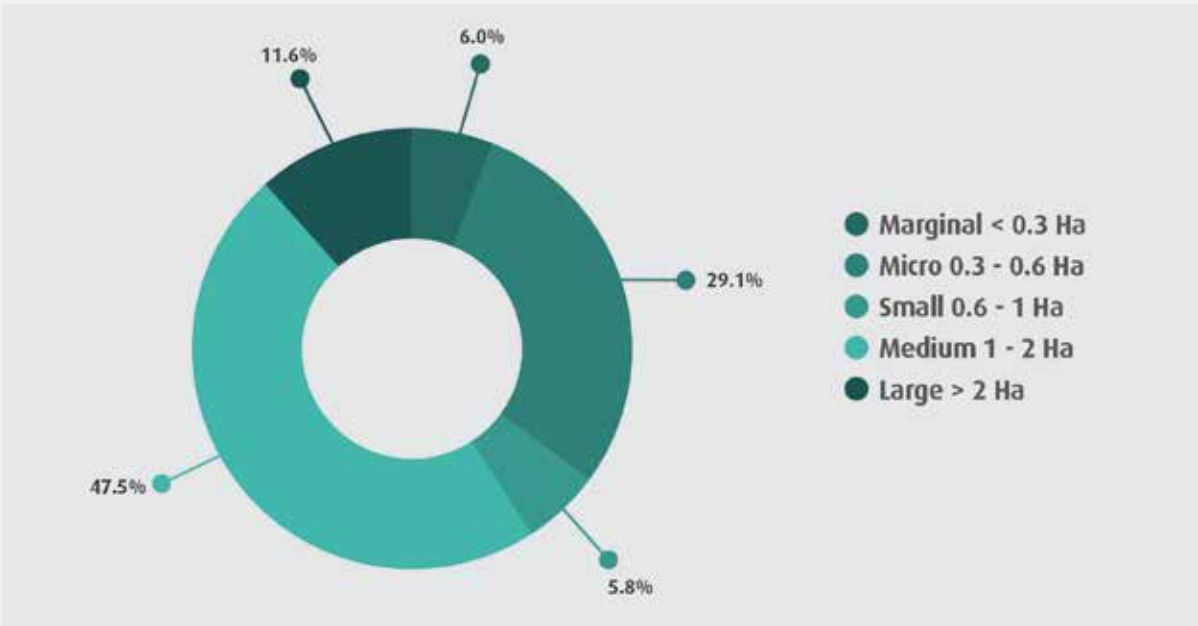


Figure 8: Average Cocoa Farm Size
Source: CocoaTrace data as per 22 February 2016

59.1% of the farms are larger than 1 ha which is broken down into 47.5% that are between 1-2 ha and 11.6% with more than 2 ha. Cocoa is a labor-intensive crop. Based on farmer experience, cocoa needs three hours of attention/maintenance a day per hectare to maximize GAP and post-harvest handling. 3 hours per day x 52 weeks x 6 days a week divided by 8 working hours per day = 117 man-days per hectare. This results in a maximum of 2 hectares per farmer (= 234 full working days per year), if working alone.

In the current farm composition (see figure 4), 70.9% of the trees are yielding cacao trees, meaning they have an age of between 3 to 30 years. Another 9.9% of trees are replanted and not yet yielding. Those trees will produce after 3 years at the latest, but it shouldn't be forgotten that there is a continuous process of rehabilitation, replacing old yielding and non-yielding trees. Good practice would be to replace 5-6% of the older trees every year, resulting in a permanent 15-18% share of non-yielding trees on the farm (3 years times 5 or 6%

per year). 11.5% of the cacao trees are old and not producing anymore. Those trees should be replaced as soon as possible. 7.7% of the cocoa farm is used for other purposes including other fruits, legumes, hard wood, etc.

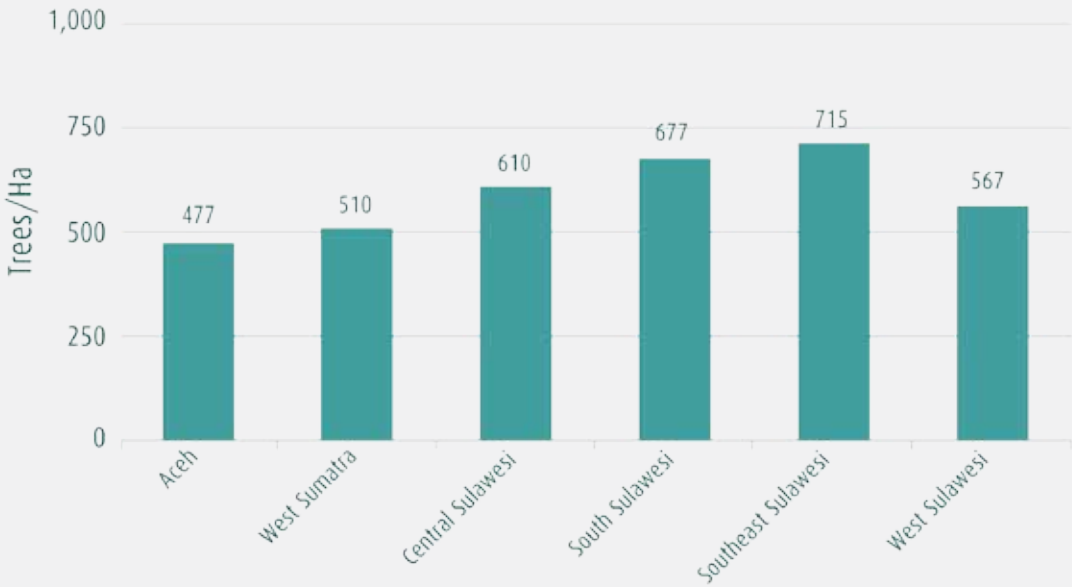


Figure 9: Average Number of Cacao Trees per Hectare
Source: CocoaTrace data as per 22 February 2016

The number of producing trees per hectare and the production per tree are very important indicators, because both result in the overall production from that farmer. About 800 to 1,000 cacao trees can be grown per hectare. This includes producing and non-producing trees including those that are newly planted. The reality is still a bit different and depends on how many other plants/trees are intercropped. The number of cacao trees in 5 out of the 6 provinces SCPP is working in averages from 477 to 715 trees per hectare, still far from 800 to 1,000 trees per hectare in total.

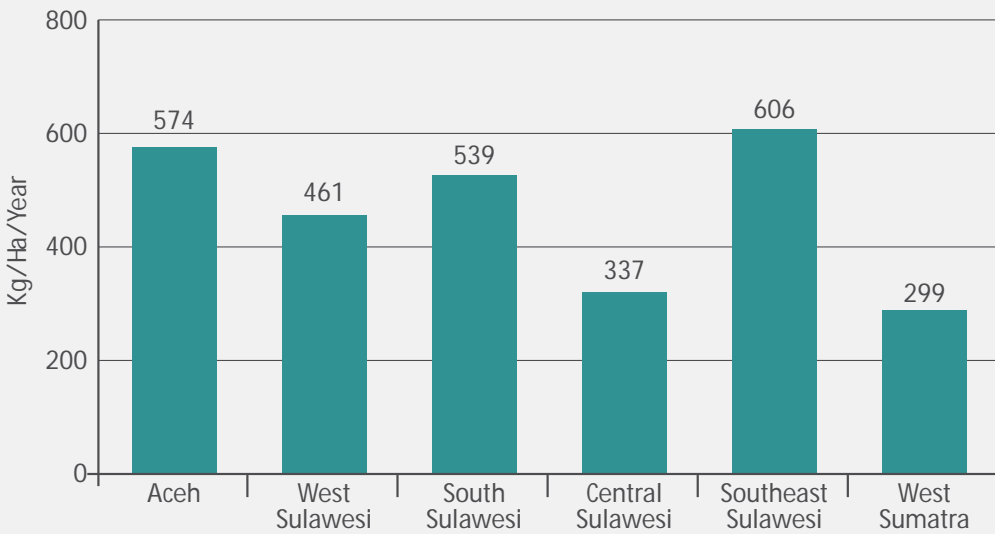


Figure 10: Average Cocoa Farm Productivity
Source: CocoaTrace data as per 22 February 2016

Professional cocoa farmers in Indonesia have on average 27.8% more trees per ha and produce 4 times more cocoa per tree than unprofessional cocoa farmers. When these two factors are combined, professional farms are 5.1 times more productive per hectare than unprofessional farmers.

Although the production is often measured as kg/ha/year, this only gives an indication about the overall cash flow. It does not indicate if GAP is actually applied nor does it give insight about any other income for the farmer. A good cocoa farmer can produce 1,000 kg/ha/year and an excellent farmer can produce up to 2,000 kg/ha/year.

2.6. Yield Potential

An indication of the effects of different farming practices on the yield can be seen in the box below.

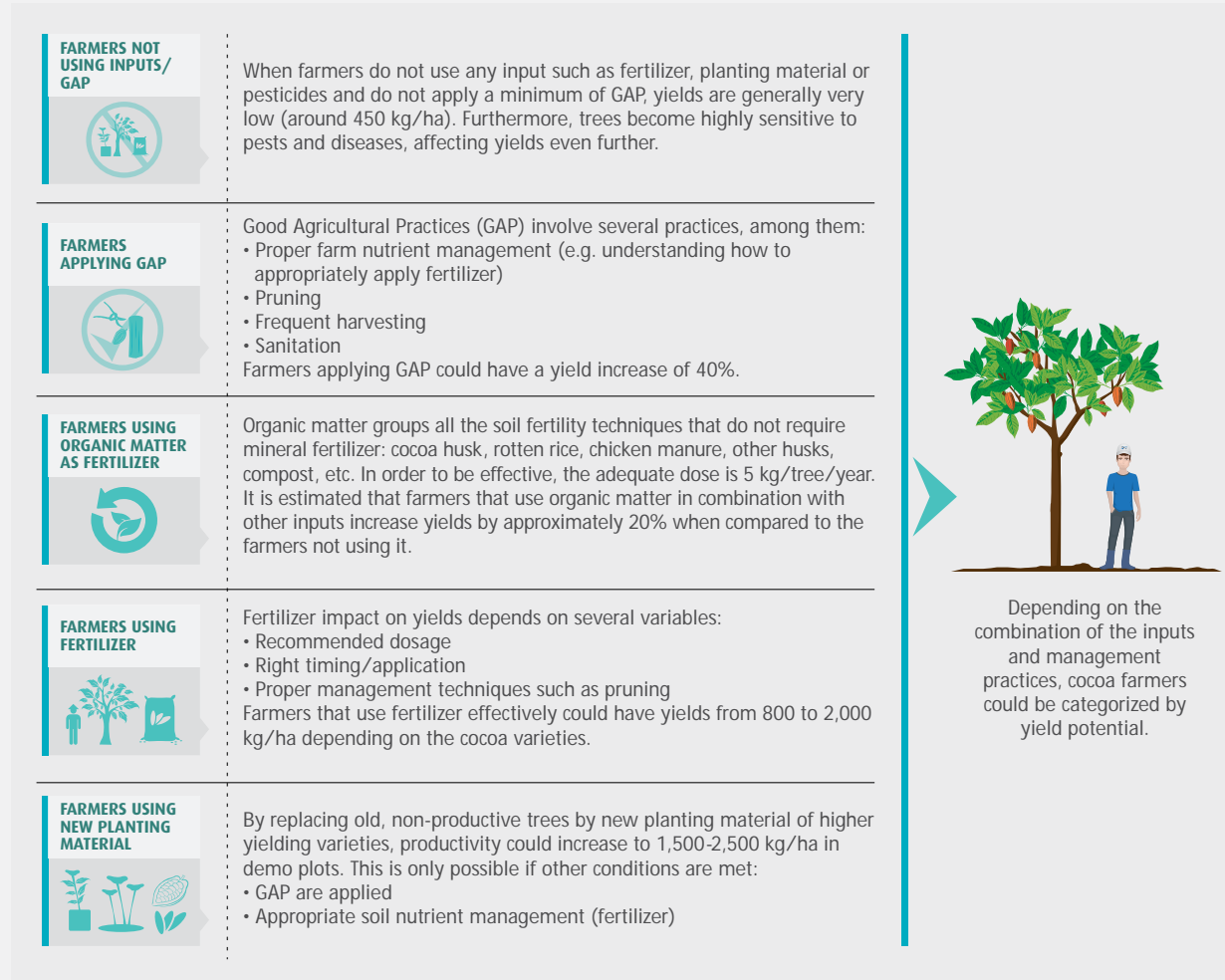


Figure 12: Farming Activities and Yield Potential

Source: CSP Roadmap, p. 50, adjusted by SCPP

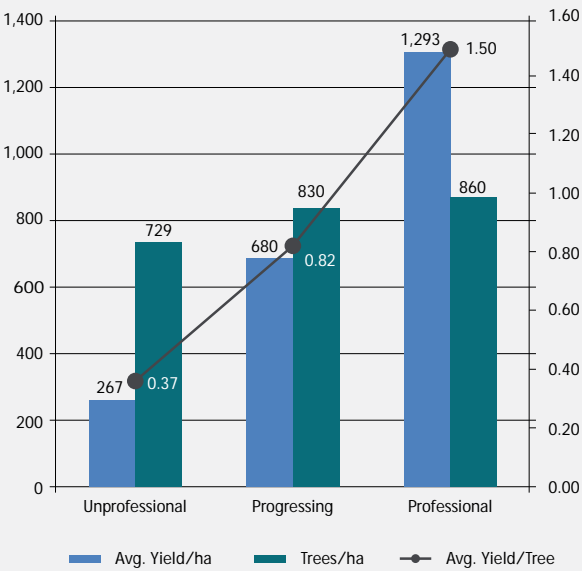


Figure 11: Yields and Trees of Different Farmer Categories

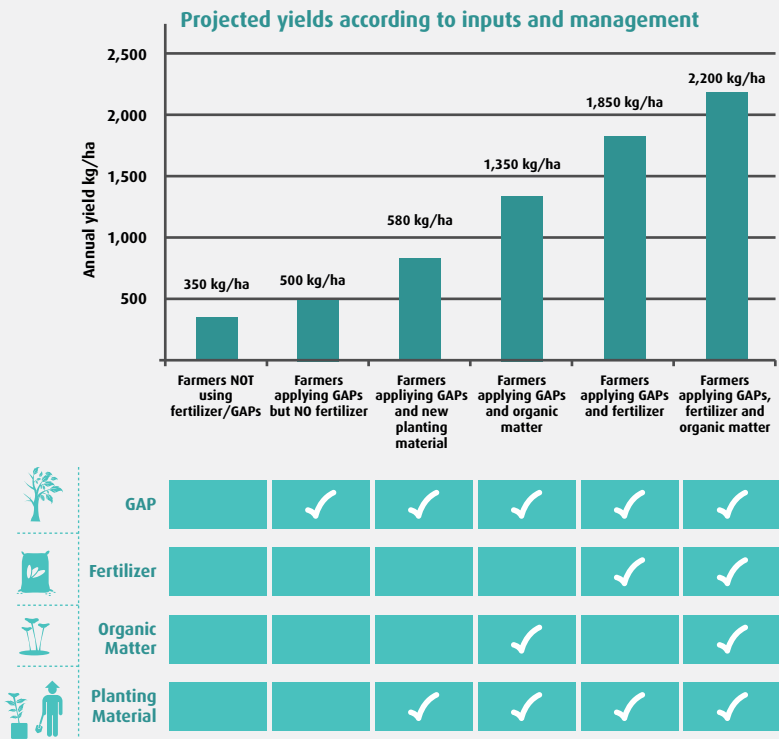


Figure 13: Projected Yields According to Inputs and Management

Source: IFC (2013) Final Report of Trial and Demoplot in Polman, NewForesight Analysis

It is estimated that an average farmer in Indonesia has a yield of 350 kg/ha without applying any kind of GAP or inputs (assuming a planting density of 1,000 trees/ha). By adding fertilizer alone, without proper understanding of the right application methods and other GAP (such as pest management), yield will not increase much. However, when fertilizer is used appropriately and in combination with other GAPs, yields could reach up to 850 kg/ha in the field.

Combining GAP and proper fertilizer use (organic or mineral) with improved cocoa varieties, yields can increase dramatically to over 1,350 kg/ha.

When all practices are combined in the appropriate way, meaning GAP + right quality of fertilizer + compost + improved planting material, yields could potentially increase to 2,200 kg/ha for the regions of Indonesia with optimal environmental conditions

It should be noted that the projected results are expected by farmers with excellent knowledge, good planting material and only after some years of operating. For loan analysis reasons, the maximum production should be limited to 1,500 kg/ha/year or less to be on the safe side.

2.7. Competing Crops

When speaking about the economic perspectives of cocoa, we have to keep in mind that there are competing crops that currently have higher income opportunities for farmers. Those include rice, corn, oil palm and rubber. Farmers switch to those crops since it is an economic alternative for those with a very low cocoa production. The current income per hectare as per August 2014 looks as follows:

Crop	Production (in metric ton) per ha per year	Price per metric ton (February 2016, world market price)	Income per ha in USD at current prices (range)		Income per ha (in IDR)	
			Min.	Max.	Min.	Max
Cocoa	0.3 – 2.0	2,857	571	3,557	7,599,620	47,311,082
Corn	3-10 ton/ha per harvest cycle, 2.5 cycles a year -> 6.0 – 25.0 ton per year	144	576	2,839	7,655,480	37,764,147
Palm Oil	3.0 – 8.0	562	843	2,597	11,211,900	34,546,648
Rice	4.0 – 6.0 ton per harvest cycle, between 2 and 2.5 cycles a year -> 8.0 – 15.0 ton per year	359	719	3,005	9,562,168	39,966,533
Rubber	0.8 – 2.0	1,270	762	1,832	10,134,600	24,365,600

Table 3: Income from Competing Crops

Source: Price information: www.indexmundi.com as per 09 September 2014, production information: various sources, including Nestlé, Barry Callebaut, SCPP; Exchange rate IDR/USD: Bank Indonesia. Palm Oil after processing, not Fresh Fruit Bunches (FFB)

Profitability depends on the market price of the crop, total production and costs. Market prices can fall and rise. Price risks also exist for other crops, but cocoa is a tree crop and reversal is not as easy as it seems. Once they are removed for another crop, it takes 3-5 years until cacao trees are productive again. This might explain the price mark-up, since the first few years no income is earned. Cocoa is not a capital-intensive crop, but rather, a work-intensive crop. The highest costs occur for agri-inputs like fertilizer, or land in case of expansion. Frequently, farmers use fertilizer that is subsidized by the government. Although being cheap the fertilizer composition often does not suit the need of cacao trees. Still, the application of fertilizer can be planned flexibly and in case the costs are too high, a farmer can choose not to apply fertilizer.

The table above shows the world market prices in USD which are a snap shot as per the beginning of September 2014. It does not include the costs involved in farming and it doesn't take into account how much of the world market price ends up in the pocket of the farmer (world market price vs. farm gate price). Hence, the table can only give an indication about the income potential of various crops. Its important to keep in mind that smallholders can easily grow several hectares of palm oil without loss of productivity, whereas for cocoa the limiting farm size is mostly 2-3 ha, because of the labor input required. The question still is who owns the "several hectares" of land?

It can be seen in the first chart above that the price for rubber has much higher volatility than the price for cocoa. The second chart shows the volatility of three other crops. The next chart below gives a better idea on volatility, comparing the relative price differences on a 10 years basis with 2004 set at 100%. Interestingly, the prices in this period fluctuated heavily, but at the moment the increase compared to 2004 is between +60.26% (rubber) and +91.23% (palm oil), with +85.03% for cocoa. It should be remembered that if a 10-year period is selected randomly and based on a rice price peak in 2008 or rubber price peak in 2011 the chart would look completely different. The most interesting fact is that nominated in USD, cocoa had the lowest volatility.

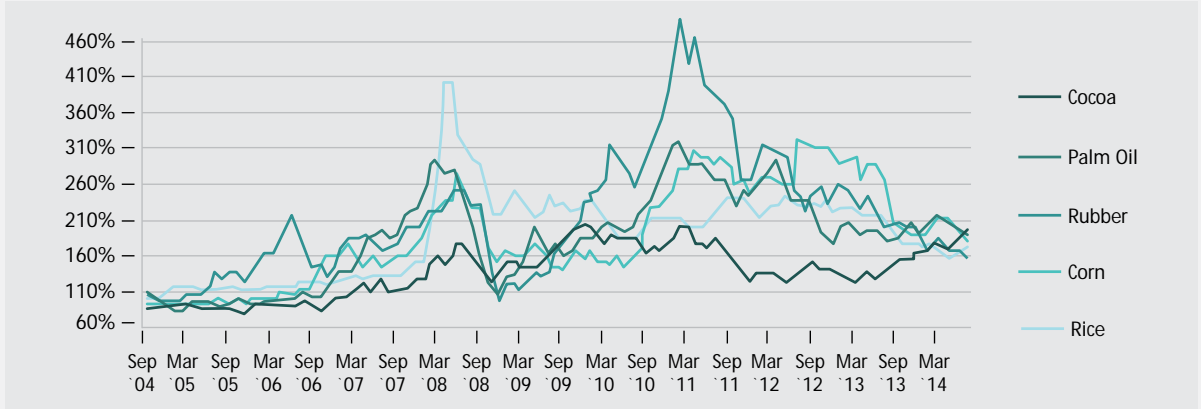


Figure 16: Price Volatility (Indexed)
Source: SCPP, based on data of www.indexmundi.com

The prices per metric ton itself do not say too much about the farmer's situation. For that we have to multiply production with prices to compare the options. Obviously, it makes a difference to produce 1 ton per hectare for USD 1,000 (total USD 1,000) or 10 ton for USD 200 (total USD 2,000), although the absolute price of USD 200 per ton is lower than USD 1,000 per ton.

A study found that Indonesian oil palm smallholder yields were 35% lower than private plantations and 40% lower than state-owned plantations. Another study found independent Indonesian growers make returns on land-use of IDR 11.0 m/ha for low-yielding land to IDR 26.8 m/ha for high-yielding land.

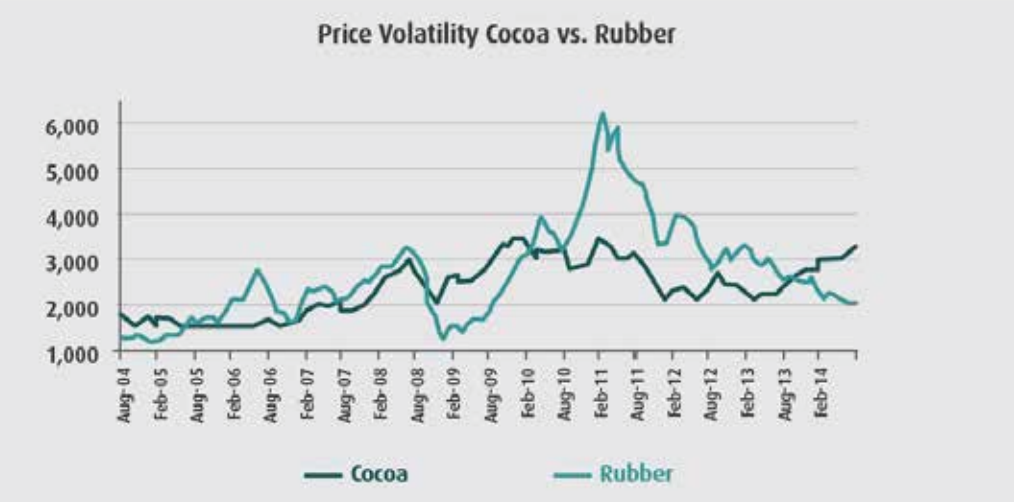


Figure 14: Price Volatility Cocoa vs. Rubber
Source: www.indexmundi.com



Figure 15: Price Volatility Palm Oil vs. Corn vs. Rice
Source: www.indexmundi.com

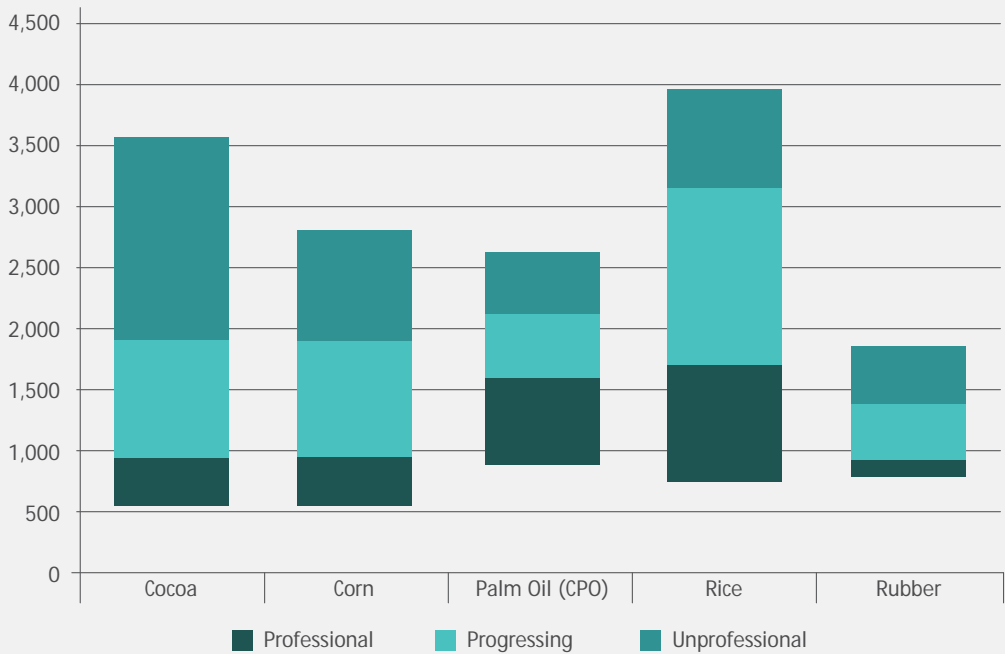


Figure 17: Crop Comparison - Annual Income per Hectare (in USD)

Based on the chart above, it can be seen that cocoa has one of the highest ranges of possible income. Unprofessional palm oil farmers can earn more money than unprofessional cocoa farmers, which might be one of the reasons for farmers to switch to other crops. Farmers who take their cocoa farming business seriously and treat their crops in a professional manner can reach much higher production and income than those who give less attention to their farm. It can also be seen that a professional cocoa farmer can earn more per hectare than a professional corn, palm oil or rubber farmer, which

illustrates the potential of cocoa as a source of income.

Opportunities for using their land for other crops are somewhat limited as rice requires irrigation, oil palm requires proximity to a palm mill, coffee grows optimally at higher elevations, and crops like corn or potatoes are unlikely to provide a higher income. Due to rapid degradation, oil palm fresh fruit bunches must be delivered the same day they are harvested, which may limit cocoa smallholders from converting if they are too far from a mill.

2.8. Current Situation

2.8.1. Current Farm Situation

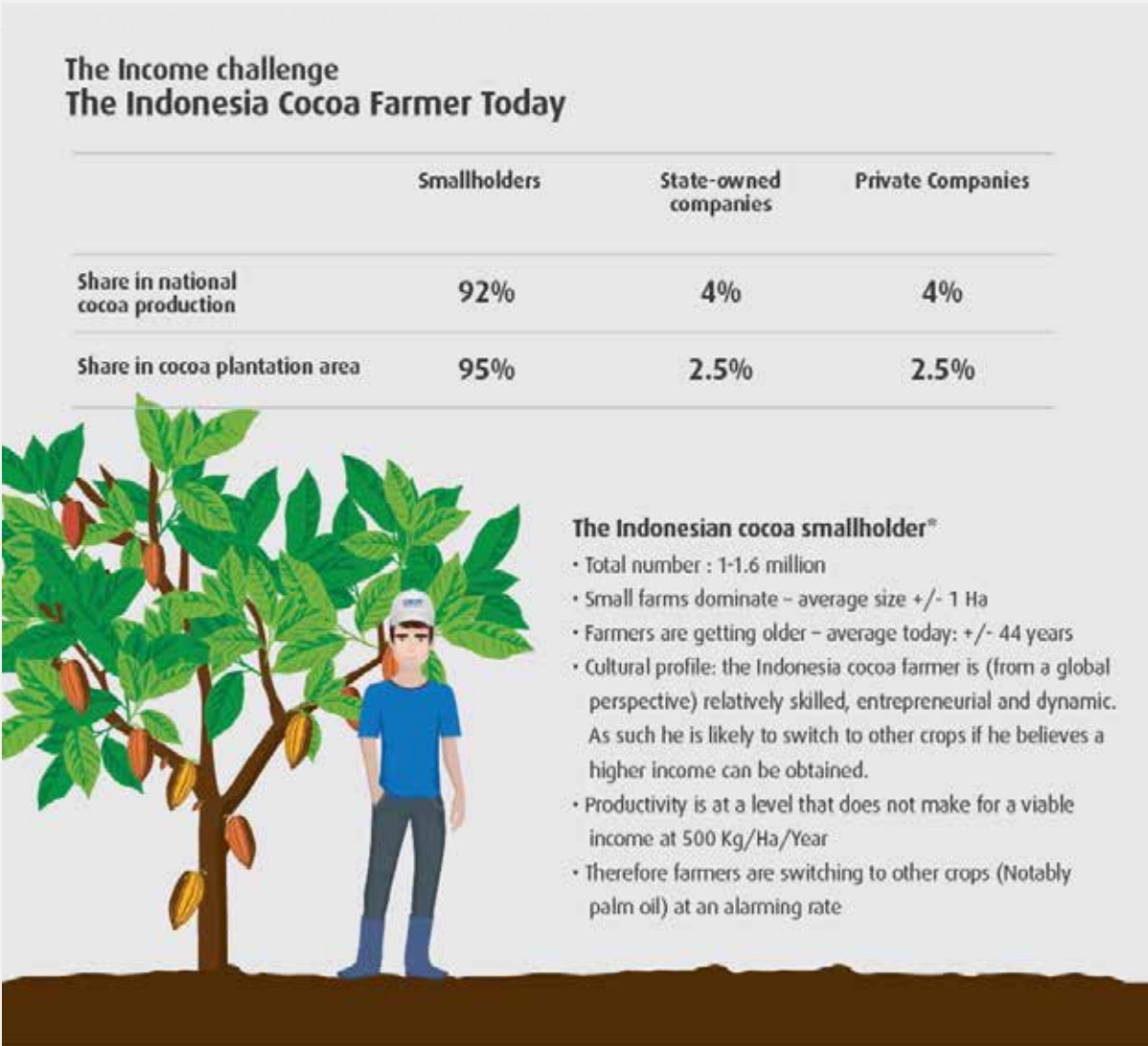


Figure 18: The Indonesian Cocoa Farmer today
Source: CSP Roadmap, p. 46, adjusted by SCPP

The current financial demand and supply situation for cocoa farmers on a national level is not clear. Some studies, albeit limited in sample size, state that 25% of farmer loans come from banks, which also includes government schemes like KPEN-RP or KUR. However, SCPP data show only 13.1%, based on a much larger sample size. Farmers name local collectors and traders as dominant sources of value chain pre-finance, while in the SCPP sample, the most important source of loans are family and friends at 56.84%. Other numbers, namely from Bank Rakyat Indonesia (BRI), indicate that only about 2% of the farmers have an outstanding loan, while about 5.61% of the farmers have experience with formal loans. It is estimated that 18% to 64% of the farmers use loans, but once again, this depends on the particular study. Almost half of the borrowers (48%) use the loans for agri-inputs, 11% for rehabilitation. Other data indicate that only 33% of loans are used for productive purposes, the rest is used for consumption. With that wide range of numbers it is difficult to get a clear picture on the financial demand and supply situation. Lack of access to finance is according to farmers one of the main bottlenecks that limits their full production potential, mainly because of collateral requirements and repayment schedules, both supply side characteristics.

If not properly analyzed and monitored, loans are used for non-productive purposes. 34.38% of the farmers in the SCPP sample have used loans to

pay school fees. 30.94% have used loans for daily needs. That must be avoided.

From the demand side it can be said that many farmers are reluctant to borrow, because they fear the obligations/burden coming with it. SCPP data shows that 39.77% of the farmers do not want a loan and 96.18% of the farmers think that loans are a big responsibility. Many farmers are not eligible for loans, since they lack sufficient hard collateral or repayment capacity due to low production. Other farmers with larger farm sizes do not need cocoa specific loan products anymore, since they generate sufficient cash flow. Government loan schemes like KPEN-RP and KUR are only partially known and the conditions such as collateral or repayment schedule do not fit the farmers' needs. Trader loans have many advantages that farmers want including fast and flexible handling, negotiable repayment schedule, and no hard collateral requirements. Instead, the lender uses cocoa beans as collateral and the farmer is obliged to sell to that particular trader/collector. Here, loans are a mean to secure a continued supply of beans.

A large number of farmers claim that they are incapable of saving, thus showing a lack of financial literacy, because even small amounts would show their discipline. Such incapacity would result in farmers not being able to receive a loan either, since a loan is nothing more than a future saving.

Advantages	Disadvantages
<ul style="list-style-type: none">• Fast & flexible• No hard collateral needed; future production of cocoa beans can be used• Individual arrangements with the lender possible• Lender usually knows the farmer well	<ul style="list-style-type: none">• Farmers obliged to sell beans to that particular lender• Side selling still possible

Table 4: Advantages and Disadvantages of Trader Loans

Collectors provide a loan in cash or in-kind (agri-inputs) and deduct the loan installments from cocoa payments to the farmer. Many farmers perceive that there is no interest to be paid on that kind of loan, but they forget that a trader could possibly give a lower price and convert that into an interest rate.

The situation regarding bank accounts and distance to banks is highly diverse and shows in some places that for 90% of the farmers' banks are located further than 10 km from their house. In general, bank location and account holding is independent from each other.

2.9. Previous and Current Experiences in Cocoa Finance

If you as a Financial Institution plan on entering the cocoa sector and want to earn money, as you should, you will see during your research that there have been similar past attempts. Most of them did not lead to success for several reasons. In this short chapter we will describe some projects and use them as case studies to show what kind of mistakes were made.

2.9.1. AMARTA I + II

The Agribusiness Market and Support Activity (AMARTA II) developed a commercial microfinance loan program to assist cocoa smallholders to purchase inputs. The interest rates are considered high due to the cost of establishing microfinance schemes, ranging between 24%-30% per annum (26%-27% effective interest rates). This program made loans to 450 smallholders in three cycles. The loan amount was IDR 6.5 million with smallholders receiving IDR 3.2 million between January and April. The other half of the loan was disbursed between July and December that year. AMARTA II's focus was to provide input-based loans to cocoa smallholders with the loan being paid out as one-third in-cash and two-thirds in-kind, namely fertilizer. During the three cycles, 40 participants defaulted in cycle 1, and 99 defaulted in cycle 2. The default issue could have been mitigated by properly screening smallholders' creditworthiness.

There are four factors that can determine the risk of default, those are:

- selection of farmer
- repayment behavior,
- product design
- repeat loans

We address those issues in the product design chapter.

2.9.2. Government Loan Schemes

From the banking perspective borrowers should have the capacity and willingness to repay. The selection of farmers through local government employees does not qualify as a proper

selection process compared to banking standards. The probability of "favors" or political reward is high. The selection process and the knowledge that the money comes from the government usually leads to poor repayment results, especially because repayment is not enforced. The lack of repayment

enforcement has negative effects on how farmers perceive repayment. Without follow-up on repayments, the government loan schemes have created an undisciplined repayment mentality, now affecting how farmers treat bank loans. Although the intention is good, in the opinion of the author, government loan schemes lead to a delay in market solutions, since such interventions are usually cheaper than commercial products with full risk and cost pricing.

2.9.3. Trader and Collector Loans

Smallholders develop long-term relationships with cocoa bean traders in their area. A level of trust exists between both the collectors and the smallholders. Collectors are able to provide loans between IDR 1 and 2 million, while traders are able to provide loans between IDR 1 and 5 million. This type of loan often does not require hard collateral and the collector has good knowledge of a smallholder's ability and capacity to repay the loan. While there is no interest or fees for these loans, there is the

implicit understanding that the smallholder will sell output to the collector/trader who provided the loan. The collector is repaid by deducting the loan costs from the sales transaction of cocoa beans. Additionally, a collector may recapture loan fees by offering the farmer a slightly lower rate than the actual market rate for cocoa beans. When smallholders do not have outstanding loans with a collector, they can sell to whichever collector or trader is offering the best price in their area.

3. BEAN AND MONEY FLOW – HOW LONG DOES IT TAKE?

The time spans for both flow of beans from the farmer to the processor and the resulting money transaction from the processor to the farmer is rather short

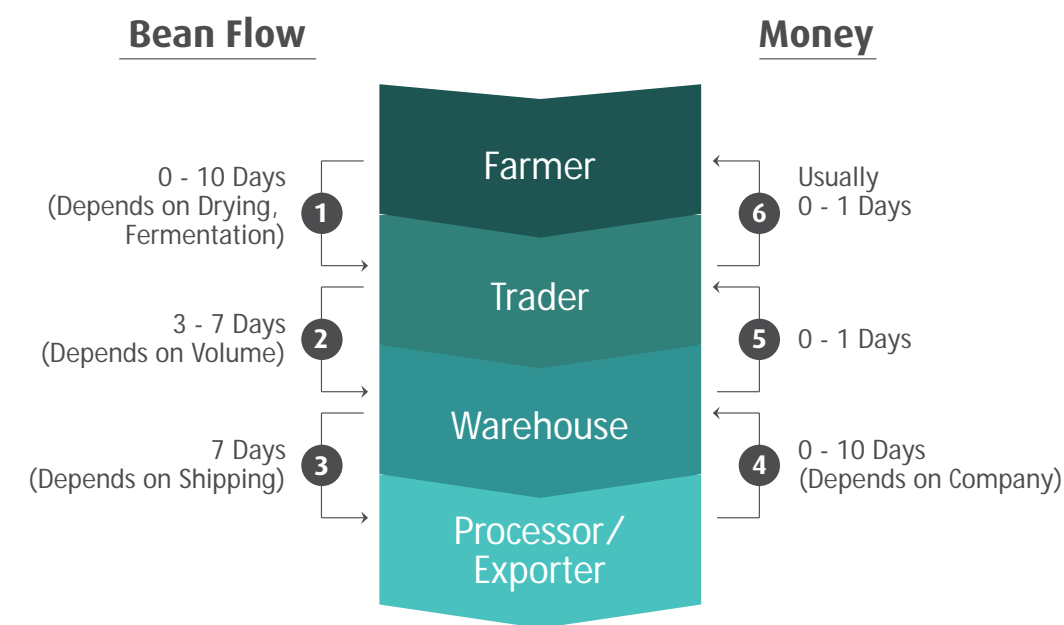


Figure 19: The Time Span of Bean and Money Flow

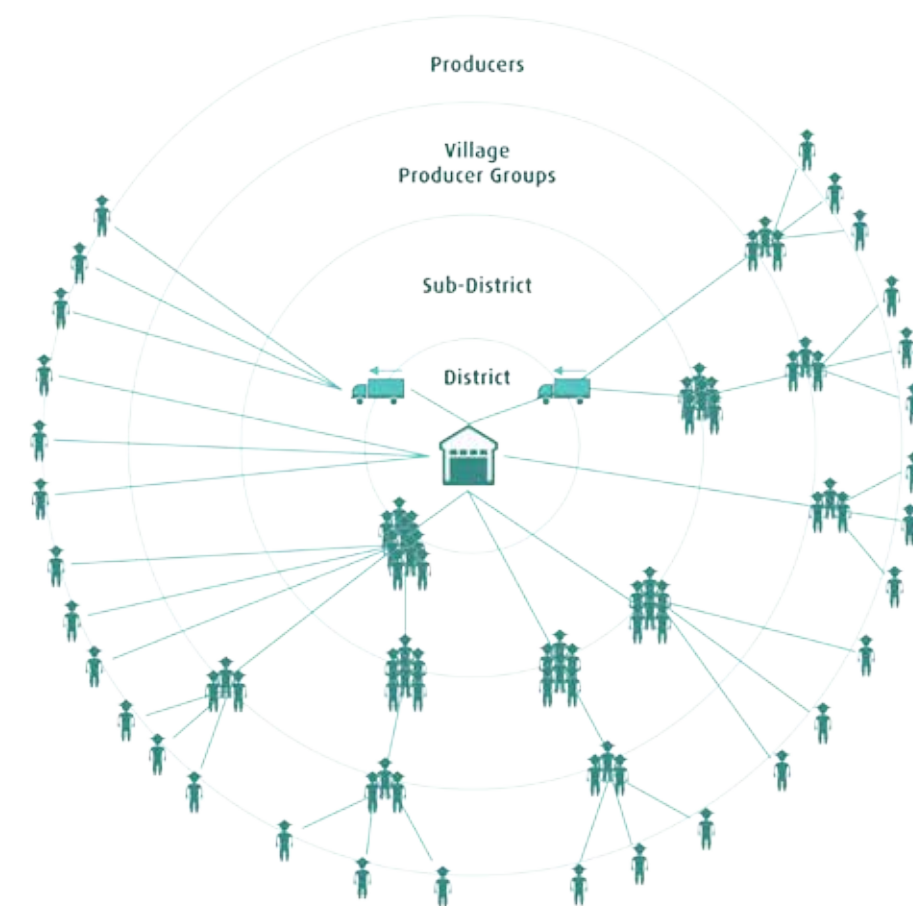


Figure 20: Bean Delivery to the Warehouse: 14 ways

4. VALUE CHAIN FINANCING – WHAT IS IT?

Now the concept of bean and money flow is expanded to include financing streams.

Value chain financing is simple to explain, because it is financing the value chain through stakeholders within the value chain or through stakeholders from outside. Outside stakeholders are typically financial institutions, either directly or indirectly. Directly refers to the financing of a specific stakeholder such as the farmer, the trader or the processor. Indirectly means that one stakeholder (e.g. a farmer organization or trader) receives financing and uses those funds to disburse/channel loans to other stakeholders, usually farmers.

Financial institutions already serve stakeholders in the value chain to a certain extent. However, financial institutions usually neglect the producers themselves, the cocoa farmers. There are other value chain stakeholders that are able to function as financiers such as input providers, processors,

and traders/exporters. Is farmer financing the core competence of those stakeholders? Could financial institutions provide financial services that are better/cheaper? Can financial institutions evaluate the risk? Is it better to provide loans directly to farmers or indirectly to stakeholders with sector knowledge? Could farmer organizations like cooperatives take a share in risk mitigation? All those questions will be answered in the following pages.

Agri-input suppliers could pre-finance farmers, but most do not have sufficient financial capacity to do so or they do not see this as their core competency. Moreover, risk management must be in place, e.g. complementary technical assistance. Conflict of interest might arise. All options of value chain pre-finance, whether granted by suppliers, collectors or large industry buyers, need to minimize the risk of farmers being unable to repay the loans.

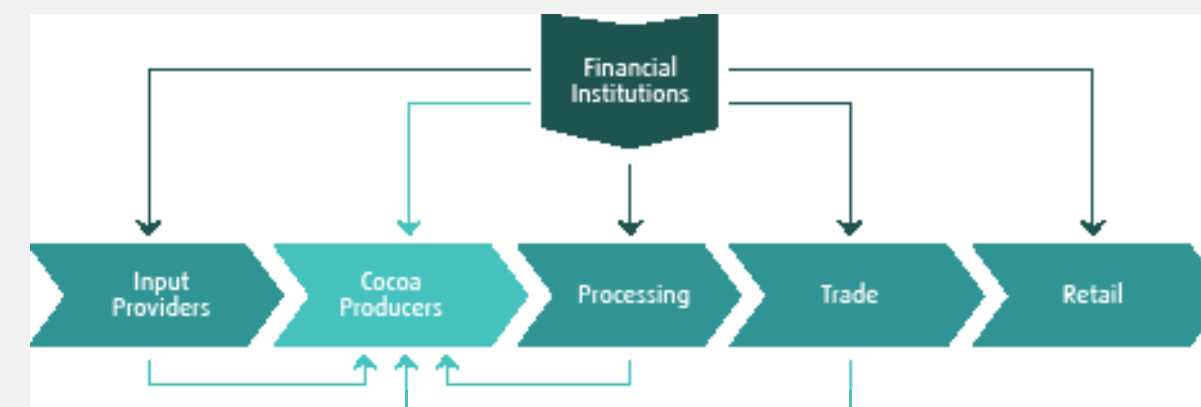


Figure 21: Value Chain including Financial Institutions

5. COCOA IS A FAMILY BUSINESS

The different activities during the cocoa production, post-harvest and selling process are usually performed by the cocoa farmer household, where males and females share responsibilities

Activities	% Roles on Cocoa Farm	
	Male	Female
Pruning on chupon	50	50
Hard pruning	80	20
Sanitizing pruning waste	50	50
Making compost	60	40
Fertilizing	60	40
Harvesting	20	80
Side-grafting	80	20
Top grafting on seedlings	50	50
Delivering beans to the house	70	30
Drying beans	30	70
Spraying	90	10
Selling cocoa beans	20	80
Money managing	10	90
Decision making on the cocoa farm	50	50
Average	51.4	48.6

Table 5: Role of Men and Women in Cocoa Farming Activities

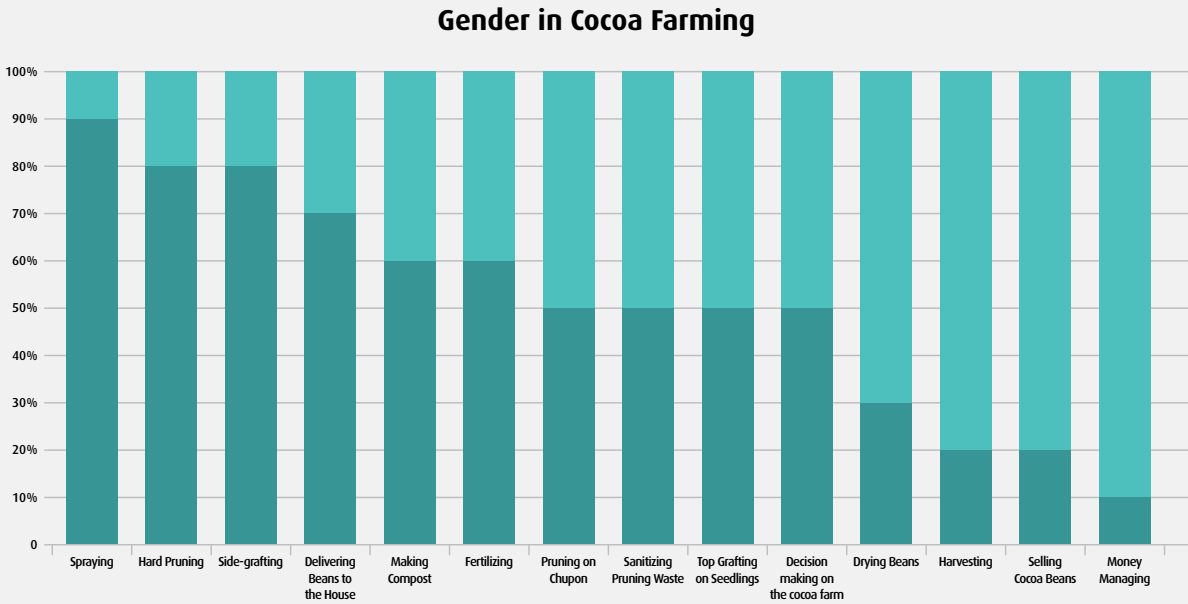


Figure 22: Role of Men and Women in Cocoa Farming Activities

6. FINANCE NEEDS IN THE COCOA SECTOR

6.1. Whom to Finance

In general, financial institutions have several direct and indirect options to provide financing to the cocoa sector. These are provision of loans:

- Directly to the cocoa farmer
- Indirectly to the cocoa farmer (e.g. through a farmer organization/cooperative)
- Directly to a farmer organization/cooperative (e.g. for working capital)

Whom to finance depends on the preferences of a financial institution, its considerations regarding the target group, risk profile, and available delivery channels. As already mentioned before, the target groups are farmers, either directly or indirectly. Directly means financial institutions disburse a loan straight to the farmer. This is pure and typical micro-finance. Indirectly means that a third party institution receives a loan and uses that money to provide loans to farmers. The third party could be a microfinance institution, a BPR (Bank Perkreditan Rakyat; rural bank), a small commercial bank, or a cooperative. From the cost of funds point of view, it is a business decision. However, it might not be logical,

because the indirect loans that reach farmers might have high refinancing costs. This makes the indirect loan more expensive and only farmers with riskier projects would apply for loans. From the risk perspective, indirect loans are advantageous if the middleman/third party has a better knowledge of the sector and can reduce risks to an acceptable level. The combination of higher cost of funds and lower risk premiums could result in an overall lower interest rate for farmers. If such a middleman is financed, its business model should be looked at.

6.1.1. Farmer Level

Farmers can be categorized according to their farm management and their size. Professional, progressing and unprofessional farmers can be distinguished and further classified into large, medium and small size. How to define the criteria for each category is the decision of every single financial institution, but huge differences between those categories can be observed. This gives financial institutions the flexibility to choose the best farmers according to their criteria and reduce risk and workload significantly. The following table provides an idea about the current distribution of farmers in each category:

	Unprofessional	Progressing	Professional	Total
Small	22.96%	13.85%	4.97%	41.79%
Medium	26.94%	14.40%	3.25%	44.59%
Large	6.38%	3.17%	4.06%	13.62%
Total	56.28%	31.43%	12.29%	100.00%

Figure 23: Categorization of Farmers by Professionalism and Farm size

The classification criteria are:

Professionalization	Production (kg/ha/year)	Land Size	Ha
Professional	> 1,000	Large	2 or more
Progressing	500 to 1,000	Medium	1 to < 2
Unprofessional	< 500	Small	< 1

The classification could result in the following assessment:

Size	Category	Situation	Training Need	Access to Finance	Loans
Small	Unprofessional	Yields could be improved, limited investment capacity	GAP, Financial Literacy	Starting with smaller savings for small agro-input purchases (and apply GAP)	Not creditworthy, also not with collateral, insufficient cash flow, high risk, knowledge of cocoa to be increased
	Progressing	Shows acceptable yields, production has potential to increase (depends either on GAP or on agro-inputs), land size too small	GAP, Financial Literacy	Smaller loans for agro-inputs, rehabilitation, savings for agro-inputs	Considered a potential loan client for very small loans, yield to be increased
	Professional	Has sufficient experience in cocoa, land size too small, with more land, economic situation could be improved	Financial Literacy, Business Training	Loan for smaller pieces of land, ca. 0.5ha (also used as collateral), savings	Considered a potential loan client, but with limitations because current land size and cash flow
Medium	Unprofessional	Needs more knowledge, little cash flows from cocoa, land size could support an acceptable income	GAP, Financial Literacy	Starting with smaller savings for small agro-input purchases (and apply GAP)	Not creditworthy, also not with collateral, insufficient cash flow, knowledge of cocoa to be increased
	Progressing	Shows acceptable yields, production has potential to increase (depends either on GAP or on agro-inputs), land size is an issue	GAP, Financial Literacy	Smaller to medium loans for agro-inputs, rehabilitation, savings	Considered a potential loan client for small to medium loans, yield to be increased
	Professional	Has sufficient experience in cocoa, knowledge to be applied to new land	Financial Literacy, Business Training	Loan for medium sizes of land, 0.5 to 1ha (also used as collateral), savings	Considered a good potential loan client.

Size	Category	Situation	Training Need	Access to Finance	Loans
Large	Unprofessional	Better knowledge to be gained, little cash flows from cocoa, although land size would be sufficient to have a decent income	GAP, Financial Literacy	Starting with savings for agro-input purchases (and apply GAP)	Not creditworthy, also not with collateral, insufficient cash flow, high risk, knowledge of cocoa to be increased
	Progressing	Shows acceptable yields, production has potential to increase (depends either on GAP or on agro-inputs), land size sufficient for the moment	GAP, Financial Literacy	Smaller loans for agro-inputs, rehabilitation, savings	Considered a potential loan client for medium loans, yield to be increased
	Professional	Has sufficient experience in cocoa, knowledge to be applied to new land	Business Training, Farm/Staff Management, Financial Literacy	Loan for land, 1 ha or more (also used as collateral), savings	Sufficient cash flows / income, considered as very good potential loan client

Table 6: Assessment-based Tailor-made Capacity Building

Interesting clients for financial institutions are professional farmers, especially those with medium-sized and large farms, because they usually have sufficient cash flows to absorb larger loan amounts. Professional farmers of all sizes know how the cocoa business works. Progressing farmers are also an interesting target group, because they produce above average and they could be lifted to the professional category if they were given basic financial support, e.g. for agri-inputs.

6.1.2. Farmer Organization Level

This chapter is to understand farmer organizations, their business model and sources of income better, in order to do appropriate loan analyses.

The cocoa sector is currently not very organized and lacks strong farmer organizations as a voice of the farmers. Creditworthiness of new farmer organizations would heavily depend on collateral and the character of the management. A lending model should target farmers directly. Farmers should not assume that merely forming an organization means they are instantly eligible for loans. Minimum requirements should include excellent recording of any transaction (complete, up to date and accurate), stable organization management, and proven capacity to handle funds (even if only through managing member fees). One option for providing collateral is through the farmer organization management. If they are willing to provide their own land titles as collateral, it is already a promising sign about the seriousness of their plans. Another good asset would be if the cooperative becomes the certificate holder for certification labels like UTZ, Rainforest Alliance or Fairtrade, which should result in a premium share. This has to be checked, but looks like

could generate so much income that proper saving/investment products must be in place and the cooperative could act as a refinancing source for the financial institution.

Some of the farmer organizations possess demonstration farms on which farmers get trained in good agricultural practices. Since the trees on those demonstration farms yield as well, the income could be used to cover the costs of the demonstration farm.

The management of the farmer organization must be professional and should consist of full-time positions with proper risk management in place. In case the village head (bupati) acts as manager, the business model has to be reconsidered for one simple reason: time. It is not expected that a bupati has sufficient time

to manage a farmer organization, which would be needed to fulfill all the tasks for the farmers. Still, if part-time management is in place and the business model is properly defined, a farmer organization could have sufficient sources of income and could be a good loan client for a financial institution.

The most promising activities are certification holding, trading, retail business, and lending. The latter only if the farmer organizations can reduce risk significantly and ensure an excellent repayment rate. For all those activities sufficient funds need to be allocated. In most of the cases the self-funding capacity of the farmer organization is not big enough, so external/commercial refinancing is needed. More details are explained in the loan analysis section.

6.2. What to Finance

6.2.1. Current Situation

Currently, farmers use loans for the purposes shown in the table below based on an USAID study from 2013. There is one position, daily needs, which needs to be addressed by banks, since those loans are not used productively. Together with education loans it can be seen that farmers do have a great need to save and this would be an opportunity for financial institutions to offer appropriate saving products as an entry point to know farmers better.

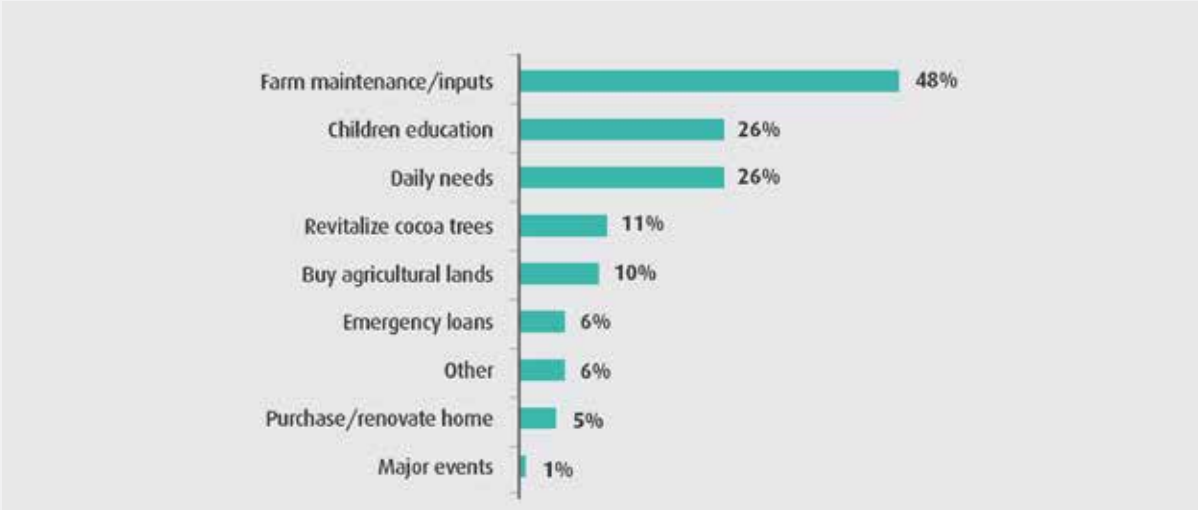


Figure 24: Reasons Cocoa Smallholders Borrow Money

Source: Market Insights into the Financial Behaviors and Design of Mobile Financial Services Products for Cocoa Farmers in Indonesia, e-Mitra, USAID, May 2013

Data depends on the sample size and different studies deliver different results. Therefore, it would be better to work with ranges when presenting numbers. SCPP data for the first three items look different, with 40.73% used on farm maintenance, 34.38% on school fees and 30.94% on daily needs.

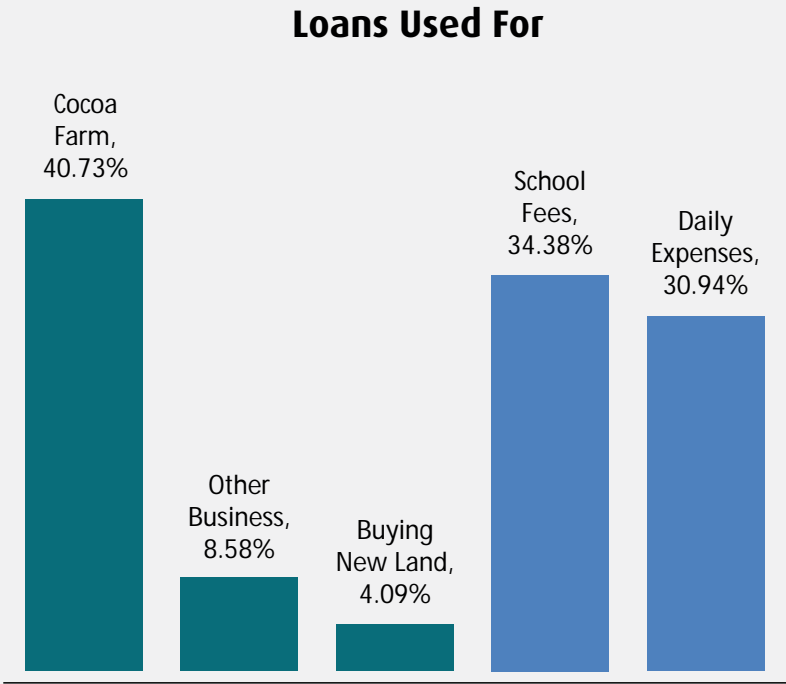


Figure 25: Loan Use

From a banking point of view, not all loans (including loans from family and friends) are used wisely, although there was an urgent need to be addressed during the time of borrowing. The green bars above show the productive use of loans (buying land depends on the situation) and the blue bars show non-productive use. Productive use should be preferred, since a loan usually costs interest, which have to be paid. School fees and daily expenses should not be financed by a loan.

6.2.2. Farmer Level

Indonesian cocoa farmers need access to financial resources to purchase the essential components of professional farming (agri-inputs, planting material) and make other long-term investments related to their cocoa farm. Here it should be stated again that cocoa is a labor-intensive, but not a capital-intensive crop. This access to financial resources could be realized through loans or through savings.

One of the financing possibilities was explained previously in the table where farmers were classified according to their professionalism and farm size. The table below shows typical inputs and investments, expected results of using them, and the expected time frame to finance them:

What	Expected result	Expected time frame	Prices / Loan amount
Fertilizer	Increase of production through better supply of nutrients	Short to mid term	Prices depend on brand and quantity. A rule of thumb is that farmers should spend USD 0.90 per tree per year
Herbicides	Controlling grass and weeds; more nutrients for the cacao tree; area around the tree can dry better/faster, less pests can spread	Short term	
Fungicides and Insecticides	Protection of crop, higher production	Short term	
Compost	Increase production through better soil fertility	Mid to long term	Between IDR 5,000 and 10,000 per seedling. It is a rather minor investment
Seedlings	Increase production through better planting material (also higher production because of the younger/productive age of the tree)	Mid to long term	
Farm Rehabilitation (side-grafting)	Increase production through better planting material (also higher production because of the young productive branches)	Mid to long term	
Rehabilitation Earning Reduction Coverage	During the replanting process young trees are not yielding yet, to maintain/increase production over time	Mid term	Depending on scale, but up to IDR 30 million within 3-4 years
Fences	Protect farm from cattle and other animals	Mid term	Depending on the farm; ca. IDR 5 million per ha
Externally hired Labor	Farm maintenance, increase production, protection of crop	Short, mid and long term	Between IDR 50,000 and 100,000 per day per worker. Should only be considered for large, short-term labor needs.
Fermentation Boxes	Increase post-harvest bean quality and get higher bean prices (currently about IDR 2,000 per kg)	Short term	About IDR 750,000
Land Certificate/ Land registration process		Mid term	IDR 1 – 8 million, depending on the process
Land	To expand the farm, produce more, have higher income and create employment opportunities for other people	Mid to long term	Up to IDR 60 million per ha, depending on location and if empty or with cacao trees

Table 7: What to Finance?

Many items that need to be financed have a short or mid-term time span. The longest financing would be for the rehabilitation of the farm and for purchasing land. Production will be lower during farm rehabilitation and when farmers need to purchase agri-inputs, but the rejuvenation

is necessary to secure future yields. Therefore, a farmer who rehabilitates his farm is thinking about the future and his future income.

The average annual costs related to 1 ha of cocoa farming are listed in the box below. On average, a cocoa farmer needs USD 640 per year for cocoa production, assuming optimal techniques and inputs are used. Calculated based on 800 trees per hectare, this would result in USD 0.80 per tree and is in line with the rule of thumb above, which says USD 0.90 USD per tree. Those costs are concentrated in two periods of the year, prior to the two peak cropping seasons (e.g. in Sulawesi), respective at the beginning and the end of the rainy season. This is mainly true for the highest part of the input costs, the ones for fertilizer. However, the majority of cocoa farmers tend to use only partially or non-appropriate fertilizer. Using less than the appropriate quantity per tree, e.g. only 50%, does not have the intended effects. Instead of using 50% quantity for 100% of the trees, it would be better to use 100% fertilizer quantity for 50% of the trees. Better yet would obviously be to use 100% of the needed quantity for 100% of the trees, so long as the fertilizer is not wasted on old trees.

Input	Annual Ammount/Ha	Annual Costs
Fertilizer	500 kg	\$ 400
Pesticides	5 liters	\$ 100
Planting Materials	Highly Irregular	\$ 50
Family Labor	55 Person Days	-
Hired Labor	23 Person Days	\$ 90
Total		\$ 640

Note: Smallholders typically do not keep records of agro-chemical purchases, labor allocation, etc., as this is often based on informal arrangements. With this context in mind, information on production costs is difficult to estimate.

Table 8: Average Annual Cost Estimations Related to Cocoa Farming on 1 Ha

Source: CSP Roadmap, p. 88

Please note that in the small holder context, farmers do not keep records on agro-chemical purchases, labor allocation, etc. Rather, farmers rely on informal arrangements based on trust and duty, so the information on production costs is difficult to estimate.

A rule of thumb is that farmers should spend USD 0.90 per tree per year to secure optimal production.

The annual average quantity of NPK fertilizer applied is stated below. The quantity also depends on the age of the tree, because a small tree needs less fertilizer than a bigger tree.

NPK 15:15:15	Annually	
		Year 1: 220 g/tree
		Year 2: 320 g/tree
		Year 3: 600 g/tree
		Year 4+: 700 g/tree

6.2.3. Farmer Organization Level

Financial institutions could also fund microfinance institutions, farmer organizations or traders, either to provide working capital or sufficient funds for further lending/channeling to farmers.

6.2.3.1. Working Capital

Working capital can be used for some major business activities including cocoa bean trading and buying inventory for retail (e.g. fertilizer and other agri-inputs), especially for farmer organizations and traders. In the case of fertilizer, inventory and the storage building could be used as collateral.

Cocoa farmers are used to cash deals, meaning that they sell their beans to an off-taker and receive the price in cash immediately. There are very few exceptions where the money is paid after 2-3 days at the latest. If a farmer organization is active in cocoa trading, they need a considerable amount of working capital so that they are able to pay the farmers immediately and cover possible transport costs to off-takers. There are examples where farmers pre-finance the trader's business by receiving the money only after the trader sold the cocoa to his off-taker.

The business model for trading will be described later. For now it is sufficient to know that margins are calculated to be about IDR 500 per kg cocoa or 1.0% to 1.5%. Some traders reach margins of IDR 800 – 1,500, but this mostly happens in regions without tough competition. Then the only question for earning the interest to be paid back to a financial institution is the turnover speed of sale. The repayment of the loan depends on the buyer's payment capacity. A credit line should be sufficient, but appropriate risk measures have to be implemented and the management should be creditworthy as well. The time of payment for the beans to the trader/farmer organization can range from immediately to up to 10 days, depending on the buyer of the beans. Possible loan sizes for cocoa bean trading should cover trade sizes of 3 to 15 MT, currently ranging between IDR 100,000,000 and 500,000,000. Those sizes show transport options with trucks and containers.

If a farmer organization is active in retail business, especially in the distribution of agri-inputs, it might need working capital for buying sufficient inventory and/or having access to bulk discounts.

6.2.3.2. Investment Capital

Investments on the farmer organization level are not so obvious. Realistically, it could involve warehouse storage or post-harvest processing equipment, e.g. fermentation boxes or solar driers. The former would increase capacity, but is currently not a priority for farmer organizations. The latter would allow the farmer organization to add value to the beans bought thus earning additional income. Also, cars/trucks for better transportation would be possible, e.g. to collect beans from the farms or farmers' houses. This should not be a main priority for a farmer organization as long as other transport is available.

6.2.3.3. Funding for Loans

If a financial institution is not able to evaluate the risk when lending directly to cocoa farmers, it is possible to include a middleman, who is closer to the farmers and can reduce risks and/or costs significantly. This is often the case for microfinance institutions such as a BPR/BPRS, cooperative or other farmer organizations. Those institutions know the cocoa farmers and their business better, are closer to the clients and reduce the workload for a financial institution. Still, those institutions have to be creditworthy and both willing and capable to repay the granted loan.

Loan sizes depend heavily on the institution size and the absorption capacity of the farmers. A starting point would be about IDR 250,000,000. That would mean that 50 farmers get a loan of IDR 5,000,000 each.

6.2.3.4. All Other Activities

The business model of a farmer organization should allow them to cover their costs and make at least a small profit. There should not be additional need for financing.

7. WHAT EFFECT DOES FINANCING HAVE ON PRODUCTIVITY AND WHEN ARE RESULTS SEEN?

7.1. Fertilizer

When fertilizer is financed and applied, it has to be clear that the results are not immediately measureable. It takes one or two mid/peak harvest cycles before seeing results, so up to one year until the production goes up. Applying fertilizer should be a regular activity, because nutrients are depleted regularly pace too. If the wrong fertilizer is applied, there won't be a productivity increase at all. This is one of the reasons why the current cash flow should be the base for any loan analysis.

The typical fertilizer is NPK consisting of N (Nitrogen), P (Phosphorus) and K (Potassium), Urea (a fertilizer consisting of Nitrogen), TSP (Triple Super Phosphate) and KCl (potassium chloride).

7.2. Pesticides/Herbicides

Pesticides, herbicides and fungicides have a more immediate effect and can quickly limit the spread of pests, weeds and fungus.

The below stated herbicides are used dominantly by the farmers. Many of the herbicides contain Paraquat, Glyphosate or 2.4-D. It should be noted that the wrong application of herbicides can have serious impact on the health of farmers.

The most used fungicides are: Nordox, Dithane, Amistartop and Rhidomil.

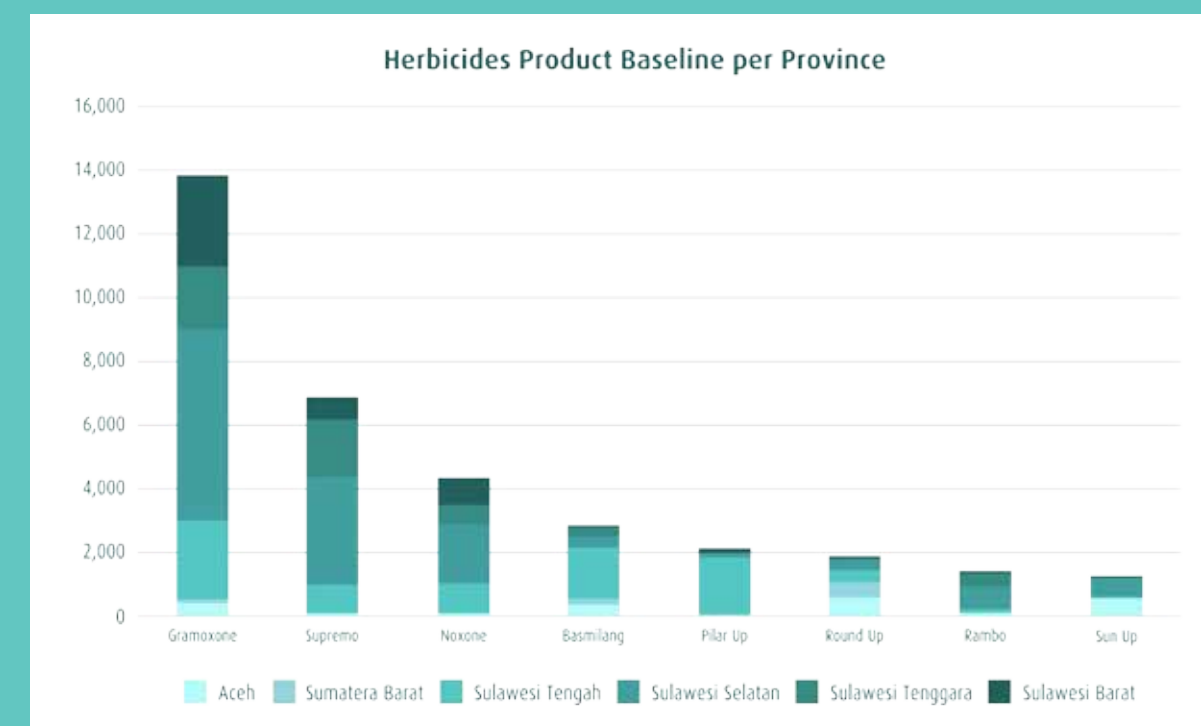


Figure 26: Herbicide Product Baseline

Insecticides used are: Alike, Bento, Capture, Matador, Regent, Drusban and Penalti. There are still huge regional differences on the use of herbicides, insecticides and fungicides.

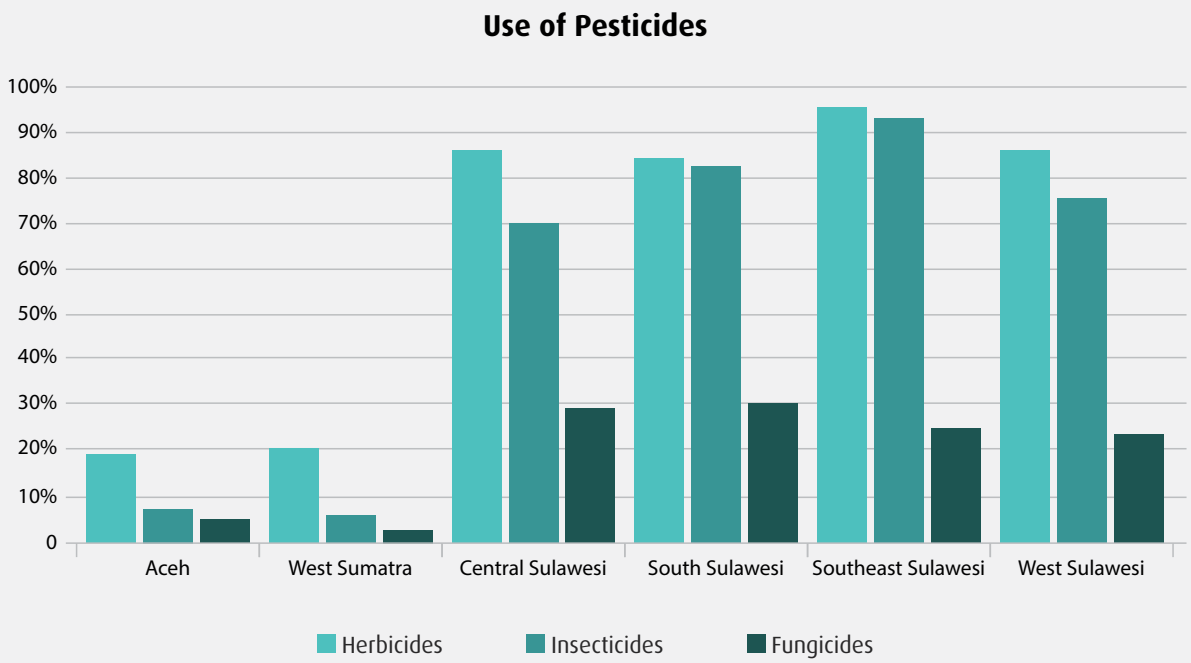


Figure 27: Use of Pesticides per Province

7.3. Replanting and Rehabilitation

Old trees attract more pests and diseases and if not regenerated or replanted, the farmers’ income from cocoa drops significantly.

When the farm gets rehabilitated and new trees are planted, it takes between 3 to 5 years till they can yield cocoa pods. For side grafting it could take up to 2 years till the new graft is yielding. In the latter case the rest of the tree continues to yield while the new graft grows.

Years	Diameter/ circumference (cm)	Height (m)
0-3	0-5	2
4-10	6-10	4
11-20	11 - 15	6
21-30	15 - 20	8
30+	21 +	

Table 9: Age of Cacao Trees

For a non-farmer it might be difficult to see the age of a tree. Besides asking the farmer, a rough indication would be:

7.4. Land

Productivity effects for new land obviously depends on the current status, soil quality, rehabilitation needs or number of new cacao trees. This was discussed above.



8. THE COCOA HARVEST CYCLE OVER THE YEAR

Although cocoa grows all year long and can be harvested throughout the year, there are mid and peak seasons.

Those differ from region to region and banks must be aware that the differences could be significant. To give an example: In Sulawesi the mid-season is in June, while in Aceh the season is at its absolute low. Farmer cash flows are obviously linked to the quantity of cocoa harvested.

8.1. Sumatra (Aceh) Crop Cycles

There is only one peak harvest season in Aceh, starting in October and lasting up to 5 months till February of the following year. May to June is the low season, but still has limited production. Credits should be disbursed to farmers and farmer organizations during these 3 months to enable them to buy the necessary farm inputs as recommended in the Program's training. As soon as the peak harvest starts, farmers have higher cash flow to repay their debt.

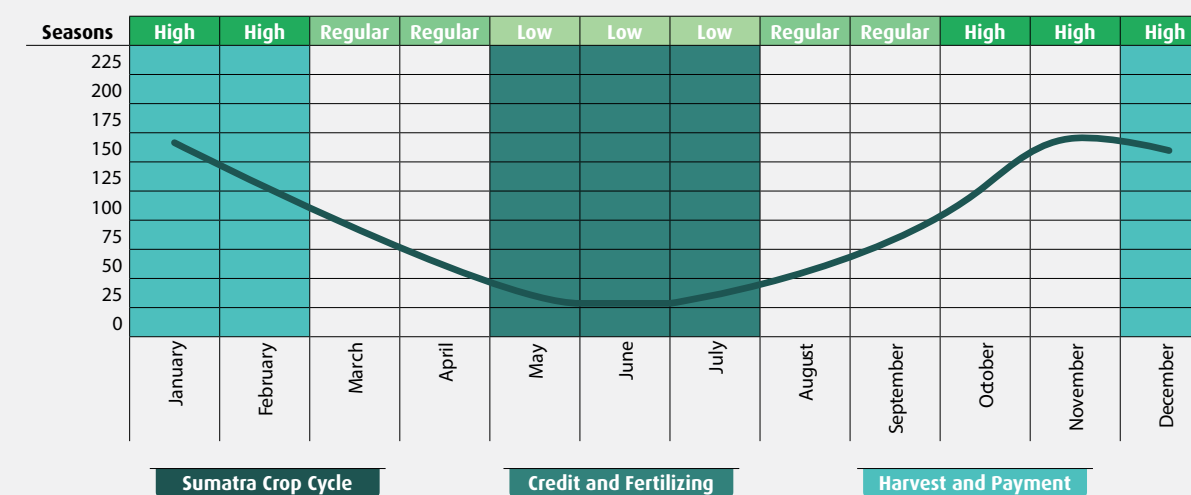


Figure 28: Aceh Crop Cycle

8.2. Sulawesi Crop Cycles

The Sulawesi crop cycle appears to be quite different with two high seasons, peaking in May and November. Therefore, fertilizer application should begin to take place four months before each high season. As soon as the peak harvest starts, farmers are in a position to repay their debt.

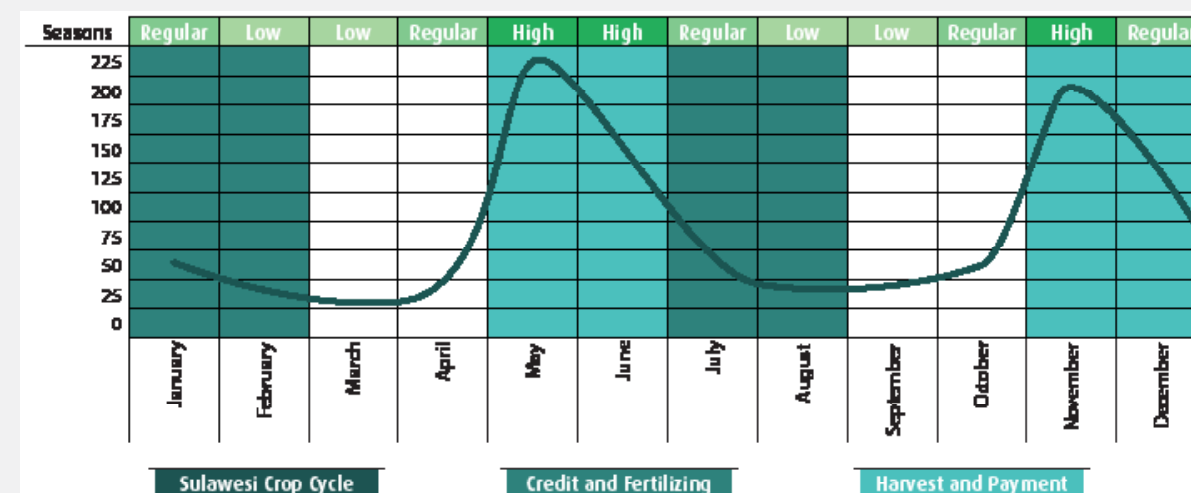


Figure 29: Sulawesi Crop Cycle

9. FARMER CASH FLOW OVER THE YEAR

9. The Farmer Cash Flow over the Year

9.1. Economic Situation of Farmers

Most cocoa farmers are smallholders. They are not rich, but have a regular income from farming and in most cases additional, irregular income. They are not the poorest of the poor and own at least some land, although they often lack the formal land certificate.

The following chart not only shows the percentage of cocoa farmers in the SCPP program who live below the national poverty line (IDR 7,893/day), but also those who live below the two international poverty lines of USD 1.25/day and USD 2.50/day. For instance, it shows for Aceh that on average 5.2% of the cocoa farmers live below the national poverty line, 7.7% below USD 1.25/day, and 53.2% live off less than USD 2.5/day. Those are mostly farmers with a land size that is too small to earn an adequate income. Those farmers shouldn't be the target group for any commercial financing, but it is important to see the farmer averages in an economic context. The values are so-called headcounts, meaning that the number of family members is already taken into account and is based on the income of each cocoa farmer household member's income.

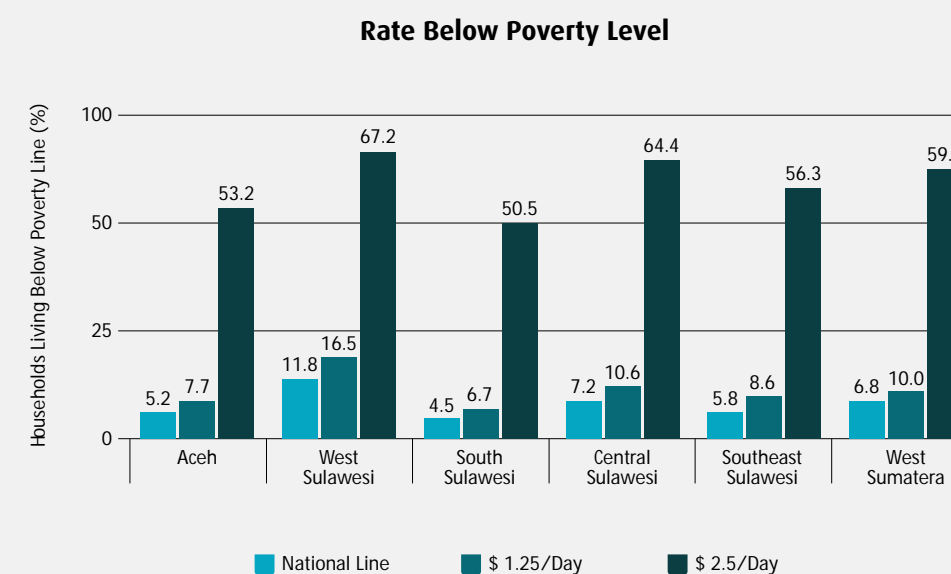


Figure 30: Poverty Level

Again, the individual situation of the farmer depends on a variety of factors including, but not limited to, technical skills, debts and other obligations, and their classification as a professional, progressing or unprofessional farmer.

The following chart illustrates the difference between the top 1% of cocoa farmers in one province (Aceh) and their peers. The top 10% of farmers have a significantly higher cash flow, indicating a significantly higher repayment capacity; therefore a significantly lower default risk.

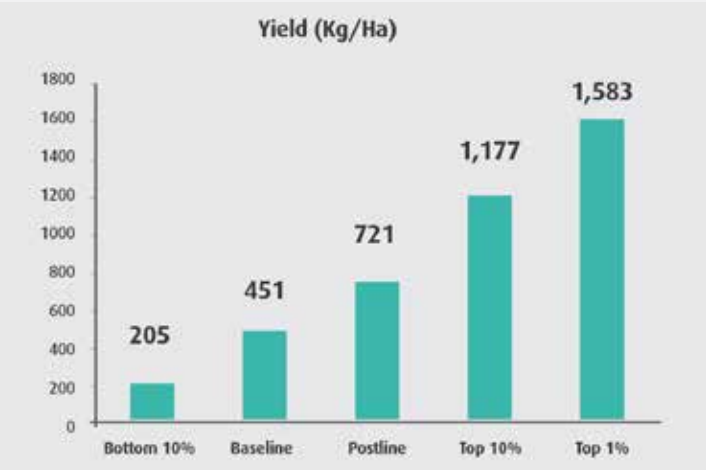


Figure 31: Production of Top 1% vs Bottom 10%

9.2. A Typical Farmer

9.2.1. Yearly Revenues and Profits of a Cocoa Farmer

Over the course of one year, a farmer with one hectare of cocoa and approximately 900 trees spends an average of IDR 2,000,000 on inputs and IDR 1,200,000 on external labor (24 days, IDR 50,000 each). This adds up to IDR 3,200,000 in costs and the farm on average can produce 500 kg of cocoa. The 500 kg of cocoa sold at IDR 30,000 per kg (average farm gate price in 2014) will provide IDR 15,000,000 in revenue for an annual profit of IDR 11,800,000. This farmer is considered to be on the edge between the unprofessional and progressing farmer categories and is not the target group for financing as seen in the chapter about whom to finance.

The same farmer who invests 10 more days of hired labor annually and increases the investment in agri-inputs to IDR 6,000,000 can produce 1,000 kg of cocoa and earn an annual profit of IDR 22,300,000 from his/her cocoa farm. Through gradual replanting with improved planting material, proper crop husbandry, and optimized agri-inputs, cocoa farmers can achieve yields of over 2,000 kg per hectare per year.

Solid profit margins are usually achieved when yields are higher than 700 kg/ha, but remain sensitive to price fluctuations.

Revenue (1 hectare)		
Production (kg)	500	1000
Price (IDR)	30,000	
Total revenue	15,000,000	30,000,000
Costs		
Inputs	2,000,000	6,000,000
Labor	1,200,000	1,700,000
Total costs	3,200,000	7,700,000
Annual profit from cocoa farming	11,800,000	22,300,000

Another rule of thumb is that production costs per kg of cocoa are estimated to be between IDR 6,000 and 7,500.

9.2.2. Harvest Logbook

Both charts below show the weekly harvests of two cocoa farmers over a period of one year. On the right axis, the weekly quantities are shown, on the left axis the cumulated quantities. It shows the peak harvesting periods, thus the most appropriate time for

loan repayments. For that particular region, July with only about 20 kg harvested is not a great month for loan repayments, while in February/March and October, harvest increases to about 80 kg and both farmers have more money available to repay loans.

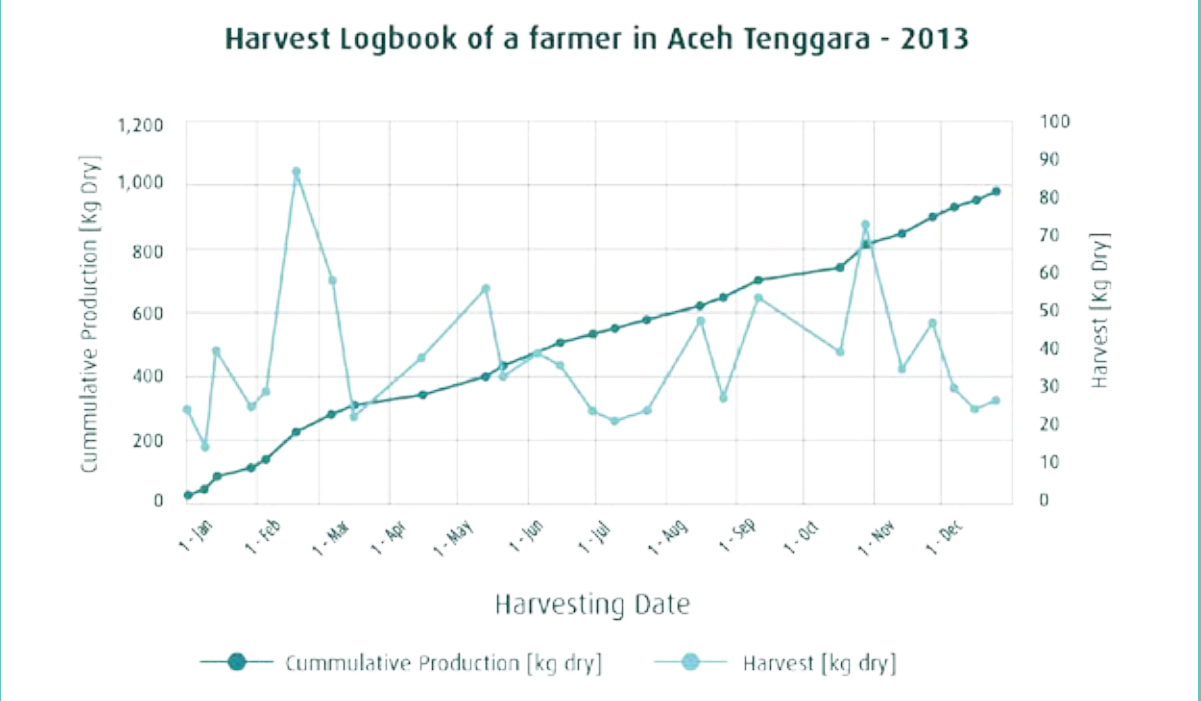


Figure 32: Harvest Logbook (I)

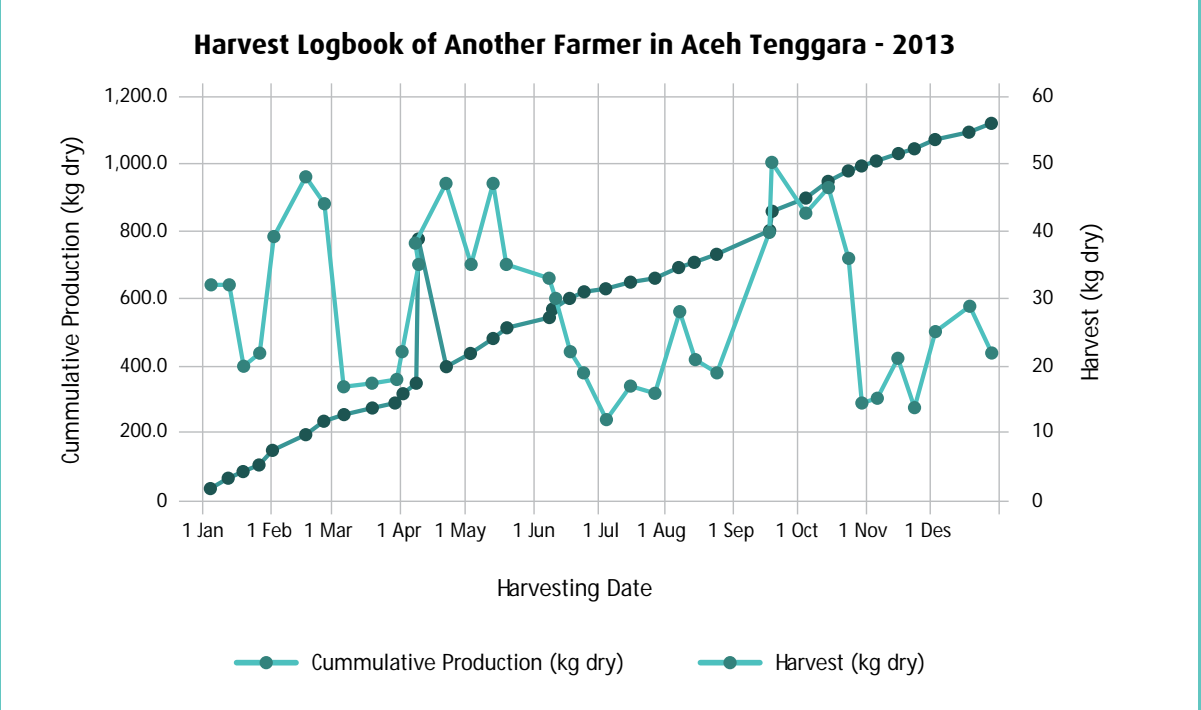


Figure 33: Harvest Logbook (II)

9.2.3. Other Sources of Income

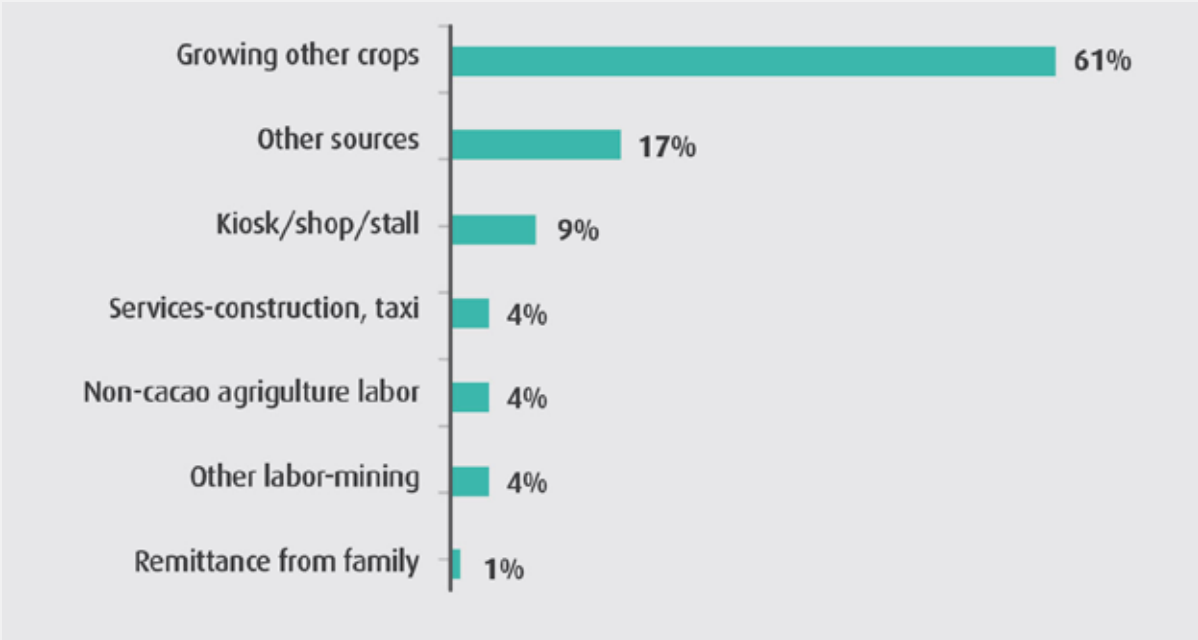


Figure 34: Other Sources of Income
Source: Market Insights into the Financial Behaviors and Design of Mobile Financial Services Products for Cocoa Farmers in Indonesia, e-Mitra, USAID, May 2013

To have a more equal distributed cash flow pattern over the year, often farmers diversify in terms of crop and time to not be completely dependent on cocoa alone.

9.2.4. Assets and Liabilities

Typical assets of cocoa farmer households are:

- Cocoa farm land (in most cases without a land certificate)
- Houses (also often without a certificate)
- Motorbikes (BPKP)
- Other businesses (chicken, cattle, goats, other farming, retail, etc.)
- Savings
- Lending to other farmers

Typical liabilities are:

- Loans with financial institutions and/or traders
- Short-term borrowing from friends

More valuable machinery and other equipment is not as necessary in cocoa farming as other businesses.

9.2.5. Expenses and Investments

The most obvious expenses and investments for cocoa farmers are:

- Daily needs
- School fees / education
- Household assets (fridge, TV, ...)
- Weddings of own children (costs depending on the region and number of guests)
- Emergencies
- Health care
- Farm investments and maintenance for cocoa farm
- Other business investments
- New house / house renovation
- Buying new land for farming
- Motorbike / car
- Haji / Umrah
- Retirement

The table below compares the cocoa production expenses of 2 farmers

Costs	Business Expenses	
	Farmer 1	Farmer 2
Pruning	320,000	400,000
Fertilizing (labor)	300,000	-
Sanitation	50,000	90,000
Pest and disease control	650,000	850,000
Harvesting	400,000	-
Pod opening	-	-
Sortation	-	-
Drying	-	-
Weeding	400,000	450,000
Pesticide	400,000	450,000
Fertilizer	1,100,000	3,000,000
Total	3,620,000	5,240,000

Table 10: Business Expense Examples

10. SOURCE OF FUNDS FOR FINANCIAL INSTITUTIONS

For smaller financial institutions and especially cooperatives, the refinancing question is important for both working and investment capital.

10.1. Sources of Funds

For smaller financial institutions and especially cooperatives, the refinancing question is important for both working and investment capital. Working capital could be used for matters such trade business and providing loans to their members. The latter should not be the first priority. Some of the sources of funds mentioned and described below are obvious, others might be new.

Possible sources of funding for the agricultural sector are:

- Savings/ time deposits from clients
- Commercial loans (from other financial institutions)
- Loans from social lenders
- Government loan schemes
- Crowdfunding
- Grants
- Member fees

10.2. Savings/Time Deposits from Clients/Members

This source of funds depends on the reputation, interest paid and accessibility, meaning what delivery channels are available and how far it might be from the clients place. Commercial and rural banks are obliged to be part of the Indonesian Deposit Insurance Scheme (LPS), through which deposits are guaranteed in case of loss. Farmer organizations usually do not have that protection, meaning that farmers bear a risk in case money gets stolen/misused and the farmer organization wouldn't be able to repay. Therefore, savings as a source of refinancing might only be available for banks.

10.3. Commercial Loans

Basically every organization considered as creditworthy should have access to commercial loans. Creditworthiness can be based on repayment capacity, organizational setup, business prospects, purpose of loan, collateral, registration documents, etc.

10.4. Loans from Social Lenders

Social lenders have a particular focus on social performance and provide loans for a slightly lower interest rate. Due to transaction costs, the minimum loan amounts given are still quite high (sometimes USD 300,000 or more). Some social lenders have specific requirements regarding the use of the loan or the borrower (e.g. only cooperatives or specific target groups). Some social lenders are:

Root Capital	Rabo Rural Fund
Oikocredit	Shared Interest
Triodos Sustainable Trade Fund	Alterfin
ResponsAbility	Rabobank Foundation
Incofin	

Table 11: List of Social Lenders

10.5. Government Loan Schemes

Indonesia is famous for governmental lending schemes through either the provision of funds and/or interest subsidies. Not all financial institutions are always included in accessing those funds. Those schemes come with specific conditions, e.g. purpose of use, interest rates, repayment conditions, loan amounts, maturity, or limitations regarding the crops.

Some schemes provide funds and others provide interest subsidies. Unfortunately, especially when funds are provided, farmers do not always honor the repayment scheme

because they know the money is from the government. The repayment behavior of the beneficiaries is a major obstacle to prove that farmers can be good loan clients.

At this stage the most important lending scheme for cocoa farmers is KUR (Kredit Usaha Rakyat), but that might change in the future.

10.6. Crowdfunding

In recent years the possibility for crowdfunding appeared, especially for funding of smaller loan amounts. It is explained how it works by using the example of kiva.org.

1. Kiva partners with a financial institution (or another field partner)
2. Financial institution selects loan clients, does loan analysis, writes story about client and uploads that story to the kiva internet site
3. Lenders (crowd) browse profiles of those clients and lend to them
4. Kiva disburses lenders' funds to the field partner for 0% interest rate
5. Field partner disburses loan to the client for its own/normal interest rate
6. Borrowers/clients of the financial institutions repay their loans
7. The Kiva field partner repays the money to Kiva
8. Kiva provides repayments to lenders (crowd)

Although the lender is not known personally, there are certain obligations. The most important one is to repay the loan to Kiva (and in the end to the lender). If done so, there is basically a permanent source of funds secured due to the good track record and repayment statistics, thus making the institution more trustworthy and eligible for larger loan amounts. The total amount permitted by Kiva might be limited, depending on an analysis of the institution, which comes down to legal status, audited balance sheets, time with Kiva, etc. Although the funds are provided for free by Kiva, there are costs involved (exchange rate and administrative costs), since the amount is given in USD and some administration work has to be performed. Small financial institutions like cooperatives might consider funding such as this if they cannot access commercial funding. At least one

person has to speak good English to interact with the crowdfunding platform and post loans to their website.

Other crowdfunding platforms specialized in loans are Zidisha.org (person-to-person lending) and babyloan.org. If crowdfunding is planned for loans, kiva.org is the first choice.

Besides, there are general crowdfunding platforms where specific projects are supported. Examples are kickstarter.com, indiegogo.com, causes.com or causevox.com. Others can be easily found through a search engine on the Internet. Those platforms are worth a try. For funding success the size of the platform is extremely important. Often transaction fees are involved.

10.7. Grants

To cover all the bases grants are mentioned as a source of funds, but in most cases they will never reach such a scale that you can do commercial lending to farmers. Take them, if you can get them, but do not change your business model for a grant and do not count on grants. It is an unreliable source of funds.

Grants can be donated by various sources, including national or international NGO, CSR funds of private companies or even the government.

10.8. Member Fees

Farmer organizations might have the possibility to accumulate large funds through the collection of membership fees to be used as working or investment capital. Members pay one time and/or a recurring fee to get specific benefits, e.g. access to loans. It is crucial that accumulated member fees have to be maintained. In case an excessively large member fee equity is accumulated, a farmer organization has the option to stop collecting those fees.



11. AGRICULTURE RISK FACTORS AND THEIR IMPACT ON FINANCE

11.1. General

Agriculture is not risk-free and depends on many unknown variables. One of the main questions about risks is whether or not all farmers in all regions are vulnerable to the same extent. Many risks in agriculture are different from trading or service businesses, but not all. There are risks related to weather, farming practice and behavior after harvest. Those risks can lead to a reduced or lost production, reduced quality, or inability to sell the beans. All this could lead to a reduced income for the farmer and hence it might lead to the inability to repay a loan. Those risks also apply to other crops and a financial institution should be aware of them. The training in Good Agricultural Practices, held by SCPP, addresses some of the risks, especially risks related to farming practices and maintaining quality soil. Other risks, like weather, price, or exchange rate could generally be insured or hedged, but those instruments are not always available. Other risks cannot be addressed properly, but need to be kept in mind.

11.2. Production

Along with the selling price of cocoa, one of the most critical variables to analyze the farmer's cash flow is the production. The factors influencing production, such as weather, pests and diseases or farming practices are described in the following chapters. In general, it could be said that the higher the production, the higher the cash flow.

11.3. Weather

Weather is often deemed a risk in agriculture, but what is actually meant by weather? Is it too much sun, too much rain, too much wind or something else? And how does it impact the production of cocoa? Practically, in the cocoa industry it is all related to rain: too much, too little or just the right.

Younger trees need more shade than older trees, otherwise leaves get burned and this could either lead to minimal growth or even death of the young/small tree. This results in a loss of time till the next production, especially if the tree has to be replanted.

Wet environments increase the spread of pests and diseases and this leads to a lower production. Untreated pod diseases could infect other pods when raindrops carry the disease across, e.g. fungus carried from one pod to the other. Persistent rainfall can cause bean quality to deteriorate, down to a level where nobody is willing to buy the beans. At least the spread of pests and diseases can be partly managed through good farming maintenance, giving pests and diseases less room to spread.

Weather risks could be insured, e.g. with so-called Weather Index Based insurances or flood insurances. These instruments are not yet very common in Indonesia and completely non-existent in some areas. Currently, the Indonesian Government experiments with rice, horticulture, and livestock insurances. For the moment it is not a real option for cocoa farmers. Although being manageable to a certain extent, the risk cannot be mitigated.

11.4. Farming Practices

11.4.1. Aged Trees and Top-/Side-Grafting

Old and aged trees no longer produce in the same way as younger trees do. There are basically two options to change that: replanting and grafting. Both were described earlier. The risk is that the overall farm productivity decreases if the farmer doesn't address their aging trees. Many cocoa farms started producing in the 1980s and 1990s, meaning that their trees are now old and aged. Replanting means that an old tree is removed and a new one is planted in its place, taking at least 2-3 years to yield for the first time.

It is not guaranteed that the new tree will survive and reach production age. Also, the new tree may not even fulfill the expectations of the production. New trees should be top-grafted; a technique using a common seedling adapted to the local environment, which can add value through connecting it with a high-quality graft.

The value of top-grafted trees can be seen in the chart below. When growing a tree from a seed, the production of the tree is evenly distributed (left chart). When using a quality

top-grafted seedling, the average production of a tree, and thus the entire farm, results in a higher production (right chart).

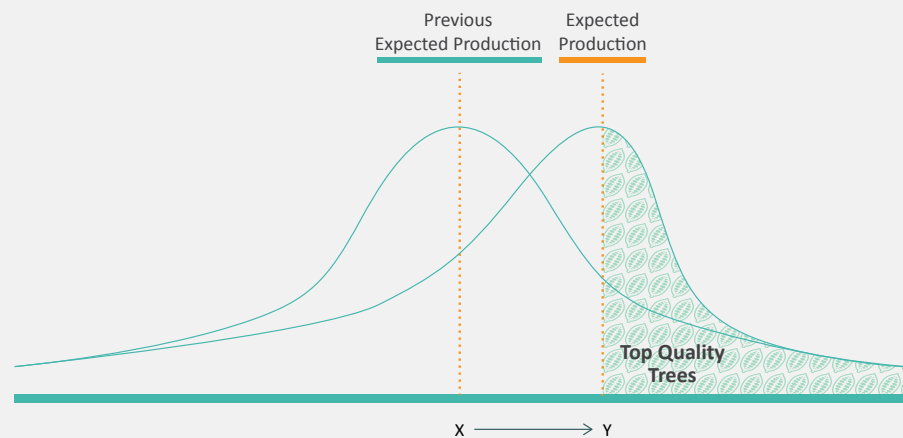


Figure 35: Average Expected Value: Top-grafted Trees vs. Non-grafted Trees

Side-grafting is a specific technique to use the existing trunk of the tree and graft a new “branch” onto it. The advantage is that yielding starts sooner and the old tree/branches can be maintained till the new graft is producing. That is the reason why currently 93% of the farmers

in the SCPP program prefer side-grafting to top-grafting. However, side-grafted trees do not produce as long as new top-grafted trees. Top-grafting is usually done with seedlings, but can be done on saplings as well.



Photo 4: Top-Grafting and Side-Grafting



Both, replanting and side-grafting are necessary techniques to maintain the productivity of the farm. The risk is the missing knowledge or willingness to rejuvenate the farm to keep production on an economically viable level. In the GAP trainings provided to the cocoa farmers a replacement of 5% - 6% of trees is recommended, meaning that up to 18% of the farm is not producing (3 years

till first production times 6% of the overall number of trees). Currently about 12% of the trees are young, but also about 12% are old aged. In reality, this should be not the case, because younger trees yield higher than older trees. When establishing younger trees, normal production is reduced an estimated 10%, but resulting later in much higher production through the higher yielding younger trees.

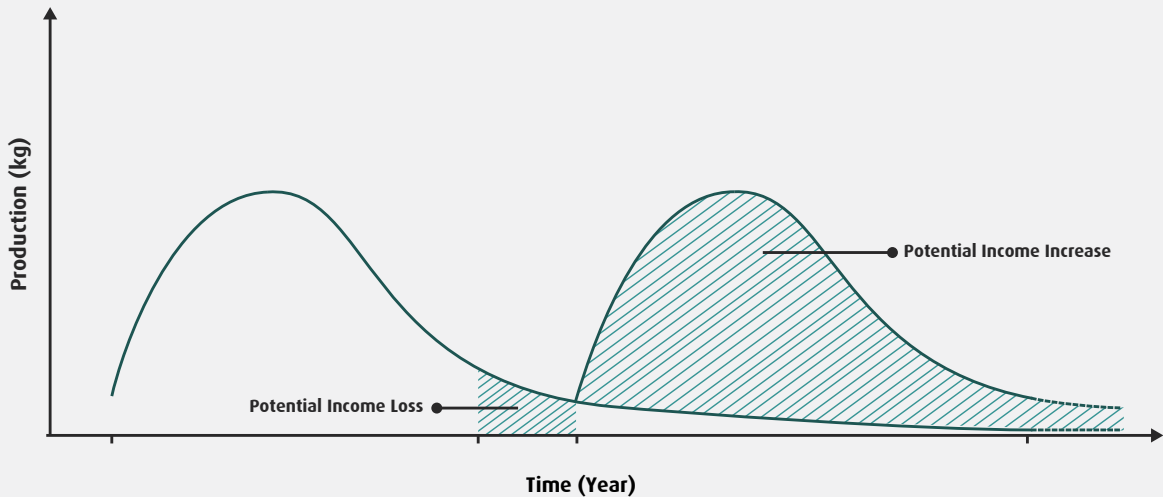


Figure 36: Replanting vs. Non-replanting

For repayment reasons and in the short-term, it is better to not replant in order to maintain some production from the old trees. However, it is a must for the overall farm performance in the medium and long-term. Farmers doing replanting are likely applying best farming practices, making them more valuable clients for financial institutions.

11.4.2. Switching to Competing Crops

A general risk of clients in agriculture is the risk that they switch production to other crops. From an economic point of view, this only makes sense if the new crop ensures a temporary/short-term higher net income to the farmers or the same income with much less labor input required. As seen before, competing crops include rice, oil palm or corn. The necessary knowledge to grow these crops can be acquired rather fast. This means that switching crop usually improves the income of the farmer, hence improves the repayment capacity as well. Most likely there will be a change in the cash flow pattern of the farmer,

which could result in different periods of money inflow during the year.

In case the price for cocoa or production due to old aged trees should fall to a very low level, while market prices for other crops remain at least stable, switching to another crop would be a very easy decision. A dramatically falling cocoa price is currently not expected.

(Please also see legal risks, in case new laws come into force that might cause a forced switch to lower yielding crops. This could happen if Indonesia comes up with a national, monoculture strategy or specific regional mono-crop regulations.) What can be done against that risk? When farming is seen as a business, as it should, the income of the farmers is competitive compared to other crops. If not, the risk of switching is high. In that case the cash flow pattern changes and the farmer should generate a higher income, thus increasing the repayment capacity. However, in any case it should be

part of the loan contract that the farmer informs the bank regarding crop changes with the option for the bank to reevaluate the case. Both bank and farmer should elaborate together on how the debt is to be paid off.

11.4.3. Use of Fertilizer

As seen before, wrong farming practices bear risks. The wrong timing and/or the wrong application of incorrect fertilizer could result in lower yields than expected. This means that fertilizer doesn't have the positive effect expected and could even have a negative impact. Still, a loan given to buy fertilizer has to be repaid, even if the used input is a total loss. This is most likely the reasons why many farmers do not want to take loans. Therefore, a loan analysis should always take this into account and current repayment capacity should already be sufficient. If the same fertilizer has been applied before and contributed to a higher yield, probabilities will change significantly towards a positive effect.

Testing the quality of the soil would lower the risk of applying the wrong fertilizer. Sufficient knowledge on the application increases the probability of having a real outcome and an increased production. It is still not always clear to the farmers when fertilizer has to be applied and in what quantities, but this is a matter of knowledge and can be trained. Fertilizer calendars with detailed application instructions could reduce the risk of wrong application.

11.5. Pests / Diseases

Cocoa is heavily at risk from pests and diseases and many of those can be combatted with good farming practices. It is estimated that 40-50% of the crop is lost because of pests and diseases. Too much rain and/or permanent moisture support the spreading and the survival of pests and diseases. It is more labor intensive to treat/maintain the farm accordingly, especially if not only single trees are affected, but the entire farm. To defeat pests and diseases, good farming practices are extremely important. Efforts can be strengthened through the application of pesticides, herbicides, insecticides or fungicides. They help farmers to reduce production costs and risk.

Pesticides are substances meant for attracting, seducing, destroying, or mitigating any pest. In general, a pesticide is a chemical or biological agent (such as a virus, bacterium, antimicrobial, or disinfectant) that deters, incapacitates, kills, or otherwise discourages pests. Target pests can include insects, plant pathogens, weeds, mollusks, birds, mammals, fish, nematodes (roundworms), and microbes that destroy property, cause nuisance, or spread disease, or are disease vectors.

Herbicides, also commonly known as weed killers, are pesticides used to kill unwanted plants.

An **insecticide** is a substance used to kill insects. They include ovicides and larvicides used against insect eggs and larvae, respectively.

Fungicides are biocidal chemical compounds or biological organisms used to kill or inhibit fungi or fungal spores. Fungi can cause serious damage in agriculture, resulting in critical losses of yield, quality, and profit.

Warning: However, pesticides and herbicides can have a negative impact on the environment and health. Sometimes they are applied excessively, which is uneconomic and unnecessary. They can reduce the populations of insects, spiders and birds that naturally control pests.

11.6. Animals

In some regions, trees and cocoa pods are subjected to the risk of being eaten or damaged by animals, especially monkeys, squirrels and cattle. A fence would help against some of those. Unfortunately some of the threats are solved by shooting or poisoning those animals.

11.7. World Market Price Risk / USD-IDR Exchange Rate Risk

The world market price risk refers to falling prices, which affects cocoa producers, and indirectly, the financial institutions financing them. Low prices could have a number of

negative impacts for financial institutions and the farmers' households. First of all, the cash flow of the farmers could drop and hence there might be shortages in money, resulting in worse repayment behavior and the bank could lose nearly all money lent to the farmer. Due to the oversupply of beans, the cocoa price fell in 2000 to around USD 714 /ton, a 27-year-low.

Other effects of falling prices (and non-compliance with loan obligations) sound bad at first, but they depend on the point of view. There might be a need to sell the land. This would be extremely bad for the farmer, but for financial institutions this means sufficient cash flow for the repayment of the loan. Falling land prices would lead to a similar conclusion. Switching to another crop only make sense if that other crop has better economic perspectives. This would lead to at least a partially better repayment capacity (even if the new income is lower than the price drop).

Price decreases may be attributed to, among other factors, favorable weather conditions, subsidized distribution of fertilizers and insecticides to farmers, expectations of a large crop or higher stockpiles, and/or decreased demand expectations among processors.

Rising prices are risks for off-takers and producers of chocolate. Due to higher prices, less chocolate (and hence fewer beans) might be demanded. Thus, the risk is that the farmers might not be able to sell their entire production to off-takers. In that case higher prices could compensate the lower sales, but the final effect depends on the situation. This scenario is not expected in the next few years. Currently, Indonesia has to import cocoa beans to meet the supply demand of its processing facilities.

Price increases may be attributed to, among other factors, delayed transportation of cocoa to ports, limited producer selling, lower stockpiles, extreme weather conditions such as intense rainy or dry periods, and/or political instability in producing countries.

There is an exchange rate risk, since the world market price for cocoa is stated in USD and the local cocoa price in IDR. As it can be seen in the chart below that shows the USD/IDR exchange rate between January 2006 and February 2016, the exchange rate can develop in both directions. The cocoa price risk is more significant for the farmers than the exchange rate risk.



Figure 37: USD/IDR Exchange Rate
Source: Bank Indonesia

The cocoa world market price is shown in the chapter about economic perspectives. As it can be seen, declines in the cocoa price happened in the past when the IDR lost against the USD, meaning that the cocoa price in IDR

was relatively stable and hedged against downward risk. However, there is no way to guarantee that the same outcome will happen in the future.

No	IDR/USD	Cocoa Price	Overall Effect on Farmer Income
1	⇒	⇒	⇒
2	⇒	↑	↑
3	⇒	↓	↓
4	↑	⇒	↑
5	↑	↑	↑↑
6	↑	↓	⇒
7	↓	⇒	↓
8	↓	↑	⇒
9	↓	↓	↓↓

Table 12: Exchange Rate and Cocoa Price Effect on Farmer Income

The table above gives an idea about the overall effect on the farmers’ income if the IDR/USD exchange rate and/or cocoa prices change. It is obvious that if the USD gets stronger against the IDR and the price for cocoa goes up the farmer income (in IDR) will go up substantially (case 5). If both factors change against each other (case 6 and 8), the final effect depends on the stronger development. If an exchange rate decrease is stronger than the price decrease, the effect will still be positive for the farmer in nominal terms.

Last but not least, there is the risk of speculation with cocoa futures which influences the price. Price movement is also highly influenced by hedge fund managers and speculators with long and short positions in cocoa. This activity serves as a driving force behind short-term volatility. Speculative buying (long position) results in a price increase and selling (short position) results in a price decrease.

11.8. Genetics

One of the risks a financial institution cannot evaluate is the one about the genetics and quality of the planting material used. These factors refer to higher yielding plants or better resistance against pests and diseases. Lower quality plants take the same space as a higher yielding one and hence have a huge impact on the production of any given size of farmland. Although it is in the own interest of the farmer to use the best material for production, that is not always the case in reality, especially if free planting material is distributed, e.g. through the government.

11.9. Quality of Produced Beans

Another risk is that the cocoa beans do not meet basic quality criteria, which makes it difficult to find a buyer for those beans. Quality is related to processes that can be influenced, e.g. fermentation, and other influences that cannot be controlled, e.g. weather. There are several factors that are related to bean quality: bean size, moisture, insects in the beans, fermentation quality, color or even the share

of waste (foreign matter) in the bag when selling. The quality of cocoa will not improve after the fermentation and/or drying process.

Bean size is important, because smaller beans have a higher percentage of shell by comparison of larger beans. The shell is not usable, but still has to be paid for based on the weight of the beans. Moisture is related to storing and weight, which once again, has to be paid over the bean price. More moisture means there is more water in the beans, making the beans heavier and might result in quality loss when storing (e.g. moldiness).

In Indonesia, usually all available beans are bought, as long as a buyer is close enough to the farms. There can be price deductions if the quality is not good enough. The supply/demand situation is tight, so there is a demand even for lower quality beans. This could change in the future if the supply situation improves or if importing was allowed on a large scale. However, this is not expected for the next few years, so the current risk would be a rather lower price, and no buyer at all.

11.10. Soil Quality

Plants are growing and producing according to prevalent conditions. In good conditions they grow well; in bad conditions they use reserves and then adapt to the condition. Every plant, when it grows, is using nutrients out of the soil, water, and sunlight. If those nutrients are not replaced, the quality of the soil decreases over time and it is less suitable for high production. Nutrients can be replaced organically (e.g. compost, etc.) or inorganically (chemical fertilizer). For the plant it doesn’t matter as long as sufficient nutrients are available and conditions are optimal. Knowing what quantity of nutrients cacao trees use is a mathematical exercise, and the replacement can be calculated. The availability of appropriate fertilizer depends on the market, but the farmer could basically mix the components themselves.

In the best case scenario, the soil is tested before applying fertilizer, but this relies on having the right testing tools, which a farmer usually does not have. For farmer organizations it would be a good business model to provide soil testing services, having the necessary equipment and trained staff in place.

11.11. Human Resource Risk

The human resource risk refers to the lack of qualified staff that can perform the necessary work on the farm. In cocoa farming the farmer should have sufficient knowledge of the crop, otherwise he would switch to another crop. There are a few specialized tasks, e.g. applying pesticides, but those are sometimes missed due to lack of knowledge and lack of equipment.

11.12. Climate Change

Many things are said about climate change. The impact on agriculture in general can be manifold: Crops cannot be grown in certain areas anymore, or they start growing in new areas as well. Rainfall and sunshine patterns might change, making the result of the harvest unpredictable. Extreme events like typhoons might happen more often or outside their “common routes”. Sea level rises might affect certain areas As a result, cocoa farms may need to become land for other crops such as rice because unprocessed cocoa is a cash crop and cannot fulfill the immediate needs for food security. There are a lot of possible scenarios, although the changes come in small increments and do not affect the cocoa farms short term. Since the trees produce for 30 years, it is important to take into consideration that farming might be more difficult in 10 years.

In the product design phase it has to be considered that those scenarios could happen and loan maturity should not be too long for that reason. Regardless, this should not be the case to keep risk evaluation valid for the entire loan term.

11.13. Transport Risks

Some farmers are far away from buying stations or choose to go to the ones further away to get better prices, e.g. with exporters. In that case the cocoa beans have to be transported. One of the risks is quality loss during transportation, e.g. part of the beans start to go moldy, because they were too wet during the long travel time. This has implications on the price. Since loss during transportation is a general factor, not just a agricultural factor, it is not considered further. Compared to horticulture/vegetables, cocoa beans are more transportable and the price for transport compared to the price of the commodity is marginal. There is insurance to cover transport losses.

Another transport factor is the weather itself. Located in remote areas, bad weather could delay the transport due to bad road conditions.

11.14. Legal Risk

Legal risks are not only related to agriculture. Specific regulations for farmers could be put into effect such as an obligation to ferment beans, prohibition of certain fertilizers or pesticides, specific quality standards or bean origin records, increase in tax, or the introduction of a state owned buying unit. All of these regulations are possible and nothing can be done about it. However, loan periods for farmers are usually short enough to react to changing legal risks, because there would likely be transition periods for the introduction of new rules.

Most importantly legal risks are related to land, both regarding land registration issues as well as land use legislation. The land registration is a minor risk. Usually, farmers have had their farms for a very long time in the area and the neighbors and village major know the situation very well. A higher risk might be a forced switch to lower yielding crops. This could happen if the Indonesian government comes up with a national, monoculture strategy or specific regional monocrop regulations. Threats to food security is a possible scenario

where this may be implemented. In order for Indonesia to secure food self-sustainability, specific regulation on land use in certain regions could be implemented to contribute to promoting food security. That might be the case with rice. That particular risk is not expected for the near future, because governmental agriculture strategies involve the cocoa sector and are intended to increase cocoa production significantly.

Increasing or decreasing taxes are a risk too. Reducing the cocoa bean import tax from 5% to 0% might lead to a higher import of beans. High quality deliveries might put pressure on the price for Indonesian cocoa beans, since farm gate prices for farmers in Africa are regulated and much lower than in Indonesia. Other taxes, like VAT, might have a negative impact on the farm gate price, reducing the repayment capacity of individual farmers.

11.15. Political Risk

Broadly, political risk refers to the complications businesses and governments may face as a result of what is commonly referred to as political decisions. This could have serious impacts, mainly on the production and sale as it could become unsafe to produce and sell. In addition to that, it would impact the price of cocoa which might go up/down because of reduced supply/demand.

Due to the 2011 political unrest in Côte d'Ivoire, the largest cocoa producer in the world, the cocoa world market price climbed to a 32-year high at 3,775 USD/ton.

11.16. Off-Taker Risk

On the level of trading, cocoa is highly competitive and usually there is always a local buyer for Indonesian cocoa beans. In the worst case scenario the buying price has to be lowered. There are a few exceptions that affect farmers: extremely low quality, falling demand and/or raising supply, leading to an "overproduction." However, these scenarios are currently not expected.

Larger processors or exporters want to buy larger quantities at once. Through pooling their beans together, farmer organizations could meet the quantity demands and additional off-takers could be interested in purchasing beans in that region.

Cheaper and higher quality cocoa beans being imported from outside could possibly create a serious off-taker risk. In that case, government interventions such as raising the import tax for cocoa beans or general import restrictions are expected to protect the income and livelihood of the Indonesian cocoa farmers, since the sector is of paramount importance for the Indonesian government.

11.17. Natural Disasters Risk

Besides the threat of floods, droughts and forest fires, Indonesia is very vulnerable to earthquakes, volcano eruptions, and in some areas, tsunamis. All these threats can interrupt the production and reduce the priority of taking care of the cocoa farm. Hence, they could affect the repayment capacity of a farmer. The worst scenarios for cocoa farmers are volcano eruptions, since the ash could temporarily change the climate in the region or fall on the cacao trees and destroy production. This is the same for other sectors like trade and services, so natural disasters are not a specific agricultural risk.

11.18. Non-Agricultural Risks

Other, non-agricultural risks remain for financial institutions including default risks, risk of death, and risk of over-indebtedness. Risk of death can be insured with credit life insurance. Protecting from the other risks is the responsibility of a financial institution and can be reduced through proper loan analysis, good client selection, use of appropriate collateral, and close/regular monitoring. At the bank level the risk management is crucial and is required by the central bank. It is not specific to agricultural lending.

11.19. Side-selling

The issue of seller loyalty is a commonly known bottleneck for value chain pre-financing initiatives in the Indonesian cocoa sector.

This is because of loose relations between the stakeholders. Farmers can easily sell to other traders for better prices unless they feel farmers are committed to just one trader. Farmers can feel obliged to go to one trader because local traders can offer individual farmers credit in emergency situations and claim a long-term commitment in return.

If a trader has provided a loan or pre-financing to a farmer, this usually implies that the farmer has to sell his production to this particular trader. A trader can secure his supply through this way. When the farmer sells his cocoa to that particular trader, the loan is repaid with the cocoa sold. Side selling means that a cocoa farmer sells at least a part of his harvest to somebody else, which he is entitled to do as trader agreements are not formal. So the trader cannot deduct the loan from the sold beans. If the farmer is honest enough, he repays the money of the loan to that trader/lender, but has not fulfilled his commitment to sell to that trader/lender, who could have earned additional margin through cocoa traded. If the farmer does not repay the loan at all, this is considered to be a reflection of bad character in Indonesian culture. Traders have been working for many years in the same areas, know the farmers very well and are well known by the farmers. Traders know who are creditworthy and who are not creditworthy. Financial institutions could work with traders as agents, because the trader's background knowledge and relationship with the farmer could reduce the repayment risk significantly. Usually, traders have proper records and a proper loan analysis could be executed as well. The trader could receive loans for either trading purposes or further re-lending to the farmer, or financial institutions could use a trader as an agent and the trader could receive provisions if the farmer repays reliably.

Interestingly, the trader doesn't seem to deduct money from the price to charge interest to the farmers. Indications show that farmers with a trader loan receive higher prices than those who do not have a trader loan, most likely to avoid side-selling.

12. RISK REDUCTION

There were two major crises in the last 20 years in Indonesia: the 1997/8 Asian crisis and the 2008/9 worldwide crisis.

12.1. Economic Crises

There were two major crises in the last 20 years in Indonesia: the 1997/8 Asian crisis and the 2008/9 worldwide crisis. The Gross Domestic Product in 1997/8 nearly declined by more than 50%, in 2008/9 the growth slowed down only.

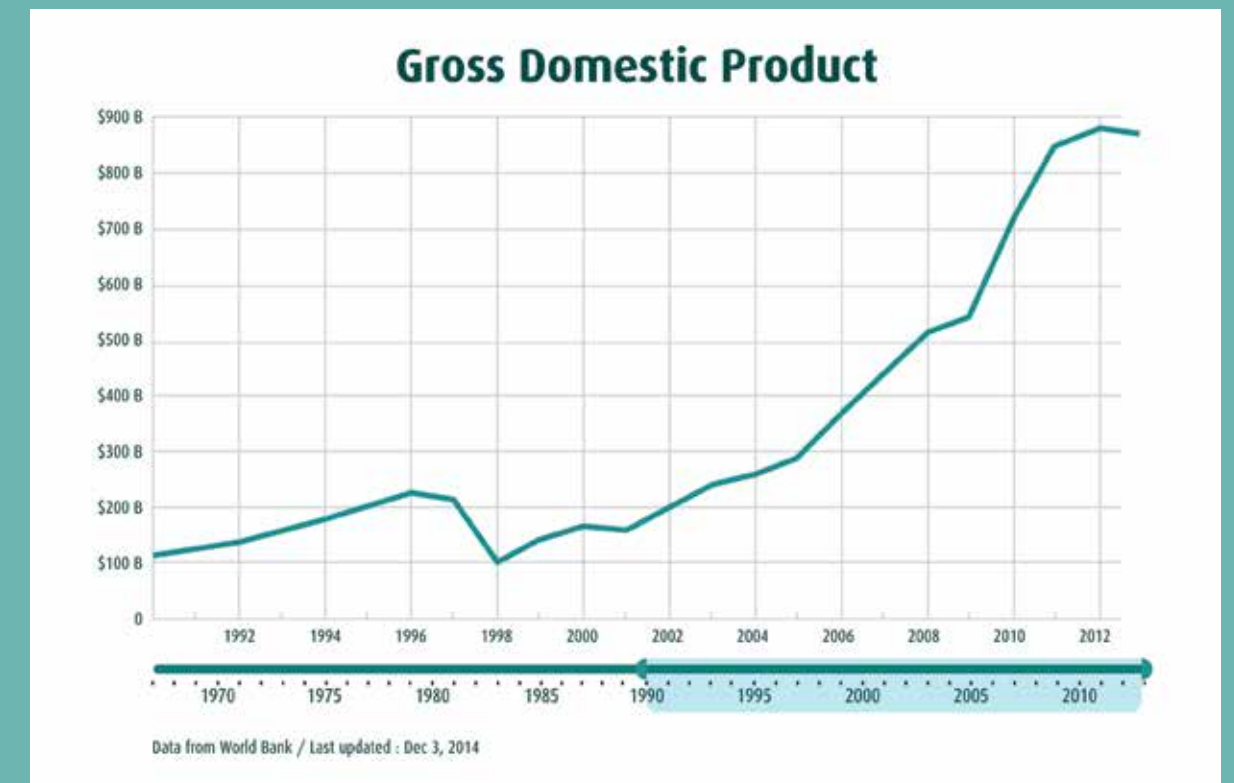


Figure 38: Indonesian Gross Domestic Product
Source: World Bank, 3 December 2014

The following happened to the cocoa price and the IDR/USD exchange rate:

As seen in the previous charts, the cocoa price dropped by about 40% during the 2008/9 crisis to about USD 2,100. At the same time, the IDR got weaker and the exchange rate dropped from IDR 9,000/USD to IDR 12,000/USD. In 1997/8 the effects were only visible on the IDR/USD exchange rate, leading to a higher IDR cocoa price for farmers, but returning to the previous value later.

12.2. Micro Insurance

On the topic of financial products, micro insurance is a tool to mitigate risk. In the particular case of cocoa, the kind of risk has to be determined before speaking about risk mitigation.

Loan related micro insurances can be a credit life insurance to cover default risk in the case of death, motorbike insurance, collateral such as a car, or health insurance. Insurance against accidents are not common in Indonesia.

Insurances against natural disasters, especially floods, are available, at least in some regions of Java. Here, it depends heavily on the location of a cocoa farm.

Specific agricultural insurances exist in Indonesia for rice, livestock and horticulture, however this is on an experimental basis initiated by the government.

12.3. Proper Loan Analysis

One of the most efficient risk mitigation tools for loan business is a proper loan analysis. There is no getting around the need for a loan analysis. The only question is how it can be done in an efficient way, to keep the overall product commercial attractive. A proper loan analysis is an open process. It should be efficient and evaluate the farmer’s willingness and capacity to repay.

The 5C approach should be followed, evaluating the borrowers capacity (to repay), own capital (invested in the business), collateral (or other guarantees), conditions (purpose of the loan and economic condition of the local economy) and character (including references).

Some banks still stick to asset-based lending, meaning that the only base for a loan decision is the existence of sufficient collateral, usually 150%-200% of the loan amount. However, how can a loan for investment or working capital be repaid if there is not sufficient free cash flow to do so? Asset-based lending should not be considered in the case of financing cocoa farmers, because usually their most valuable asset is the base of their income: land.

A much better option is cash-flow-based lending. With this methodology, the free cash flow of the farmer is calculated and a certain percentage, e.g. 50%, of that free cash flow is considered as free available repayment capacity. All personal and business expenses have to be taken into account, as well as the timing of the cash flow. Cocoa farmers usually have a higher cash flow in the peak season(s), which enables them to repay a loan during this period. Farmers with insufficient capacity should not get a loan in order to protect the bank from default and the farmer from over-indebtedness and the loss of collateral. Sometimes, this might be hard to understand and disappointing for the farmer, but he can still prove his ability to save.

12.4. Collection Practices

In case of non-repayment something has to happen. The farmer should never get the feeling that it is ok to pay late. Of course, there are some circumstances that make the payment impossible. Even in that case the borrower has to be proactive, informing the loan officer and providing proposals of how to overcome the situation.

The internal MIS of the financial institution should provide the information on due dates and the current account balance. In case this does not fit, the borrower has to be called on the same day of payment. Collateral has to be seized as soon as possible to support the legitimate claim of the financial institution and to show the borrower that non-repayment is not tolerated. Cocoa farmers and any other borrowers have to understand that their behavior put the entire provision of loans at risk. The entire provision is at risk because a financial institution would not continue a loss generating activity, and a loss will occur if too many borrowers neglect to repay. Hard, but fair must be the maxim.

12.5. Collateral

12.5.1. General

Collateral is considered to be every possible physical or non-physical credit guarantee, and not only the ones described in the Indonesian banking regulation on asset quality. This results in the fact that some collateral doesn’t have a considerable value in regulation, but still, those items fulfill the basic requirement of collateral: being used to ensure the repayment of a loan.

Collateral acts as a screening tool to mitigate the risk of adverse selection and also moderates the moral hazard risk to a certain extent as it is useful in enforcing a contract. Collateral is used to reduce risk; hence it can lower the risk premium within the interest rate of a loan or make a loan even possible. In case a farmer doesn’t repay a loan, the financial institution has the right to seize a valuable item and put it to use. Obviously, many farmers do not have hard collateral and

this constrains their access to loans. In case farmers do have collateral, financial institutions tend to use real estate or land property (with certificates), and motorbikes or other valuable items. Banks have also been known to use trust-/creditworthy guarantors with fixed salaries or another capacity to repay a loan in case of default.

Collateral is the “incentive” for the borrower to repay. In reality, financial institutions do not want to see any collateral during or after the loan term, nor seize it, because it means that the borrower did not fulfill the loan contract as agreed. Collateral only causes work. If a loan is repaid as agreed, there wouldn’t be a need for collateral. Unfortunately, some clients need that “incentive,” meaning that the rest of the clients need to be taken hostage as well.

For psychological reasons, every borrower should provide physical or non-physical collateral that will allow a financial institution to enforce the repayment of a loan.

Not making use of provided collateral in case of arrears makes a financial institution less credible, because it shows that it tolerates the behavior of late payment. By not seizing the collateral, financial institutions can torpedo the entire loan product target sector. So in any case collateral has to be taken. This shows again the paramount importance of choosing clients who are willing and able to repay.

Requirements towards good collateral are:

- Value stability (during the maturity of the loan the value of the collateral should remain stable or at least predictable)
- Fast to liquidate and sufficient demand for the items
- Short time and low cost of administration and realization
- Low opportunity costs resulting from the property of the collateral
- Have an economic or moral value to the client
- Divisible

The following table compares some collateral towards those characteristics and the subsequent chapters discuss the collateral in more detail.

Characteristic	Land/ Building	Motorbike/ car	Cocoa Beans	Guarantor	Off- taker letter
Value stable during loan term	✓	✓	✓	≈	≈
Fast to liquidate	✗	✓	✓	n.a.	n.a.
Sufficient demand for the item	✓	✓	✓	n.a.	n.a.
Low cost of Administration	≈	≈	✓	✓	✓
Low opportunity costs from the collateral	≈	≈	✓	✓	✓
Economic value to the client	✓	✓	✓	✗	✗
Moral value to the client	✓	≈	✓	✓	✗
Divisible	✗	✗	✓	n.a.	n.a.
Is considered by banking regulation as collateral	✓	✓	✗	✗	✗
Doesn’t need to be insured to keep economic value	≈	✗	✓	n.a.	n.a.

² 20.1% of the cocoa farmers in the Sustainable Cocoa Production Program (SCPP) do have a formal land title.

Characteristic	Land/ Building	Motorbike/ car	Cocoa Beans	Guarantor	Off- taker letter
Multiple Ownership not possible	✓	✓	✗	✗	n.a.
Loss of item or economic value after seizing	Possible, could be high value because of buildings or trees on the land	Possible	Possible, but low value	n.a.	n.a.
Easy to transport	n.a.	✓	✓	n.a.	n.a.
Percentage of cocoa farmers owing it	20.10%	50% - 80%	100%	?	?
Collateral is immobile	✓	✗	✗	n.a.	n.a.

Table 13: Collateral Characteristics

12.5.2. Collateral to Be Considered

12.5.2.1. Cocoa Beans

One of the best collateral to be used for cocoa farmer loans could be cocoa beans.

Just thinking a bit outside the box and comparing the characteristics of beans against the requirement for good collateral shows their suitability. They are easy to transport, as well as easy and fast to sell. Cocoa is a cash crop. Cocoa beans are barely used for private consumption in the producer household unlike other crops, e.g. rice. Cocoa beans are the future cash flow of a cocoa farmer household. Even if there were some repayment problems for whatever reason, the cocoa farmer will continue farming cocoa beans in the following years, because the trees are there and productive. Even if farmers consider changing crops, the farmer would only do that if the alternative would be economically more attractive. Cacao trees are productive throughout the whole year.

Cocoa beans are in most cases not considered as “valuable” collateral by the central bank and loans to cocoa farmers with cocoa beans as collateral might be classified as “loans without

collateral”. A classification of pods on the tree or dried beans as inventory doesn’t seem to be feasible, especially since the beans are sold immediately either wet or after being dried. The consequence of not being considered as collateral would be a higher loan loss provision for a financial institution in case of arrears. Still, this collateral has a psychological effect on the farmer because he is now deemed creditworthy. In fact, the loan loss provision is only a temporary loss in the profit and loss statement. As soon as the loan is repaid, that individual special loan loss provision is cleared. The negative impact is that during the term of the loan, a financial institution has to balance the loan loss provision, showing a lower profit/higher loss during that time.

A disadvantage of that kind of “mobile” collateral is the issue of multiple ownership without the lender’s knowledge. This means that loans are taken from different sources, and in fact, the same beans are used to secure the loan. This could lead to over-borrowing and when collecting, there wouldn’t be sufficient collateral for all lenders, even though the beans are growing all year long). One option would be a public register in which all loans are reported, e.g. a Credit Reference Bureau.

Nevertheless, using cocoa beans as collateral at scale would be a first mover advantage for a financial institution, potentially securing an interesting target group while meeting the needs of the client half way.

12.5.2.2. Off-Taker Guarantee Letter

Sometimes financial institutions ask for an off-taker guarantee letter stating that a certain off-taker will buy the beans of the cocoa farmer.

Is this good collateral? And how can the bank know that the off-taker is liquid at the time of harvest? Or what if the farmer sells to another off-taker? In our opinion it is better that there is some competition in the trading market,

because that allows the farmer to choose the buyer paying the highest price. An off-taker also might not buy all the beans, especially in case of low quality beans. The value of such an off-taker guarantee letter is limited in the case of cocoa farming.

12.5.2.3. Land

The overwhelming majority of farmers in Swisscontact’s Sustainable Cocoa Production Program are landowners. Only a few share crops or rent/lease land. But only 20.1% of the cocoa farmers have formal land titles that are sufficient to be considered as collateral for banks.

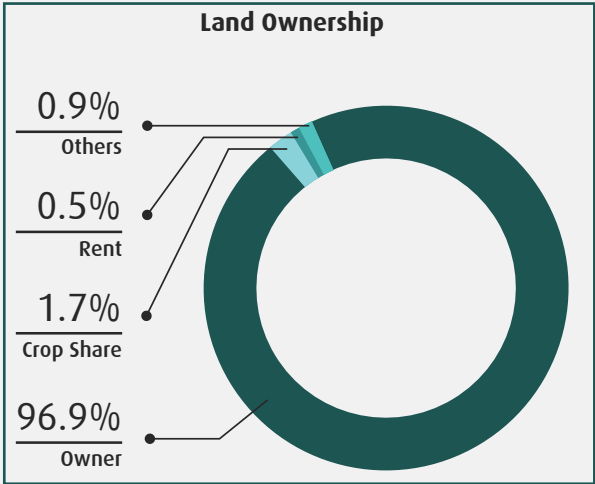


Figure 39: Ownership of Land

Land is an often accepted as collateral for banks. Its value is stable over the loan term, has a single ownership and is immobile, so cannot be moved somewhere else where a bank doesn’t have access. The land title is handed over to the bank till the loan is repaid. The value is considered in the loan loss provision formula of the banking regulation. The biggest disadvantage of land is that it cannot be easily divided. In case of arrears the land is “seized” and the bank doesn’t bear an immediate loss through increased loan loss provision, but in the end, the client doesn’t feel the consequences from not paying. If legal enforcement in a country is strong, the case can be handed to court. If not, the case is somehow pending.

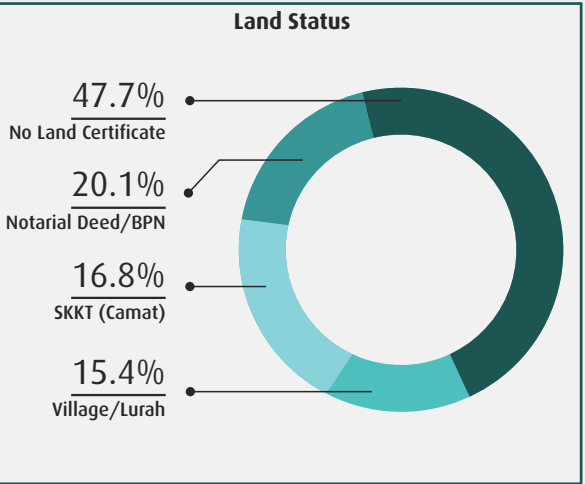


Figure 40: Status of Land Title

Low formal land ownership is a bottleneck that needs to be addressed to increase the quantity of accepted collateral amongst cocoa farmers and improve access to loans.

Although popular amongst banks and widely used, land should not be used as collateral for working farmers in the first place, because it puts the farmers in a difficult situation. As stated before, collateral should be strictly handled in case of arrears, otherwise a financial institution is not credible. Tough, but fair. Doing this in the case of land would possibly destabilize the farmer’s income and life. It puts a financial institution in a difficult situation and bears reputational risk.

Should a piece of land strictly be sold to cover the outstanding loan amount, even if that outstanding amount is only marginal compared to the land value? Should a higher loan loss provision be accepted, because the farmer might not pay? Should the reputation of the bank be put at risk taking away the farmer's main asset and source of income? Here, it is advantageous to have divisible collateral to seize and sell. The fear losing their land could mean that the farmers would rather continue to receive a lower income than face the issue of insecure land tenure. Yet having access to loans means that farmers can invest in their capabilities and capacity, thus increasing their income and becoming eligible for other bank products as well. As seen in other Asian regions, harsh collecting practices and the fear of losing their land have trapped farmers into poverty and even forced some to commit suicide. In that situation, banks were recklessly lending, accepting the fact that farmers face issues with over-indebtedness. This cannot be intended by giving access to loans to cocoa farmers.

Obviously, there is one exception: If a farmer takes a loan to buy an additional piece of land, this land could be taken as collateral, since it is the underlying asset of the credit operation.

12.5.2.4. Guarantor/Guarantees

A guarantor is a person, not identical with the borrower, who guarantees the repayment of the loan. This could be a spouse (if not taking the loan together), a neighbor, another family member, etc. Obviously, a guarantor can only guarantee the repayment of a loan if they have the capacity to repay it on behalf of the original borrower. Banks have to assess the quality of the guarantor. Usually salary receivers are considered as potential guarantors, but also businessmen. Being a guarantor requires a lot of trust between the guarantor and the borrower and should be taken as a seriously.

In microfinance there are often group guarantees. The members of an established and collaborating group guarantee for the

repayment of its individual members in case they do not repay and will exert social pressure to make sure they stick to the agreed repayment plan. However, in Indonesia only 56.35% of the members of a cocoa farmer group would repay a loan for another group member.

Another guarantee is offered by guarantee schemes. Often they are subsidized and intend to stimulate the provision of loans to a certain target group. Schemes share losses at a certain percentage (e.g. 70% for the provider of the guarantee, 30% for the financial institution). However, if not well designed, it is easier for a financial institution to claim losses directly from the guarantee scheme, rather than accepting their own loss share and having to work to recover the loan. If piloted and rejected, those schemes can harm the development of commercial solutions, since it hasn't worked out, "even with a guarantee scheme."

12.5.2.5. Other

If a farmer owns a motorbike or car, this could be used as collateral, since it fulfills the requirements of the asset quality regulation and is deductible from the outstanding loan amount in case of arrears. It has a stable value, is fast to liquidate and the documents of the vehicle can be administrated easily. The loss of such collateral in case of default wouldn't be as drastic for the farmer.

Microfinance is well known for using non-traditional or soft collateral, such as household items of the borrower. This could range from items like a TV to crates of soft-drinks. Banking regulation usually doesn't value that kind of collateral, even though it has been proven to be effective in many countries under the umbrella of microfinance.

Even if not necessarily needed, some psychological collateral should be taken. Examples could be:

- TV - a TV doesn't have huge value for a financial institution. But in case of arrears, it would be relatively easy to

transport and the farmer doesn't want to lose it.

- Other household items (couch, fridge, etc.) – such items are also possible, but more difficult to transport and might be considered as necessary household items.
- Other business items – does seizing those items hurt the income generation of the farmer? If so, it can't be seized. But if not collectable, it is not proper collateral.

Some production equipment could be considered but is not such a good choice, because it hinders the farmer in generating their future income. These are: compost making machines, pesticide sprayers, fermentation boxes, fertilizer or seedlings in stock, etc. Some household items are absolutely necessary for living such as cooking equipment and can't be considered as collateral.

12.5.2.6. Moral/Religious Collateral

Religion might be perfect moral collateral to provide financing. This sounds unusual, but to reiterate, thinking outside the box is necessary to provide commercially attractive loans to the target group of cocoa farmers. Al Q'uran provides many examples of required behavior, e.g.

- "O Believers: Honor your contracts" (5:1)
- "And fulfill every commitment. Surely every commitment will be asked about (on the day of judgment)." (17:34)
- "... Allah will surely make evident those who are truthful, and He will surely make evident the liars." [29:3]

Such moral collateral can only be used in the framework of proper application of that religious collateral. It must be considered in the framework of prohibited interest (riba). Still, even if a client should consider the interest as riba, debts have to be repaid.

12.5.2.7. Hedging

The Jakarta Future Exchange provides the option to buy and sell futures on cocoa. Thus,

it would be an option to hedge cocoa. In the case of farmers and financial institutions, it means to sell cocoa to a fixed date for a fixed price. Unfortunately, this doesn't work out. The contracts bought can be settled one month before termination, making it a paper-based speculation and not a crop-hedging tool.

12.5.2.8. Conclusion on Collateral

Cocoa farmers do have collateral, although it is not the typical collateral financial institutions usually request. Thinking about the collateral requirements leads to an unusual choice: cocoa beans. Cocoa beans are easy to collect, divisible and fast to liquidate. There is sufficient demand in the cocoa regions, (which is exactly where the cocoa loans are disbursed) and selling the seized beans can be stimulated over the price. The beans have a value, are continuously produced by the farmer and the selling process can be easily administrated. There is no need to even store the beans somewhere.

It would be an option to waive collateral. But telling farmers that they do not need collateral at all, even for small loan sizes, might have a negative impact. From the psychological point of view, it is better to say that the financial product requires collateral, using collateral a farmer usually has: cocoa beans. The positive psychological effect is that a farmer can say she/he is at least partially creditworthy because she/he has collateral. Without collateral the farmer might have less motivation to repay, since she/he doesn't have anything to lose in case of non-repayment, except reputation. In practice collateral is still taken to stimulate/incentivize the repayment behavior.

Two final points on collateral: In an ideal world, there wouldn't be any need for collateral, because the client has sufficient free cash flow to repay his/her loan as agreed. Secondly, farmers with insufficient repayment capacity should never get loans anyway in order to protect the bank from default and losses and the farmer from over-indebtedness and the loss of collateral.

13. LOAN PRODUCT DESIGN

A successful cocoa farming financing scheme must be tailor-made to crop cycles, taking the timing for input provision into account.

13.1. Farmer Level

A successful cocoa farming financing scheme must be tailor-made to crop cycles, taking the timing for input provision into account, which also differs in regions as illustrated in the crop cycle charts before (and seen in the Sulawesi crop cycle below).

Generally, the crop cycle of cocoa, starting from flowering to harvesting, takes 5-6 months. Typically, farmers will apply pruning during or after the peak season and follow-up with fertilizer application at the same time. Flowering and producing pods happens within one or two months after applying fertilizer. During the pod-growing period, the farmers should further apply Good Agricultural Practices (as trained by SSCP), including weeding, regular pruning, controlling pest and diseases and harvesting of pods during the low season.

Repayments of the principal should be scheduled during the high season, when sufficient cash flow is available. Interest payments should be scheduled regularly (e.g. monthly), so the farmer does not forget about his obligation.

Financial products should be flexible, e.g. allowing faster repayment without extra costs if the farmer has money available to do so. It should not be forgotten that most farmers do not have too much experience with banks and could be daunted.

Loan maturity depends on the purpose of the loan. For fertilizer a rather short period should be chosen, e.g. until the next high season. For land 3-5 years seem to be appropriate.

Loans for rehabilitation, especially to cover income losses during a replanting period, should be disbursed step by step and not all at once. Disbursing the entire loan amount at the beginning of the term would result in unused money with higher interest cost for the farmer

and higher risk for the bank. The appropriate use of the loan could be ensured easier with a step-by-step approach and disbursements for following years could depend on monitoring the progress. On top of that, the farmer could come to the bank more often, using (or learning how to use) a bank account.

The farmer selection could be based on data (e.g. through CocoaTrace) and should concentrate on professional and progressing farmers, but not unprofessional ones. Progressing farmers produce more than 500kg/ha/year. Recommendations from a farmer organization might be an option, however, should not be the only selection criteria as seen from the outcomes of government loan programs.

Working capital loans should be accompanied by promoting savings, because farmers with a saving habit will most likely be better at repaying loans since they are used to regular payments. Savings will overcome the issue of excessive smaller loans being disbursed, which causes a lot of work for the bank, and make farmers able to finance their inputs themselves. However, they might demand larger loans later for either larger business investment or consumption.

Repeat loans should be given to any farmer with an excellent repayment behavior, meaning no single day in arrears. A quick check of the farmer situation will still be necessary. Those farmers will be considered as good clients and will be able to enjoy a faster process. An overdraft facility might be an option too, reducing workload for new loans significantly.

Monitoring should be regular. The easiest way to monitor is if the loan officer is close by and frequently stops by the farm or the farmer's house.

13.2. Farmer Organization Level & MFI

The number of farmer organizations, compared to the number of individual farmers, is rather low. Therefore, working capital loans to farmer organizations and MFI will not be a separate product, but will be oriented on the provision of loans to small and medium enterprises. For that, financial institutions should have adequate products already developed and/or use standard business loans.

Specific issues of farmer organizations currently include the age of the organizations, the institutional setting, the lack of credit history, usually unaudited financial statements, and

the qualifications of the management board. This makes careful loan analysis and close monitoring necessary.

The loan purpose is important too. For cocoa trade an overdraft seems to be appropriate. Other working capital loans might not be large enough to be financed, but it could be tested with limited risk for a bank to build a credit history and observe the organization's willingness to repay the loan. Investment capital loans should be collateralized. Maybe the board members of a cooperative are willing to provide a fraction of their own land as collateral.

13.3. Competing Product Design Options

There are competing options on how to design products. One possibility is a credit scheme, using a partnership between banks, off-takers, input suppliers and farmers or farmer organizations. The other option is a pure banking relationship between a farmer and financial institution. Both are illustrated below:

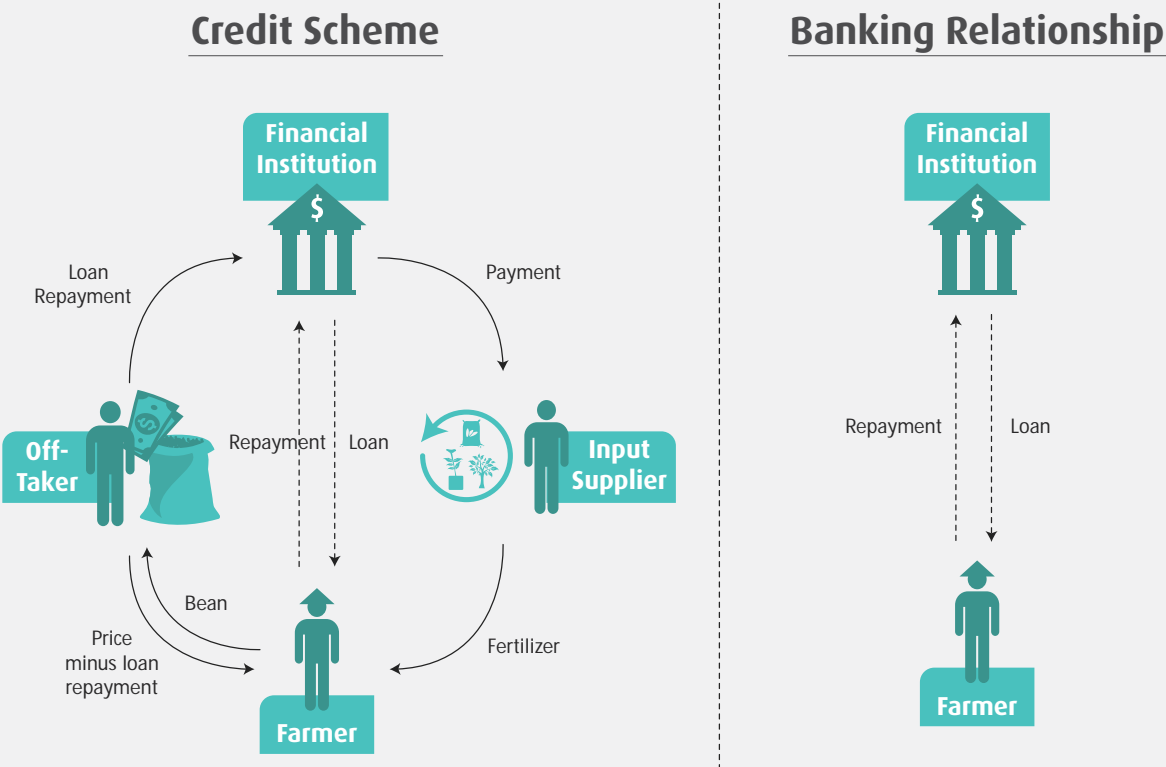


Figure 41: Credit Schemes vs. Direct Banking Relationship

One of the biggest advantages of the credit scheme is that the lender/bank gets the loan repayment directly from the off-taker as long as the farmer sells to that particular off-taker. However, it makes the entire loan ecosystem more complex. If off-taker or input supplier personally know the borrower they can give a recommendation, which reduces

the risk significantly. Disadvantages are the workload and coordination. In a pure banking relationship, the bank just provides money and the borrower pays it back. Recommendations can be designed into the product too, e.g. an agent model or credit approval process requirement.

Credit Scheme

- | | |
|--|---|
| <ul style="list-style-type: none">• Lender receives repayment of the loan from off-taker• Off-taker or input supplier could recommend the borrower to reduce risk• Off-taker could give a letter of "intent to purchase" | <ul style="list-style-type: none">• Work load and increased operational costs• Partnership agreements needed• Complex ecosystem• In-kind products involved• Side-selling still possible• Other stakeholders might force the bank to include non-bankable clients into the system• Farmer has to trust that the repayment is done properly |
|--|---|

Banking Relationship

Advantages	Disadvantages
<ul style="list-style-type: none">• Pure money transaction• Only two stakeholders (bank and client) involved with full control over the relationship• Not complex• Higher autonomy for the financial institution	<ul style="list-style-type: none">• Repayment must be collected from/paid by farmer• No risk reducing stakeholders involved

Table 14: Advantages and Disadvantages of Credit Schemes and Direct Bank Relationships

13.4. Production Cycles and Cocoa-Specific Factors

There are a number of cocoa-specific parameters to be considered in the product design; the most important one is the production cycle as seen in an earlier chapter.

The Sulawesi crop cycle illustrates the need for tailor-made finance products per region.

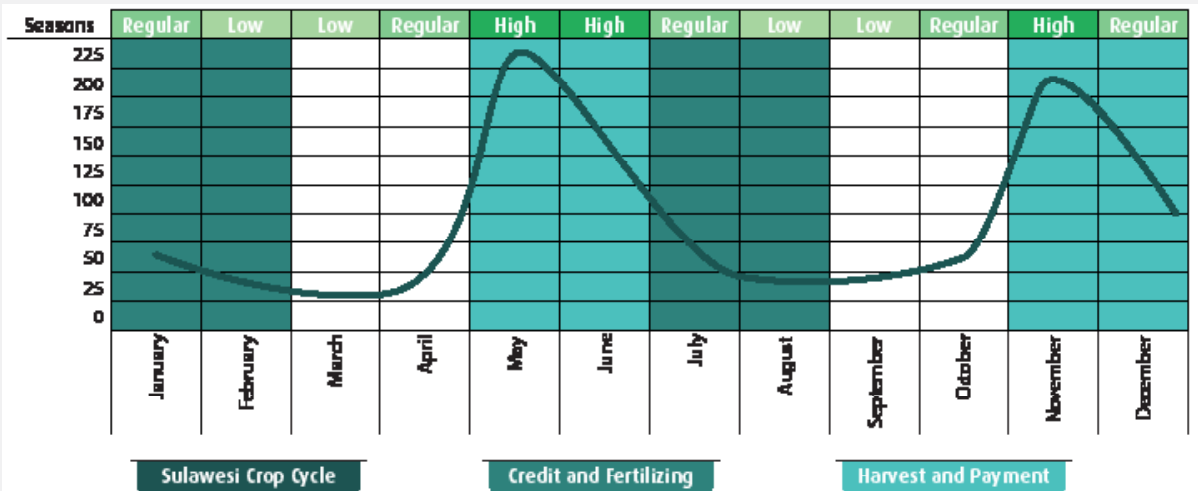


Figure 42: Crop Cycle Sulawesi

For example, disbursing a loan in April to be used for fertilizer would be the wrong timing for that particular region. It would not be the right time to purchase fertilizer.

Disbursing a loan and expecting the repayment in February or March would be the wrong product design, because the farmer does not have sufficient free cash flow in those months. May/June or November/December would be the better choice.

Disbursing loans for fertilizer with a maturity of 3 years would be a wrong choice, because the effects will be seen much earlier. Longer maturity means a higher risk; therefore it is unnecessary to have long loan maturity for fertilizer.

Using a 6-month maturity for a replanting loan would be a poor design, because it takes up to 3 years until new trees are yielding.

Designing a monthly repayment schedule for principal and interest should be reconsidered, because there are peak seasons with higher

free cash flows. As seen by the loans between collectors/traders and farmers, the high flexibility is appreciated. Still, the borrower should not forget his obligations; therefore a monthly payment of interests would keep monthly obligations for the farmer low, but ensures the monitoring and risk evaluation of the outstanding loan.

Most of the cocoa farmers have been doing so for years, but not in the case of farmer organizations. Here, new organizations can emerge and the startup risk is high.

In trade, one of the profit drivers is the turnover rate. Selling an item 12 times a year with 10% profit each time is obviously better than selling only 2 items a year with 30% profit each. In agriculture this system does not work, since the land is “occupied” with the current production and only after harvest it would be possible to decide on future land use. In the case of tree crops this results mostly in the continuation of using the trees to generate income.

13.5. Pricing

Loans to cocoa farmers have to be commercially attractive. The pricing must be cost-covering. Risk-reducing measures, such as good loan analyses or strict repayment enforcement, have to be taken. Once again, this is tough, but fair.

The Nobel laureate in Economics, Stiglitz, and Weiss have shown that optimal interest rates exist. Interest rates that are too high only attract clients with higher risks, which is no longer optimal for a financial institution. Hence, it must also be in the financial institution’s own interest to keep an eye on risky interest rates. Interest rates that are too low does not promote higher profits.

In microfinance, the biggest incentive of a borrower for the repayment of a loan is future access to another loan. This is not an issue as long as previous loans were repaid as agreed in the contract. Reasons for that incentive, and this can be seen in the case of cocoa farmers too, is the lack of access to finance. So there is a big incentive not to risk that access.

For this the pricing must be reasonable, responsible and basically in line with the pricing for other products offered. Profit maximization objectives are not an option when providing services to the agricultural sector, because those expectations cannot be passed on to and earned at the farmer level. In the special case of lending to cocoa farmers, additional pricing components could reflect risk, e.g. through cash back incentive for excellent repayment (e.g. no single day in arrears) or lower interest rates for repeat loans. That assumes that the previous loan was repaid diligently, otherwise there should not be a repeat loan.

Penalties could be applied for late payments or occurring costs to seize collateral.

13.6. Islamic Financial Products & Profit Sharing Models

One of the biggest threats to banking is risk. Regulation tries to manage risks to keep the

stability of the financial system. In Islamic banking, risk can be an integral part of the financing through profit and risk sharing models. If not properly done, it is difficult to build a functioning finance system around the risk-sharing concept, especially with products where the financier bears risks according to his share of capital. Often, the opportunities to get a higher return than with interest bearing loans is left out of that discussion and only the worst case is seen.

Pure Islamic Banking requires an extremely good client analysis before any funds are provided, since the Al’Quran says: “And if the debtor is in a difficult situation, then grant him time until it is easy for him to repay, but if you remit it by way of charity, that is better for you if you did but know” (al-Baqarah 2:280). From the banking point of view, this passage means that in the worst-case scenario the debt should be forgiven. This might be true for financing among personal relationships, but it makes the professional financing business less attractive and can’t be meant for that.

There are a number of promising concepts to design Islamic products and close contracts, following Islamic financing principles with limited risk for the lender. These are both promises and contracts. Through unilateral binding promises a farmer could obligate himself to a certain action. The fulfillment of a binding promise is mandatory, both from legal and moral aspects. Contracts can be closed for trade or agricultural finance, e.g. *Murabaha* or *Muzara’ah*. For financial institutions, one of the most promising products with limited risk is *Murabaha*, also in combination with *Wakalah* (agent), *Kafalah* (guarantor) and *Rahn* (physical collateral).

Murabaha is a trade transaction (good for money, *Bai al-Mutlaq*) with a known margin. There is certainty regarding the price to pay. In the first step, a financial institution has to become the owner of a good (the one a farmer needs to finance anyway) and in the second step that good can be sold to the farmer with a margin. The margin cannot be linked to the

time. If the margin is 10% of the product cost, it doesn't matter if the repayment period is 5 or 12 months. The price can be due in full and immediately, in installments, or entirely at the end of a limited maturity. Step two cannot be executed before step one, since the financial institution wouldn't be the owner of the good to be sold. To reduce risks, unilateral promises in case the farmer decides not to close the contract after step one is done and agent contracts could be used. When it comes to *Wakalah*, in this case more specifically *Wakil-bil-Shira*, the financial institution assigns the farmer as the agent to the desired good, so that no uncertainty regarding characteristics appear.

With *Salam*, an agricultural crop could be purchased. The price is paid completely at the time of transaction, which is the delivery of the good/crop as agreed (time and quality). *Salam* could be used to finance working capital, but there are major price risks for a financial institution. In the end, what would a financial institution need the physical beans for anyway? *Salam* suits the mutual needs if farmer and off-taker are involved.

Moral collateral as described before can be used to incentivize the farmer's willingness to repay, but he should be reminded of loan repayment deadlines whenever possible.

To refinance farmer organizations, *Hawalah* might be used. A farmer organization with limited refinancing capacities can transfer liabilities to a financial institution and get the nominal value for further use. The risk of default/non-repayment remains with the farmer organization.

Agricultural contracts, where the harvest is shared between the partners, are *Muzara'ah*, *Musaqat* and *Mukhabarah*. In *Muzara'ah* (based on *Mudharabah*) the financial institution provides money or land. *Musaqat* (seeds provided by the farmer) and *Mukhabarah* (seeds provided by the land owner) are both based on *Mudharabah* and are risk sharing partnerships, where the loss is borne based on the capital share

of the venture. However, the author would not recommend the last option to be used to finance cocoa farmers. *Ijarah* seems inappropriate for most financing needs on a cocoa farm.

In *Istishna*, a good still to be produced is ordered. This could only mean the cocoa beans, but it is doubtful that those are meant and hence *Istishna* does not seem appropriate for cocoa farms and its capital needs. Other Islamic financial products like *Mudarabah* or *Wadiah* could be offered for funding/saving.

13.7. Credit Scoring

Micro-lending is a costly endeavor. Credit scoring can improve loan officer productivity and reduce transaction costs for the institution. Traditionally, finance institutions use this on a mostly subjective base, e.g. experience of the loan officer, repayment behavior of previous loans, experience of the client in his business, etc. However, statistical forecast models to quantify default risks also exist, using a mathematical formula with characteristics of future clients compared to previous experiences from similar past clients. Types of scoring include identifying the probability that a loan goes into arrears, an installment will be late, or the probability that the client applies for a repeat loan. To reduce the risk for a financial institution, obviously the first two goals should be addressed. The latter one helps more for pricing and customer value considerations.

Credit scoring can provide a benefit to any organization with a clear strategy for issuing a high volume of standardized, low-valued loans and a willingness to accept and manage the organizational change that scoring will bring.

If models with reasonable power can be developed to distinguish between high- and low-risk applicants, a scorecard can be an effective tool to speed up the processing of the highest and lowest risk applicants. It could also allow banks to set lending policy and pricing decisions according to risk. The scorecard does not replace loan officers and human judgment - it enables them to improve decision-making.

Credit scoring systems help to:

- Streamline the lending process;
- Improve loan officer efficiency;
- Increase the consistency of the evaluation process;
- Reduce human bias in the lending decision;
- Enable the bank to vary the credit policy according to risk classification, such as underwriting or monitoring some lower risk loans without on-site business inspections;
- Better quantify expected losses for different risk classes of borrowers; and
- Reduce time spent on collections, which in some markets claim up to 50 percent of loan officers' time

The development of a scoring model usually costs money and time. It has to be adjusted after being used for some time and verified if the assumptions were correct and improvements can be made. Scorecard management is a long-term process that must live well beyond the initial excitement of scorecard development and implementation. Whether or not data is the driver for scorecard creation, data is the long-term driver of scorecard success. Consistently collecting, storing, periodically monitoring scorecard data and other borrower information is essential to develop a proper and consistent scoring method. It will allow an institution to validate judgmental models, transform judgmental/hybrid models to fully statistical models, refresh and potentially improve predictability of statistical models, refresh and potentially improve the predictive power of statistical models, or develop models for additional segments.

Behavior scoring models, such as the model from the Entrepreneurial Finance Lab (EFL), intend to predict the willingness of the client

to repay the loan. The approach is highly interesting, especially for small and medium enterprises (SME), where collateral or credit history are often lacking. For very small loans the costs are still too high in relation to the loan amount. The test used by EFL evaluates the honesty of the potential client as well as other criteria.

13.8. Asset-Based Lending vs. Cash-Flow-Based Lending

Lending based solely on collateral, without taking the repayment capacity into consideration, is called asset-based lending. The loan is solely guaranteed with collateral and hence it is safe in most cases. Still, it is not clear how the loan is repaid over time (except the possibility to sell the collateral), since cash flow is not taken into account. Therefore, asset-based lending should not be the first priority for agricultural loans.

The better option is cash-flow-based lending, which is based on a loan analysis that calculates the repayment capacity of the farmer to make sure it is sufficient enough for the applied loan term and amount. If not, no loan or only a smaller loan amount is granted. In the best-case scenario, there would not be any collateral needed, because the client has sufficient free cash flow to repay as agreed. In practice collateral is still taken to stimulate the repayment behavior.

For cocoa farmers, only cash-flow-based lending should be used, even if there is a land certificate to back the loan with sufficient hard collateral.

14. DESIGN OF OTHER PRODUCTS

Financial institutions usually earn higher income with providing loans than with facilitating savings.

14.1. Savings

Financial institutions usually earn higher income with providing loans than with facilitating savings. Hence, excellent performing loan products must be preferred for profit-seeking reasons, but savings are still extremely important for minimum reserves and the ability to create scriptural money.

A target group with limited capacity and financial services experience might be in a situation where loans are provided too early. This risk could be priced, but from a banking perspective, a better option for those clients would be to give them more time to build up that capacity with risk free collection of savings. However, how can financial institutions design saving products and deliver them with low transaction and opportunity costs?

The most crucial characteristics of saving products are safety, liquidity, accessibility, costs, minimum requirements, and interests to be received. Nobody expects to offer financial services for free. For a target group like farmers, low minimum balances should be required and costs close to zero. To offer this, interest rates could be reduced to nearly zero as well. Additional services could cost extra, e.g. issuing an ATM card.

14.2. Payment Services, Money Exchange and More

Serving cocoa farmers means providing basic retail banking products with suitable modes of delivery in the beginning. Only when farmers are comfortable with and used to the basics, more advanced products can be offered. Therefore, the most important products are savings and loans. Of course, farmers are free to use additional banking services at normal costs.

15. MODES OF DELIVERY

The question is what modes of delivery are needed? The answer for the overwhelming majority of cocoa farmers is cash transactions, and to a fewer extent, transfers.

The question is what modes of delivery are needed? The answer for the overwhelming majority of cocoa farmers is cash transactions, and to a fewer extent, transfers.

Obviously, most of the cocoa farmers have their farms in rural areas and live close to their farms. Bank branches are rarely located close by, except for banks such as Bank Rakyat Indonesia, which has a dense network of branches and ATMs are often available. The lack of bank branches hinders farmers' access to a bank account and regular use of it. It also limits their ability to repay loans easily or use other financial services. Proper modes of delivery can make the delivery of financial products and services easier. Modes of delivery are:

- Bank branches
- Agents (e.g. money collection points like supermarkets, filling stations or cocoa traders)
- ATMs (At least for cash withdrawals. Deposit ATM exist, but a cost/benefit analysis has to be done. Agent networks look more suitable at first glance)
- Branchless banking through agents or mobile phones (depending on the availability of networks in the villages and the ownership or access to phones/SIM cards)
- Internet banking (but that requires devices and is not suitable for cash transactions)
- Cashless payment solutions (substituting cash transactions, but heavy investments are needed to replace cash)
- Mobile banking unit (e.g. car having a regular route)
- Collection services on demand (bank staff coming to collect savings/loan repayments)

Collection/pick-up services in particular could increase the farmer's willingness and discipline to save.

Two options are of particular interest: Branchless banking services and agent models.

In economics, an agent is supposed to act in the interest of a principal, because the actions of the agent cannot be completely monitored by the principal. In delivering financial products and services, agents could handle the provision of payment and saving services, e.g. in a supermarket, kiosk, filling station, and also handle loan provisions (or at least recommendations for it). This particularly makes sense if the agent is close to the target group and/or has a superior knowledge of the market, hence he could reduce the risk significantly. Provisions could be paid based on the repayment behavior, e.g. 3% of the loan amount for excellent repayment behavior and 0% in the case of arrears/default. This kind of model would allow the agent a risk-free income based on the fact that "the better the recommendations, the better the income".

This model would work for cocoa collectors/traders who have known their clients for years and have a fairly good idea of the production levels of the farmers and their economic and social situation. Still, if those collectors/traders have their own lending business, they most probably won't act as agent for a financial institution because it would destroy their own supply chain and business.

16. BUSINESS PLAN

The loan size to smallholders is usually not very high. Availability of data, e.g. through the program management software CocoaTrace, provide a fair idea about the production and sales of each individual farmer. A business plan increases in such a case only bureaucracy without a real added value. Each cocoa farmer should state what they need a loan for as well as how much and how they want to repay it. Based on the sector data of other cocoa farming clients, it is very easy to compare. This only works if there are a certain number of farmers with access to loans. If a pre-selection of farmers based on a scoring is done, our recommendation is not to ask for a formal business plan.



17. SMART CAMPAIGN CLIENT PROTECTION PRINCIPLES

Smart Microfinance is being fully transparent in the pricing and terms and conditions of all financial products.

Smart Microfinance is being fully transparent in the pricing and terms and conditions of all financial products. Smart Microfinance is working with clients so they do not borrow more money than they can repay or use products that they do not need. Smart Microfinance employs respectful collection practices and adopts high ethical standards in the treatment of clients. Smart Microfinance gives clients a way to address their complaints so they can be served more effectively. Smart Microfinance ensures client data remains private. Smart Microfinance protects clients, businesses, and the industry as a whole. Therefore, the following principles are some minimum standards to keep in mind when doing business with cocoa farmers and all other clients:

- **Appropriate product design and delivery:** Providers will take adequate care to design products and delivery channels in such a way that they do not cause harm to clients. Products and delivery channels will be designed with client characteristics taken into account.
- **Prevention of over-indebtedness:** Providers will take adequate care in all phases of their credit process to determine that clients have the capacity to repay without becoming over-indebted. In addition, providers will implement and monitor internal systems that support prevention of over-indebtedness and will foster efforts to improve market level credit risk management (such as credit information sharing).
- **Transparency:** Providers will communicate clear, sufficient and timely information in a manner and language clients can understand so that clients can make informed decisions. The need for transparent information on pricing and terms and conditions of products is highlighted.
- **Responsible pricing:** Pricing as well as terms and conditions will be set in a way that is affordable to clients while allowing for financial institutions to be sustainable. Providers will strive to provide positive real returns on deposits.
- **Fair and respectful treatment of clients:** Financial service providers and their agents will treat their clients fairly and respectfully. They will not discriminate. Providers will ensure adequate safeguards to detect and correct corruption as well as aggressive or abusive treatment by their staff and agents, particularly during the loan sales and debt collection processes.
- **Privacy of client data:** The privacy of individual client data will be respected in accordance with the laws and regulations of individual jurisdictions. Such data will only be used for the purposes specified at the time the information is collected or as permitted by law, unless otherwise agreed with the client.
- **Mechanisms for complaint resolution:** Providers will have timely and responsive mechanisms for complaints and problem resolution for their clients in place and will use these mechanisms both to resolve individual problems and to improve their products and services.



Ayo rawat kebun!

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Cover	: Indonesian rupiah placed amongst cocoa beans. Symbolic of the financial benefits from cocoa farming.
Photos	: Swisscontact Indonesia
Layout	: Swisscontact Indonesia

Swiss NPO-Code: The structure and management of Swisscontact conforms to the Corporate Governance Regulations for Non-Profit Organisations in Switzerland (Swiss NPO-Code) issued by the presidents of large relief organisations. An audit conducted on behalf of this organisation showed that the principles of the Swiss NPO-Code are adhered to.

ZEWO-Gütesiegel: Swisscontact was awarded the Seal of Approval from ZEWO. It is awarded to nonprofit organisations for the conscientious handling of money entrusted to them, proves appropriate, economical and effective allocation of donations and stands for transparent and trustworthy organisations with functioning control structures that uphold ethics in the procurement of funds and communication.

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