Access to Finance for Cocoa Farmer in Indonesia

Report and first conclusions of the Agribusiness Financing Facility (AFF) integrated in the Sustainable Cocoa Production Program (SCPP) in Indonesia

26 May 2015
About Swisscontact

Swisscontact was established in 1959 by representatives of the Swiss private sector and academia with the aim to promote sustainable economic, social and environmental development by supporting people to develop the skills they need to contribute to local commercial life. Presently, Swisscontact is working in about 30 countries, implementing around 100 projects.

For over fifty years, Swisscontact found that people possessing relevant market skills are those who have the greatest capacity to succeed in, and help transform, local economies. As an organization, Swisscontact is best known for its training programs that provide rural producers, micro and small business owners, young entrepreneurs, and women, with the capacities to improve their livelihoods and incomes. Swisscontact believes that education, training, and skills development - especially in good agricultural practices in rural areas in developing countries - have the greatest potential to address issues related to food security, health and nutrition, as well as community and economic development.

Swisscontact is headquartered in Switzerland and has been engaged in Indonesia since 1972, conducting four to five large projects yearly with an overall volume of around USD 10 million per year. Swisscontact maintains offices in Medan, Jakarta, Bali and Makassar.

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About SCPP

The Sustainable Cocoa Production Program (SCPP) is a large public-private partnership in Indonesia between Swisscontact and the Swiss State Secretariat for Economic Affairs (SECO), the Sustainable Trade Initiative (IDH), the Embassy of the Kingdom of the Netherlands, the International Fund for Agricultural Development (IFAD), and the Millennium Challenge Account Indonesia (MCA-I) with current funding approved for the period from 2012 to 2018. At national level SCPP works with the Ministry of Home Affairs, while its private sector partners are ADM Cocoa, Barry Callebaut, BT Cocoa, Cargill, Ecom, Mars, Mondeléz International and Nestlé.
By implementing effective development strategies SCPP enhances the economic, social and environmental sustainability of cocoa production. The program is designed to improve the well-being of 90,000 smallholder cocoa families, increase productivity, meet the demand and quality standards of the cocoa industry, as well as to increase income and support job creation in the cocoa sector in 29 districts across 7 provinces in Sumatra, Sulawesi, and East Nusa Tenggara regions.

The Program introduced a holistic approach to foster an improved competitiveness of the Indonesian cocoa sector, which involves:

1. Farming good practices and technology transfer system;
2. Nutrition and gender sensitivity integration;
3. Farmer organization, market access and certification;
4. Integrated agribusiness financing;
5. Stakeholder management and networking platforms.

About the Agribusiness Financing Facility

The Agribusiness Financing Facility (AFF) is a subcomponent of SCPP with the objective to increase Access to Finance (A2F) for cocoa farmers in Indonesia. With better A2F it is expected that farmers can purchase better agri-inputs, which leads to the overall program objective of increasing the income of cocoa farmers households by 75%.

As outcome is expected that bankability of farmers is improved and the finance service providers’ understanding of the farmers and their organizations is increased. This means that appropriate lending schemes are developed and implemented by financial service providers and farmers and farmer organizations do have access to both loans and savings. Furthermore are Business Development Service (BDS) providers enabled to provide sector specific services to the cocoa sector. For this an effective collaboration and institutionalization is necessary at sector level. Knowledge on sustainable, efficient and effective supply chain approaches have to be developed and shared, of which the present report is part of.

Outputs are therefore strengthened structures and functions in the cocoa market, supported institutions for cocoa development as well as strengthening national and international stakeholder exchange and learnings.

The particular approach includes demand and supply side activities: Financial Literacy Training to cocoa farmers to train them about planning and record keeping, understanding of bank’s expectations and why to repay loans as well as the promotion of savings, which is deemed as the most suitable tool for cocoa farmers. Accumulation of own funds reduces risks for farmers and financial institutions significantly. AFF trains financial institution on the cocoa sector and about cocoa financials to enable banks to understand the cocoa sector better and to allow them to develop more appropriate, commercial products. Only with a profit incentive financial institutions will stay long term in the market to serve cocoa farmers as an attractive target group. Value chain finance is elaborated. The organizational capacity of farmer organizations is strengthened to act for the benefit of its members. Other activities facilitate sector collaboration, eases loan analyses through data and provide learnings about Cocoa Finance to stakeholders in Indonesia and worldwide.
Content

About Swisscontact........................................................................................................................................ i
About SCPP.................................................................................................................................................... i
About the Agribusiness Financing Facility .................................................................................................. ii
Content ............................................................................................................................................................ iii
Introduction ................................................................................................................................................... 1
  Summary ...................................................................................................................................................... 1
  SCPP Monitoring and Result Measurement (MRM) ...................................................................................... 2
  CocoaTrace - Program Management and Cocoa Value Chain Software.................................................... 2
Cocoa Farmer Household Assessment in SCPP .............................................................................................. 3
  Cocoa Farmer Demographics ..................................................................................................................... 3
  Poverty Scorecard ..................................................................................................................................... 5
  Cocoa Farm Specifics ................................................................................................................................. 7
  Categorization of Cocoa Farmers ................................................................................................................ 8
  Assessment-Based Tailor-Made Capacity Building .................................................................................... 10
  Farm Income and Crop Cycles .................................................................................................................. 13
GFP Baseline Assessment .............................................................................................................................. 14
  Loan Evaluations ..................................................................................................................................... 15
  Saving Behavior ........................................................................................................................................ 25
  Data on Bank Accounts ............................................................................................................................ 28
  Influence of Cocoa Farm Gate Price .......................................................................................................... 31
  Land Certificates ...................................................................................................................................... 33
  Additional Income to Cocoa ...................................................................................................................... 35
  About Interest Rates ................................................................................................................................. 37
  Unsubsidized Fertilizer Perception ............................................................................................................. 39
  Financial Information and Perception ....................................................................................................... 40
Improved Access to Finance – Bottlenecks and Interventions .................................................................... 46
  Market Overview ...................................................................................................................................... 46
  Interventions ............................................................................................................................................... 46
  Final remarks .............................................................................................................................................. 49
Introduction

Summary
Lack of data is one of the bottlenecks for financial institutions and development organizations. Through an advanced program management database, Swisscontact’s Sustainable Cocoa Production Program (SCPP) is able to identify critical and interesting data relations. Baseline data and first conclusions of the Agribusiness Financing Facility (AFF) are summarized in the present report.¹

The report gives an insight in the wealth of data SCPP has and it is just a scratch on the surface. Much deeper (and statistical) analyses could be done. The sample size of the report is 8,067 farmers, out of the more than 50,000 farmers included in the program by early 2015.² All were participants of the Good Financial Practice (GFP) training provided by SCPP (55.5% female, 44.5% male). The financial literacy training should be attended by the household member, who mainly handles the money in that household and focused on planning and record keeping, loans and its requirements and obligations as well as the promotion of savings as a tool to have “sufficient large lump sums” for planned or unplanned expenses and/or investments.

As general conclusion it can be shown, that overall Access to Finance is still low for Cocoa Farmers. 35.29% of the farmers are financially included, whereas 30.83% have savings, while 9.78% have formal loans from banks and cooperatives. Both numbers contain the 5.32% of farmers, having both savings and loans.

¹ Please feel free to contact MRM-SCPP@swisscontact.org if you have specific analytical wishes. We will see how to include them in one of the next reports.
² All data from Swisscontact’s Sustainable Cocoa Production Program internal management information system as per 6 May 2015
SCPP Monitoring and Result Measurement (MRM)

One of the advantages of SCPP compared to other programs is its wealth of data. SCPP collects quantitative and qualitative data from all in the program participating farmers on various topics (Good Agricultural Practices, Nutrition, Finance, Post-Harvest handling, etc.) before or during the first trainings (baseline survey), using mobile applications from which data are uploaded directly to the SCPP program management database called CocoaTrace. There the data are real-time available to private sector partners, donors and SCPP staff. To measure improvements, regular surveys (post-line) are conducted. At least 10% of all farmers are surveyed each year.

For the present baseline assessment, 8,067 farmers where surveyed (and trained in financial literacy) and those financial questionnaire data were combined with farmer data about Good Agricultural Practices. The data were collected between September 2014 and May 2015. It takes about 30 minutes per farmer and provides SCPP sufficient information to learn about the farmer’s situation and develop a proper approach to improve access to finance on a large scale.

CocoaTrace - Program Management and Cocoa Value Chain Software

CocoaTrace is a cutting-edge application used to collect, evaluate, illustrate and report relevant data from every smallholder farmer household involved in SCPP. The application includes important information such as farmer and household’s demographic data and every cocoa orchard, the number of cocoa trees, productivity, prevailing pests and diseases, application of best practices, number of trainings and training days, maps containing farm locations, buying stations, and so on. The application is also equipped with various formulas to analyze baseline and survey data and present it in the application dashboard allowing users to quickly read farmer’s statistics.

In addition to its use described above, CocoaTrace can be used for internal control within the certification system. Farmers will benefit of a higher level of ownership in data produced and offering their cocoa at a premium price – ultimately reimbursing their efforts in improved farm management and full transparency and traceability of cocoa production. The application also can be used for a number of other purposes such as to create a more efficient farmer’s business analyses when they apply for a loan, calculate efficient use of agricultural inputs or facilitating audits and program evaluations. When fully integrated with the farmer organizations and supply chain partners, CocoaTrace can help farmers to achieve a sustainable production with a better price to improve their livelihood.

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3 CocoaTrace is developed by PT Koltiva, an Indonesian software startup supported by SCPP
Cocoa Farmer Household Assessment in SCPP

Cocoa Farmer Demographics
The average age of cocoa farmers participating in SCPP is 43.4 years. The life expectancy in Indonesia is 69 years for men and 73 years for women.\(^4\)

37.10% of the farmers have elementary school finished, while only 2.57% of the farmers did not go to school at all.\(^5\)

\(^5\) For 4.28% of the farmer no information regarding school attendance is available.
The gender of the registered farmers, who are participating in SCPP’s Good Agriculture Practice (GAP) training is as follow. Over the regions, there are 81.3% male participants and 18.7% female.

![Gender Chart]

The Good Nutrition Practices (GNP) Training is with 80% participation mainly attended by women, but also with big regional differences.

![Gender Nutrition Participants Chart]
The gender of the participants in the Good Financial Practice (GFP) training is more equal, with large differences across the provinces. While in South-East Sulawesi 76.8% of the participant were women, in Central Sulawesi the vast majority where men.

![Gender Financial Literacy Participants](chart.png)

**Poverty Scorecard**

SCPP uses the latest update of [Progress out of Poverty Index](/progress-out-of-poverty-index) (PPI) developed by the Grameen Foundation and recommended by the Committee on Sustainability Assessment (COSA). By collecting data using simple questionnaires, SCPP estimates the cocoa farmer household’s likelihood of having income per household member per day below the national poverty line (7,893 IDR/day) and two international poverty lines of 1.25 USD/day or 2.50 USD/day.

More than 60% of the farmer households live on less than 2.50 USD/day (headcount). There is obvious a direct relation between family size and income per person. The average farmer household has 4.2 members. The data below show that e.g. in Aceh 9.3% of the cocoa farmers and their household members live from less than 1.25 USD/day and another 47.3% from between 1.25 to 2.5 USD/day.

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6 Actually the word used is “expenditure”, but we deem the word “income” as more relevant.
While there is only a small number of single households participating in the program (6.8%) most of the households consist of 4 (22.9%) or 5 (22.7%) members.
Cocoa Farm Specifics

Most of the cocoa farms recorded are medium sized (47.6%). 60.7% of the farms are larger than one hectare. The average farm size is 1.04 hectare per cocoa farmer household.

As expected, the vast majority of the farms consist of productive trees (67.3%), while the 12.9% old trees bear sufficient potential for replanting and an increasing production.

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7 This number differs slightly from the categorization later, because of different sample sizes (GFP: 8,067 farmers vs. overall data from 50,000+ cocoa farmers).
Categorization of Cocoa Farmers

One of the most important outcome of our data analysis is the categorization of farmers into professional, progressing and unprofessional with subcategorizing them to small, medium and large in terms of farm size. This leads to different approaches in targeting those farmers, especially in the sense of formal Access to Finance. Unprofessional farmers produce less than 500 kg dry cocoa beans per hectares. They usually have sufficient options to increase production with proper pruning and sanitation. There is simply no need yet to spend money on fertilizer. It would be cheaper and hence more profitable for them to go every single day to the farm for regular maintenance. For progressing and professional farmers the situation looks different. They could achieve much better production with better planting material or better farm inputs as their yields prove that basic agriculture practices are applied. For them Access to Finance is crucial.

The majority of farmers have a medium sized farm (49.39%) and many do have small ones (39.67%) and only 10.94% are considered as large farmers. 8.78% of the farmers are considered as professional and 35.74% as progressing. There is a lot of potential to support unprofessional farmers, bringing them to the progressing category.\(^8\)

\[
\begin{array}{|c|c|c|c|c|}
\hline
\text{Land Size} & \multicolumn{1}{|c|}{\text{Ha}} \\
\hline
\text{Large} & 2 \text{ or more} \\
\text{Medium} & 1 \to < 2 \\
\text{Small} & < 1 \\
\hline
\end{array}
\]

By definition professional farmers do have a higher production per hectare than an unprofessional farmer. Therefore, they have a higher cash flow per hectare and should for loan business be preferred over unprofessional farmers.

\[
\begin{array}{|c|c|c|c|c|}
\hline
& \text{Unprofessional} & \text{Progressing} & \text{Professional} & \text{Total} \\
\hline
\text{Small} & 20.12\% & 14.59\% & 4.96\% & 39.67\% \\
\text{Medium} & 28.64\% & 17.42\% & 3.33\% & 49.39\% \\
\text{Large} & 6.72\% & 3.72\% & 0.49\% & 10.94\% \\
\hline
\text{Total} & 55.48\% & 35.74\% & 8.78\% & 100.00\% \\
\hline
\end{array}
\]

\(^8\) The difference of large farmers in the table (10.94\%) and the chart above (13.1\%) come from different sample sizes (GFP: 8,067 farmers vs. overall data from 50,000+ cocoa farmers).
Professional Cocoa Farmers have 17.97% more trees per hectare (860 vs. 729) and a 4.05 times higher yield per tree (1.50 kg/tree vs. 0.37 kg/tree) compared to unprofessional farmers, leading to 4.8 times higher production per hectare (1,293 kg/ha vs. 267 kg/ha).

It also can be seen, that the top 10% of the farmers have with in average 1,177 kg/ha a much higher farm yield than the bottom 10% with just 205 kg/ha.
Assessment-Based Tailor-Made Capacity Building

As conclusion, the following training and access to finance needs can be summarized:

<table>
<thead>
<tr>
<th>Size</th>
<th>Category</th>
<th>Situation</th>
<th>Training Need</th>
<th>Access to Finance</th>
<th>Loans</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small</td>
<td>Unprofessional</td>
<td>Needs more knowledge, little cash flows from cocoa</td>
<td>GAP, Financial Literacy</td>
<td>Starting with smaller Savings for small agro-input purchases (and apply GAP)</td>
<td>Not creditworthy, also not with collateral, insufficient cash flow, high risk, doesn’t understand cocoa business</td>
</tr>
<tr>
<td></td>
<td>Progressing</td>
<td>Shows acceptable yields, production has potential to increase (depends either on GAP or on agro-inputs), land size just too small</td>
<td>GAP, Financial Literacy</td>
<td>Smaller loans for Agro-inputs, rehabilitation, savings for agro-inputs</td>
<td>Considered as potential loan client for very small loans, yield to be increased</td>
</tr>
<tr>
<td></td>
<td>Professional</td>
<td>Knows how the business works, land size just too small, with more land, economic situation could be improved a lot</td>
<td>Financial Literacy, Business Training</td>
<td>Loan for smaller pieces of land, ca. 0.5ha (also used as collateral), savings</td>
<td>Considered as good loan client, but with limitations because current land size cash flow</td>
</tr>
<tr>
<td>Medium</td>
<td>Unprofessional</td>
<td>Needs more knowledge, little cash flows from cocoa, land size could support an acceptable income</td>
<td>GAP, Financial Literacy</td>
<td>Starting with smaller Savings for small agro-input purchases (and apply GAP)</td>
<td>Not creditworthy, also not with collateral, insufficient cash flow, high risk, doesn’t understand cocoa business</td>
</tr>
<tr>
<td></td>
<td>Progressing</td>
<td>Shows acceptable yields, production has potential to increase (depends either on GAP or on agro-inputs), land size is an issue</td>
<td>GAP, Financial Literacy</td>
<td>Smaller to medium loans for Agro-inputs, rehabilitation, savings</td>
<td>Considered as potential loan client for small to medium loans, yield to be increased</td>
</tr>
<tr>
<td>Size</td>
<td>Category</td>
<td>Situation</td>
<td>Training Need</td>
<td>Access to Finance</td>
<td>Loans</td>
</tr>
<tr>
<td>--------</td>
<td>------------</td>
<td>---------------------------------------------------------------------------</td>
<td>-------------------------------------------</td>
<td>-----------------------------------------------------------------------------------</td>
<td>-----------------------------------------------------------------------</td>
</tr>
<tr>
<td></td>
<td>Professional</td>
<td>Knows how the business works, knowledge to be transferred to new land</td>
<td>Financial Literacy, Business Training</td>
<td>Loan for medium sizes of land, 0.5 to 1ha (also used as collateral), savings</td>
<td>Considered as good loan client.</td>
</tr>
<tr>
<td>Large</td>
<td>Unprofessional</td>
<td>Needs more knowledge, little cash flows from cocoa, although land size would be sufficient to have a good income</td>
<td>GAP, Financial Literacy</td>
<td>Starting with Savings for agro-input purchases (and apply GAP)</td>
<td>Not creditworthy, also not with collateral, insufficient cash flow, high risk, doesn’t understand cocoa business</td>
</tr>
<tr>
<td></td>
<td>Progressing</td>
<td>Shows acceptable yields, production has potential to increase (depends either on GAP or on agro-inputs), land size is good</td>
<td>GAP, Financial Literacy</td>
<td>Smaller loans for Agro-inputs, rehabilitation, savings</td>
<td>Considered as potential loan client for medium loans, yield to be increased</td>
</tr>
<tr>
<td></td>
<td>Professional</td>
<td>Knows how the business works, knowledge to be transferred to new land</td>
<td>Business Training, Farm/Staff Management, Financial Literacy</td>
<td>Loan for land, 1ha (also used as collateral), savings</td>
<td>Sufficient cash flows / income, considered as very good loan client</td>
</tr>
</tbody>
</table>
The following chart type shows under-/overrepresentation of respondents compared to their overall representation in the data sample. As example: If 4.3% of all farmers have a university degree (as it is), but 8.6% of the farmers with university degree had a formal loan, than they would be 100% overrepresented in access to formal loans. This gives a much better idea about the real situation than absolute numbers.

Looking at education related to the classification as professional farmer returns a clear picture: As better the education, as more likely the probability to be a professional farmer. Farmers with university and senior high school degree are significantly overrepresented amongst the professional farmers. But also farmers without school attendance are overrepresented, whereas the sample size for university and no school attendance are rather low with less than 40 respondents each.

To confirm that, unprofessional farmers are analyzed too. This picture is much less clear. Farmers with university degree and with unfinished elementary school are at a much higher risk to be an unprofessional farmer. In case of farmers with university degree this might be a matter of not taking the cocoa business serious.
Farm Income and Crop Cycles

One of the conditions for program participation is that farmer households earn at least 50% of their income from cocoa. The income depends on several factors mainly related to production and price. Production depends on the application of GAP, agri-inputs, but also weather or pests and diseases. The price depends on the world market price of cocoa (in USD), exchange rate IDR/USD, quality, competition amongst traders/off-takers, distances, etc. A simple example calculation is shown in the table below.

<table>
<thead>
<tr>
<th>Revenue for 1 hectare</th>
<th>Example 1</th>
<th>Example 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production (kg)</td>
<td>500</td>
<td>1,000</td>
</tr>
<tr>
<td>Price (IDR)</td>
<td>30,000</td>
<td>30,000</td>
</tr>
<tr>
<td>Total Revenue</td>
<td>15,000,000</td>
<td>30,000,000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Costs</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Inputs</td>
<td>2,000,000</td>
<td>6,000,000</td>
</tr>
<tr>
<td>Labor</td>
<td>1,200,000</td>
<td>1,700,000</td>
</tr>
<tr>
<td>Total costs</td>
<td>3,200,000</td>
<td>7,700,000</td>
</tr>
</tbody>
</table>

| Profit from Cocoa farming | 11,800,000 | 22,300,000 |

Also important for a financial report are the different crop cycles in e.g. Sumatra and Sulawesi, showing that one specific product design might not be conform to the conditions in all regions. While in Sumatra there is on peak season, in Sulawesi there are peak and mid-season, with completely different cash flow patterns.
GFP Baseline Assessment

In the following provinces the data were collected:

<table>
<thead>
<tr>
<th>Province</th>
<th>Data Sample Provincial Distribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aceh</td>
<td>2445</td>
</tr>
<tr>
<td>Sulawesi Barat</td>
<td>1032</td>
</tr>
<tr>
<td>Sulawesi Selatan</td>
<td>3604</td>
</tr>
<tr>
<td>Sulawesi Tengah</td>
<td>88</td>
</tr>
<tr>
<td>Sulawesi Tenggara</td>
<td>895</td>
</tr>
<tr>
<td>Sumatera Barat</td>
<td>3</td>
</tr>
</tbody>
</table>
Loan Evaluations

45.61% of the cocoa farmers do have experience with loans from various sources, while 54.39% don’t have any loan experience.

The overall loan experience is largely equally distributed over the three professional categories, whereas professional and unprofessional farmers are slightly overrepresented with their loan experiences. The under-/overrepresentation is in an extremely low range of -1.64% to 1.31%, thus it is largely equal.
Women are significant underrepresented in accessing loans.

![Loan Experience Diagram]

Young people are largely over represented in access to loans, showing most likely larger financial needs in young years, but could also show less fear to use a loan to reach targets or fulfill wishes.

![Loan Experience Diagram]
From a banking point of view, not all loans are used wisely. The light orange bars below show the productive use of loans (whereas buying land depends on the situation) and the blue bars show non-productive use. Productive use should be preferred, since a loan costs usually interest, which have to be paid. School fees and daily expenses should not be financed by a loan. Never.

Most of the loans come from informal sources (blue bars), mainly from family and friends and traders. To a much lower extent loans come from formal sources (light orange bars), banks and cooperatives.
From all farmers with loan experience, 13.10% received a loan from a bank.

From all farmers, only 5.64% received ever a loan from bank, whereas currently 3.76% of the farmers have a loan outstanding with a bank.

As expected, the unprofessional farmers are underrepresented in having received loans from banks. Progressing farmers are even more overrepresented than professional farmers. This might be, because professional farmers have higher cash flows and thus might have less financial needs.
Women are underrepresented, but not as much as in the overall loan experience.

Interestingly farmers below the age of 30 are significant underrepresented in access to formal loans, while they were heavily overrepresented in the overall loan experience. This might have different reasons. One could be the lack of collateral (as shown later on the data of land titles), the other one mistrust towards young people.
As better farmers are educated, as less of them borrow money. Explanation for that might be that farmers with university degree might have higher incomes, if they have additional income, or the use of savings to smoothen consumption and absorb shocks.\(^9\)

Looking at formal borrowing, it can be said that as better a farmer is educated, as better his access to formal loans is.

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\(^9\) The percentage shown is the percentage compared to all farmers with the respective education. 45.37% of all farmers who did not finish elementary school, borrow money from formal and informal sources.
This illustrates the next chart, with a significant overrepresentation of better educated farmers having access to formal loans compared to a lower education.

**Formal Borrowers related to Education**

- University: 102.01%
- Senior High School / SMA: 35.38%
- Junior High School / SMP: 8.10%
- Elementary School (finished) / SD: -18.58%
- Elementary School (unfinished) / SD: -43.80%
- No School: 12.66%

Most of the farmers with loan experience have been having two loans so far, while there is a stable percentage of about 17% each with 3 or more loans.

**% of Farmers with number of loans**

- 1: 10.55%
- 2: 55.30%
- 3: 17.34%
- 4+: 16.82%
Two third of all farmers with loan experience have repaid a loan earlier than agreed (whereas loans from traders and family and friends might not have a fixed term anyway). This shows that farmers value flexibility in repayment terms.

Differences between traders and banks can be seen also in the time to disburse loans (where traders are much faster) and the need of collateral (where banks want to see almost always collateral).

The reason, why banks request (hard) collateral lays in the Indonesian banking regulation and the need to reduce losses through uncollateralized loans. For outstanding loans, banks have to build loan loss provision, depending on loan categorization (four categories for BPR/S, five categories for commercial banks), whereas short term loans could fall already after two months after a loan is due into the loss
categorization with the need to build 100% loan loss provision.\textsuperscript{10} Loan Loss Provision is a direct loss position in the profit and loss statement, thus it reduces the profit (or increases losses) of a financial institution. 30% to 80% of the value of provided collateral can be deducted from the outstanding amount, if stated in the regulation as collateral and depending on the exact definition. No (hard) collateral means that no deductions can be made. However, the regulation does not require collateral, but without collateral, higher loan loss provisions have to be built in case of loans in arrears for a certain time. This shows two needs: First, a good loan analysis, and second (in case a loan enters into arrears), an efficient repayment collection mechanism or an easy to seize, valuable and easy to sell collateral for outstanding amounts in arrears so that a loan never enters into any category where high loan loss provisions have to be built.

Obvious traders do not have the same restrictions. Their advantage is the close relationship with the farmers in their regions, knowing not only the hard facts like production, but also the soft facts like character or family situation better.

![Collateral Needed for a Loan](image)

Cocoa farmers were asked, if they know the price of cocoa at the day of the survey and if yes, how much it is. The assumption is that they say the price they would get for their cocoa. There are huge differences, which could be because of quality (wet, dried, fermented) or location (collector, trader). Comparing the price (the farmers stated) in relation to loan amounts borrowed, surprisingly farmers with lower prices get larger loan amounts from any source than farmers who stated higher prices. It is unclear, why it is like that. The loan amounts were provided by the farmers as the last and/or current loan amount received.

Using data can show interesting correlations too, as shown in the chart below. Men get in average 16.31% higher loans than women. The breakdown of loans to women shows huge differences too. Professional female farmers get lower loan amounts than the average of women. This might be a matter of less needs or it is surprising. It can be seen that older women get higher loans than younger ones.
The lowest loans are disbursed in average by traders, while banks disburse in average larger amounts. There is no difference in borrowing between farmers with formal land title and without such a land title. This indicates that a land title is not crucial for borrowing (in general). However, hard collateral is needed to access formal loans (in particular).

Saving Behavior

45.27% of the farmers don’t save at all, while 41.11% save in cash and 13.62% save in kind or invest in another business. These latter two could be bricks, gold, chicken or others.

First indications are that farmers do use their income from cocoa for daily needs, due to the relatively regular income throughout the year, while savings are built with income from other crops, when farmers receive once or twice a year relatively larger amounts.
Reasons for not saving are:

60.91% of the farmers think, they are disciplined enough to save. But 46.48% out of those, do not have savings at all (28.31% of total), while 53.52% indeed do have some savings (32.60% of total). Out of the 39.09% who think they are not disciplined enough to save, 44.79% do have savings (17.50% of total).

Overall saving (formal and informal) is directly linked to education.
As higher the education, as stronger the overrepresentation in formal savings. This might be directly linked to income (assuming that higher educated people have a higher income), but more probable a matter of taking the decision to step in a formal bank to open a saving account.
Data on Bank Accounts

69.06% of the farmers don’t have a bank account. From the ones who have, 6.64% don’t use the account active.¹¹ Farmers with accounts do have them in Bank Rakyat Indonesia (BRI, 88.9%), Bank Negara Indonesia (BNI, 3.5%) and other institutions [7.6%, mainly cooperatives, Bank Danamon, Bank Central Asia (BCA), Bank Mandiri and Bank Muamalat].

Professional farmers are surprisingly significant underrepresented as account holders. It could be expected that they have higher cash flows and hence a different need of financial services.

¹¹ Defined as at least one transaction within the last 12 months
There is almost no gender difference in account holding.

Future money needs can identify possible products to be offered to cocoa farmers. Most of the farmers need money to pay school fees, for farm investments and for emergencies. The blue bars show the clear need for saving products, since those needs should not be financed through loans. Farm investments like fertilizer purchases could be financed through both, savings and loans.
The knowledge of interest rates and fees for formal saving accounts is low, with 76.43% of the farmers not knowing both. 55% of the farmers don’t know any of the two information.

Distance to banks related to account holding shows that distance is not a factor. Account holders living more than 10 km or more away are slightly overrepresented compared to the overall sample, while farmers living less than one km from a bank are slightly underrepresented.

Not surprisingly, 67.16% of the farmers live 3 km or more from a bank branch, whereas 35.74% live 10 km or more away.
Influence of Cocoa Farm Gate Price

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 prices while trading by investment funds tend to drive movement in the short-term. For Indonesia the exchange rate between IDR and USD have to be taken into account.

On micro level price factors are the distance and competition to and between traders, quality of the beans, price negotiation skills and post-harvest processing (mainly wet, dried, and fermented).

The chart below illustrates the high farm gate price farmers receive. It is significant higher than the farm gate price in African countries like Ivory Coast and Ghana, where prices are set by the government cocoa boards.

Source: BT Cocoa
As shown before, cocoa farmers stating the lowest prices, received the highest loan amounts. The price distribution itself is as follow:

![Price Distribution Chart]

Most interesting is that farmers with loan experience with traders get in average 12.95% higher prices than farmers with loan experience with banks (10.20% + 2.75%). The average price difference between farmers with loans from traders and farmers without loan experience is 13.16%. This would indicate that the thesis that the price of a loan is hidden in the purchase price, is wrong. It is unclear, why this is the case. Thinkable are higher prices paid to avoid side-selling and to ensure repayment of the loan, or a special relationship in the sense, that only good friends/clients, receive a loan (and higher prices). Noteworthy are also farmers who stated that traders are rich, get higher prices than farmers who don’t think so (difference 10.22%) and farmers with loan experience higher prices than farmers without loan experience (difference 4.88%). This might be because of tougher negotiations and higher self-confidence.
Less differences can be seen between men and women (whereas women get 2.26% higher prices), farmers who state that they are agreeing on the statement that it is better to sell wet bean, because they get their money quicker and farmers who say they need a loan compared farmers who don’t need a loan. There is almost no price difference between professional and unprofessional farmers and also not between farmers who are satisfied with their cocoa business and who are not satisfied. This is not conclusive and lays most likely in the measurement error.

<table>
<thead>
<tr>
<th>Price compared to average for different categories</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Men</strong></td>
</tr>
<tr>
<td>-0.41%</td>
</tr>
</tbody>
</table>

Land Certificates

Land certificates can be used as collateral to access formal loans. Thus, it is expected that if farmers have such a land certificate, they could offer valuable collateral to a financial institution, hence access to formal loans would be easier than without.

Of the farmers, who have answered the GFP questionnaire, 15.96% hold a notarial deed (BPN), compared to 21.6% of all (currently 50,000+) SCPP farmers. This difference will get smaller, as more data are collected.
Professional farmer having significant more often a formal land certificate than unprofessional farmers and women are significant underrepresented in that category.
Older farmer with an age of above 50 years have significant more often a formal land title. This could have various reasons. Either in earlier times land certificates were more common (e.g. through government registration programs) or those older farmers had more funds available to afford a land title. This might also explain, why younger farmers have significant less access to formal loans.

**Notarial Deed related to age**

<table>
<thead>
<tr>
<th>Age Range</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>29-</td>
<td>33.76%</td>
</tr>
<tr>
<td>30-39</td>
<td>3.67%</td>
</tr>
<tr>
<td>40-49</td>
<td>9.55%</td>
</tr>
<tr>
<td>50-59</td>
<td>12.11%</td>
</tr>
<tr>
<td>60+</td>
<td>28.49%</td>
</tr>
</tbody>
</table>

**Additional Income to Cocoa**

85.78% of the farmers do have additional income, mostly irregular (86.81% out of those with additional income). Regular income is usually salary from a regular employment, e.g. as a teacher. Irregular income is mainly day-labor income, but also income from other businesses and other crops.
Not surprising is that unprofessional farmers have a larger need of additional income, especially compared to professional and progressing farmers.

Women are slightly overrepresented in that category.
About Interest Rates

Of all farmers, 29.70% agreed on the statement that high interest rates are acceptable, as long as the farmer earns his money back. That has two implications: First, the business mindset, and second the price sensitivity.

Progressing farmers are most willing to pay higher interest rates, while unprofessional farmers have serious doubts on that.
Women seem to be more risk averse in that question.

Farmers with loan experience are much more open to the idea of high interest rates than farmers without loan experience.
Unsubsidized Fertilizer Perception

Many farmers in Indonesia are used to subsidized fertilizer, although not always available. Only 24.54% agree on the statement that applying unsubsidized fertilizer can be profitable too. We expected a relation between that statement and access to formal loans and indeed, while only 4.38% of farmers who disagree have ever had a bank loan, 8.13% of the farmers who do agree ever had one.

Professional farmers agree significantly more often on that statement. That might be, because they have usually more experience in fertilizer application than unprofessional farmers. Here lays potential for the promotion of fertilizer.
Women agree significantly less than men. This shows that women need to be included strongly in fertilizer promotion. More educational work can be done to explain the benefits of unsubsidized fertilizer, even if it is more expensive than subsidized one.

Financial Information and Perception
Part of the baseline GFP questionnaires were some perceptive questions to understand the farmers better. 67.37% think that profit sharing is better than paying interest on loans. This could be because of the religious background, where interest are forbidden (although often applied) or a risk matter. Especially for professional cocoa farmers with a much higher production than the average, profit sharing has less advantages, although the profit share itself was not asked. Here different shares could be realized.
Some more perceptions are that most of the farmers think that they are good loan clients (79.08%) or that farmers with a loan from a trader have to sell their beans to that particular trader (65.51%). Only half of the farmers (52.10%) think that they can pay all expenses with their cocoa income, while 97.04% think that cocoa is a profitable business.

86.25% of the farmers trust banks to keep their money save. This shows, that it will be a challenge to reach all farmers with access to formal savings. 80.49% of the farmers trust their group members and 60.41% would repay a loan for a group member. This is an interesting number for a possible group loan design.
Asking farmers, if there are many cocoa farms for sale is interesting to get a feeling for the situation in the regions, but also for the individual farmers, assuming that a farmer thinking about selling his farm would more likely agree on that question. 16.28% of the farmers say so.

Central and South-East Sulawesi have to be monitored closely for two reasons: First, there seem to be comparable more farms for sale, indicating that farmers are not satisfied or in the need of money. Second, this give professional farmers in that regions the opportunity to buy an additional piece of land. For Central Sulawesi the sample size is still very small (88 questionnaires), thus the result can be only a first indication.
In case of emergencies, farmer think that farm inputs can be easily postponed (42.04%), followed by education expenses (34.63%), but also health care and food expenses. Since those are typical expenses for which savings can be built, there wouldn’t be need to postpone them.

Of the farmers who said that loan installments could be postponed (2.65% of all respondents), the overwhelming majority of 86.63% have loan experience. This indicates that financial institutions were not strict enough with the collection of repayments or that informal loan sources were much less concerned with strict repayment. However, for a financial institution this answer is not acceptable and for own loans, strict repayment has to be enforced.
Not surprising, money for emergencies come from family, friends and savings, whereas a small number of farmers would harvest their pods earlier and sell them to have money for an emergency. It should be clear that this might have effects on quality and price of the beans.

![Money for urgent expenses comes from (\%)](image)

Of the farmers, who asked family and friends for money, 43.23% had own money and with 32.04% even liquid and easily available. This means that they did not want to use their own savings or the emergency expenses were larger than the savings they had.

![Savings of farmers, asking family and friends in case of emergency](image)
The value per hectare cocoa farm is distributed as follow (whereas values until 150 million IDR are considered as reasonable per ha)\textsuperscript{12}:

- 24.54% of the farmers think that the value of their cocoa farm is more than 150 million IDR per hectare. That seems to be unreasonable. 11.18% of the farmers don’t know the value of their cocoa farm.
- 83.24% of the farmers do own a mobile phone or have access to one. If literate, this would be a huge potential for branchless banking products or other financial services offered through mobile phones, but also could be used for educational purposes, like occasional SMS on certain agricultural topics or in the case of smart phones the streaming of videos are the use of special apps/games for better cocoa farming. Especially in the case of USSD\textsuperscript{13} services, virtual SIM-cards could be used. At the moment the Indonesian landscape isn’t at this point.

\textsuperscript{12} The percentage till 150 million IDR sums up to 100%. The more than 150 million IDR and “Don’t know” use a larger baseline.

\textsuperscript{13} Unstructured Supplementary Service Data
Improved Access to Finance – Bottlenecks and Interventions

Market Overview
Lending to the agricultural (livestock, forestry and fishery) sector accounts for 5.97% of the total lending in Indonesia\(^\text{14}\), dominated by loans to large state-owned private entities. Average interest rates are 12.11% (loans from commercial banks) resp. 33.58% (loans from rural banks). The Non-Performing Loans (NPL) in the agricultural sector stand at 4.2%.\(^\text{15}\) Although charging in average relatively high interest rates, rural banks lend 6.94% of their portfolio to the agricultural sector.

Compared to the overall lending to the agricultural sector, cocoa farmers are with currently 3.76% outstanding loans from commercial banks slightly underrepresented. The most probable reason are better business opportunities in other sectors, such as retail or services. Other reasons might be severe concerns of bank to target cocoa farmers due to the inherent business risks, distances/operational area and sector knowledge.

Interventions
Interventions to tackle the challenges of A2F for cocoa farmers are often interlinked. Banks in Indonesia are interested in financing the cocoa sector, but lack knowledge of the sector in general and on financing opportunities in particular. This gap can be closed.

Capacity Building to Farmers and Financial Institutions
Better knowledge of the cocoa sector is needed for banks and proper business cases have to be illustrated. Capacity has to be built through cocoa sector training to financial institutions. Understanding the cocoa sector is an important precondition to develop appropriate products and evaluate risk accordingly. For this Swisscontact has developed training material and learnings of the sector, written from a banker’s point of view. While trained in the beginning through specialized Cocoa and Finance staff from Swisscontact, at a later stage BDS provider will be trained to deliver that three day training to all relevant staff in interested financial institutions, starting from loan officers, credit managers, auditors, risk managers, branch managers and others.

Sector specific data are provided to banks. This includes data on crop cycles or seasonal cash flows, which items to finance (and which not), farmer data of farmers who have expressed interest in receiving a loan as well as possible collateral to be provided.

SCPP provides financial literacy training to the member of the cocoa farmer household, who handles the finances. Objective of that training from bank point of view is in particular to reduce the risk and workload for financial institutions. Emphasized are planning and record keeping (for knowing better the financial needs and have supporting documents for loan analyses), loans (especially what a bank expects and why it is important to repay a loan, as it was agreed in the contract) and the promotion of savings as one tool to accumulate “usable large lump sums” for productive or non-productive objectives. Farmers learn to identify financial needs in advance and build up funds for emergencies, health care or other, foreseeable expenses.

\(^{14}\) Bank Indonesia, Indonesia Financial Statistics, I.4, March 2015
\(^{15}\) Bank Indonesia, Indonesian Banking Statistics Vol. 12, No. 9, August 2014
Linking Farmers to Bankers

Bank staff is invited to the villages to participate in the financial literacy training to farmers for socialization and to present their products, as well as answering questions of farmers. This approach works surprisingly well and up to 50% of the farmers participating in the training use the opportunity to open saving accounts in that moment and to get in contact with responsible bank staff. To extend that approach, banks are invited to special events like farmer field days and for the future competitions bankers vs. farmers might break the ice, e.g. with money counting contests or cocoa pod open contests. Half-day trainings of bank staff on a cocoa farm seems to be a good way to increase the practical agricultural knowledge of staff. This could be done through farmer organizations as well as through interested farmer groups.

Business Cases

Business cases for banks include the mentioned concentration of the top 10% of the farmers to finance e.g. agri-inputs, but also land financing as the most promising financial product for cocoa farmers and banks. Assuming that professional farmers can replicate their current production level on an additional piece of land, the respective land title could serve as collateral, loan sizes are large enough to reduce (relative) operational costs and that the cash flow from the existing and new piece of land ensures the repayment of a loan, land financing as a commercial attractive product. Challenges are still raising land prices in Indonesia and the existence of land title.

Other business cases include financing to farmer organizations, but also offering in-kind or saving products to farmers as well as financing cocoa traders or other, larger off-takers.

Categorization and Scoring

Apparently farmers weren’t categorized systematically into professional, progressing and unprofessional in the past, leading to lost potential in providing loans to especially professional and progressing farmers with high cash flows than unprofessional farmers. For large scale use data need to be available. Swisscontact has a program management database, from which such professional farmers can be identified. SCPP experience shows that banks are highly interested in such data, since this can reduce their risk exposure significantly. Our recommendation is to concentrate first on the top 10% of the farmers. Those have the highest cash flows and hence a lower risk for financial institutions. After having sufficient experience and a better understanding, different target groups can be approached.

Although being in need to access loans, young farmers are (knowingly or not) neglected by financial institutions, missing a potential target group. Using existing data to pre-select farmers according to such a mentioned categorization could decrease the workload for financial institutions and make the target group cocoa farmer more attractive. Some testing of the preselection algorithm might be needed at a certain point in time to have a better outcome.

Another intervention will be the implementation of a scoring system. Although a first system could be introduced rather fast, fine-tuning will take time, since repayment behavior has to be considered and verified against certain farmer characteristics. The existence of data now can will lead to a much better prediction of repayments and risk.
Suitable Collateral
The gap between farmers with land titles and the requirement of banks for collateral needs to be addressed. Although banking regulation does not require collateral at all, banks are used to collateral to reduce default risk. One option would be the support of the land registration process to increase the number of farmers with (hard) collateral. Other collateral (in a wider sense) like cocoa beans could be considered of being valuable. With easy to seize, valuable and easy to sell collateral, potential arrears could be handled much better. For loans without needed collateral (those are sometimes offered, if the loan amount is below a certain limit), it would be psychologically desirable to ask for collateral, such as cocoa beans. This would make the farmer proud for being creditworthy, because he can offer collateral and it would make clear that a loan officer collects that collateral in case of non-payment. Banks in Indonesia accept off-taker letters as guarantee, stating that the crop will be bought, if certain minimum quality criteria are met. Providing such a letter would not be a risk for the off-taker, but could lead to significant better access to formal loans and has to be used. The government guarantee scheme Jamkrindo reduces risk for banks to 80% of the defaulting amount could be recovered through such a system. The danger is that financial institutions claim defaulting loans there, instead of collecting outstanding amounts. That could lead to the perception that loans don’t have to be repaid. We do not recommend other guarantee schemes or the provision of funds to financial institutions since this could delay a market based solution.

Not every farmers is eligible to receive a loan
One of the most important recommendations is that not all farmers need a loan to increase cash flows. To do so, foremost labor-input is needed, meaning to go every day to the farm for pruning and maintaining the trees. Especially the as unprofessional categorized farmers do need to apply Good Agricultural Practices first. There is no need to put those farmers into debt, since this would bear a major risk for both financial institutions and farmers. At a later stage Access to Finance is needed to purchase agro-inputs. Since banks like to make business with good clients only, the farmer could start with some savings to show his saving habits, his capacity to save regularly and his planning skills. For a professional impression, written records should be kept to make the loan analysis easier for a loan officer.

Branchless banking
The operational area of banks is limited and thus there is a certain travel time needed for either farmer to go the bank or the banks to go to the farmers. While this is acceptable for farmers applying for loan, it makes loan repayments and savings much more challenging. Ways have to be found to shorten the way, where financial transactions could be done. For a loan analysis this is challenging, since a loan officer should see the cocoa farm during an evaluation process. For loan repayments and savings, branchless banking products can be used. Both, branchless banking products (offered by banks) and e-money/mWallets16 (offered by mobile network operators or banks) exist in Indonesia. Especially the branchless banking products seem to be well designed.

16 Use of mobile phones as payment systems or saving tools.
Savings

While Access to Loans is still challenging because of various reasons, such as the absence of appropriate collateral and the bank’s perception that agriculture is a risky business, savings could play a crucial role in cocoa farmers’ financial management. Technically, a loan is nothing else than a future saving, whereas savings come with some advantages: There is no collateral needed (which most farmers anyway don’t have17), no interest to be paid, and no arrears possible. Every willing farmer could participate and even if funds are used for non-productive purposes, it is at least the farmer’s own money. Disadvantages are that a lack of discipline might hinder farmers to save (while loans are somehow a forced saving, since otherwise collateral might be lost), temptations to access the funds might be around, family, friends and neighbors might request funding for “emergencies” or money might get lost if not properly stored (e.g. in a rural or commercial bank) and most important, if used for productive purposes, a loan could increase the income of a farmer quicker than a saving, since the amount is faster available. The saving product design has to address behavioral bottlenecks.

Currently savings are based on voluntary actions. Motivating farmers to save regularly, e.g. through traders could lead to higher savings, providing the farmers with sufficient funds to purchase agro-inputs or getting at least some financial backup in case of emergencies. Explaining that farmers can be proud to save and that also small saving amounts will lead to the saving objective, is a must from all stakeholders in the value chain.

Using a cocoa bean trader as saving agents to collect savings and deposit them on individual farmers’ bank accounts or make a branchless banking deposit transaction is a promising intervention to increase savings amongst farmers. The biggest constraints are trust in the product/service, literacy to use it and the question why a trader should act as an agent. Specific incentives have to be set, e.g. commissions paid and/or the outlook to higher business volumes in the future. Farmers need a bank account (in a branch or branchless), what might bear costs. More important is that farmers must be motivated to save and the trader could function as easily accessible intermediary to do so.

Final remarks

All that interventions contribute to the increase of Access to formal Finance for cocoa farmers to achieve the overall program target: An increase of income from cocoa by 75%. Achieving that gives the farmers and their family members a better livelihood and ensures for the private sector partners sufficient supply of cocoa beans. More detailed or different analyses could be done, using existing data, like SCPP has collected it for program management and traceability.

Farmer organizations were not part of the analysis in that report. Particular learnings on business models for cooperatives (including loan business), options how to capitalize those farmer organizations and collaboration with commercial banks are shared separately.

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17 Only 21.6% of the cocoa farmers in Swisscontact’s Sustainable Cocoa Production Program (SCPP) do have a notarial deed, which banks in Indonesia consider as good (hard) collateral and has usually a higher value than e.g. other collateral like motorbikes with ownership certificates.