

Evaluation of UTZ in the Indonesian cocoa sector

Commissioned by
UTZ

March 2016

Aidenvironment
Barentszplein 7
1013 NJ Amsterdam
The Netherlands
+ 31 (0)20 686 81 11
info@aidenvironment.org
www.aidenvironment.org

Evaluation of UTZ in the Indonesian cocoa sector

Contents

| | |
|--|-----------|
| Executive Summary | 3 |
| Introduction | 7 |
| 1. Methodology | 8 |
| 1.1 Research questions and impact pathways | 8 |
| 1.2 Research methods - overview | 9 |
| 1.3 Research methods - details | 11 |
| 2. Indonesian cocoa sector | 13 |
| 2.1 Cocoa production, grindings and trade | 13 |
| 2.2 Cocoa value chain | 14 |
| 2.3 Production system | 15 |
| 2.4 Key stakeholders and sustainability programs | 16 |
| 3. Introduction to the cases | 18 |
| 4. Farm level: results and contribution | 20 |
| 4.1 Farm characteristics | 20 |
| 4.2 Access to training | 22 |
| 4.3 Impact pathway 1: Productivity | 25 |
| 4.4 Impact pathway 1: Social and environmental performance | 33 |
| 4.5 Impact pathway 2: Cocoa quality | 37 |
| 4.6 Impact pathway 3: Access to markets | 40 |
| 4.7 Motivation of farmers | 44 |
| 4.8 Conclusions on observed changes and UTZ contribution at farm level | 46 |
| 4.9 Spin-offs at farm level beyond the certified cocoa farms | 49 |
| 5. Sector level: results and contribution | 51 |
| 5.1 UTZ and sector transformation | 51 |
| 5.2 Conclusions on observed changes and UTZ contribution at farm level | 55 |
| Conclusions and recommendations | 57 |

Executive Summary

This report presents the results of the evaluation of UTZ in the Indonesian cocoa sector. It serves the dual purpose of proving the impact of UTZ at farm and sector levels and of creating a deeper understanding of how UTZ can improve its impact in the future.

Methods used

This impact evaluation focuses on the following research questions:

1. Does UTZ Certification contribute to increased productivity and quality?
2. Does UTZ Certification contribute to better prices, better market access and to improved income?
3. What is the added value of UTZ certification when embedded within existing interventions?
4. What is the added value of UTZ in sustainable sector transformation?

In order to answer these questions – and based on UTZ’s Theory of Change – four impact pathways were formulated on productivity (including social and environmental performance), cocoa quality, market access and sector transformation. For each of the impact pathways indicators were identified for output, outcome and impact level. These were the basis for data collection this evaluation.

The combination of qualitative and quantitative methods enabled us to identify plausible impacts and cause and effect relationships. The mixed methods research approach was based on qualitative methods, using Focus Group Discussions (FGDs) with certified farmers (2 per case) and Key Informant Interviews (KIIs) with individual program partners, cooperative management and extension staff. These sessions enabled us to evaluate perceptions on current farmer performance in comparison with performance before the program. They also enabled identification of plausible cause and effect relationships and of contributions by the programs and external factors. Finally, we were able to identify success factors and constraints on further improvement.

The outcomes of the structured farm surveys and field observations with certified and non-certified farmers were used to provide quantitative and semi-quantitative evidence to substantiate the outcomes of the qualitative methods. They also enabled performance comparison between certified and non-certified farmers. As the sample size was small, the outcomes of the surveys and observations should be considered as indicative. Nonetheless, the outcomes of the qualitative methods and the results of the quantitative data collected from the surveys were very consistent. The insights and trends are therefore highly plausible.

The evaluation took place in three locations: two in South-East Sulawesi and one in Aceh. In each case the certificate holder (two traders and one NGO/cooperative) had organized their certification program differently, often embedded in other non-certification related interventions.

Results

This evaluation collected highly plausible evidence that the UTZ certification programs contributed to increased productivity and quality (including social and environmental performance). Our research showed that certified farmers have increased their productivity and quality since joining the certification programs. Both farmers and program staff considered the main driver for this improvement to be the training and follow-up support provided by the programs. The evaluation also found plausible evidence that certified farmers had higher yield and quality than non-certified farmers. With respect to quality: agronomic practices have improved cocoa bean quality, but good practices in post-harvesting was to a large extent dependent on whether farmers had access to

markets which rewarded quality. Certified farmers also reported improved social and environmental practices – performing better than non-certified farmers.

Improved practices and higher yields as a result of the programs increased profitability. We found plausible evidence that UTZ certification programs contributed to improved income of farmers through more efficient farming practices and higher productivity.

In most cases, the programs also improved market access resulting in higher prices for the farmers. When market access was realized, it generally resulted in higher cocoa prices (lead price) and additional premiums, which positively influenced profitability. A lack of buyers for certified cocoa, or long distances to buying stations, meant that secure market access for all certified farmers for the full year was not achieved by the programs.

Participation in the programs increased farmers' overall motivation and commitment to cocoa farming. Continuity in service delivery and trade relationships was appreciated and resulted in greater trust. This, in combination with the market access increased farmer motivation, which in turn contributed to further improvements of practices. The programs also improved group dynamics between farmers which further increased motivation.

The contribution of UTZ certification to the observed improvements differed per case included in this evaluation. This largely depended on the level of service delivery and market access that would have been available without certification. In one case certification was a major driver for continued farm support services and direct sourcing. The contribution of UTZ certification was large. In the two other cases, certification was a supplement to existing farmer support activities, which in one case also included direct trade relationships. The contribution of UTZ certification to the observed changes was therefore smaller. Some changes also depended on other interventions, such as public sector efforts to promote side-grafting or post-harvesting practices. Where certification was embedded in existing interventions a number of advantages was identified:

At the farm:

- Inclusion of more training topics (notably social and environmental)
- More frequent follow-up support and monitoring together with conditioned access to services and market access both led to increased farmer discipline and improved performance and self-esteem.
- Farmers received additional premiums (when market access was realized).

For the certificate holder:

- The Code of Conduct is a useful framework for development of farm support packages
- A premium which can be used to strengthen internal support capacity results in more frequent and more intense support and monitoring.
- A premium is available to attract farmers into the program.
- Certificate holders are better able to communicate their sustainability efforts to external stakeholders.

The main drivers for farmers to continue in the programs were access to training and follow-up support and receiving a lead price. The premium was a welcome incentive, but not a necessary condition for farmers to remain in the program.

There were positive contributions beyond the certified cocoa farms. The programs directly or indirectly influenced farmers outside the programs. For example, certificate holders and public extension services collaborating in programs adopted UTZ requirements also in their activities with other farmers.

The programs realize impacts but certified farmers fall far short of what the sector considers sustainable. Certified farmers still fall far short of optimal yields. Very few of the certified farmers included in this evaluation were close to sustainable yield levels. Although profitability had improved, cocoa farming was still not considered a viable livelihood basis for the next generation. Not all farmers did always comply with all requirements of the UTZ Code of Conduct.

Further improvement will require additional investments, other instruments and more fundamental changes at sector level. The programs have certainly set an improvement process in motion. Will these result in continued improvements to an acceptable level? Additional investments will be required in, for example, grafting, replanting and more sophisticated pest, disease and nutrient management. Some of the programs have, in addition to certification efforts, commenced such activities.

This evaluation also discusses the influence of UTZ on systemic changes required to transform the Indonesian cocoa sector.

UTZ, in common with other standards, has defined sustainability and developed accountability systems between farmers and consumers. They have been an important driver for more direct trading relationships and farmer support and organization – all conditions to promote sector-wide change. The UTZ Code of Conduct and other standards have helped to increase consistency in farming support messages. The assurance models and certification have realized accountability throughout the supply chain. This increased the demand for certified cocoa and has raised additional finance from brands and retailers which has been invested in the supply base. Certification has been one of the main drivers in developing more direct trade relationships, creating more transparency and redistributing value which would have otherwise been captured by middlemen. Direct trade relationships have increasingly become the corner stone on which the cocoa industry secures its supply and channels investments to farmers. The shift from market based relationships to direct trade relationships with additional farmer support services, partly promoted by certification, can be considered as a systemic change with wide-scale impact. Certification programs promote better organized farmers, whether in trader networks, NGO service delivery networks or in cooperatives.

New programs and assurance models emerge that aim to go beyond what certification systems defined as sustainable. A certified farmer does not necessarily mean a viable farmer. The cocoa industry has introduced new programs in search of better results in terms of yield, farmer economics and community impacts. These programs may replace certification as preferred way to realize desired impacts. This would reduce certification to an accountability tool. However, some of the new programs have also started to test other assurance models that could become more efficient or credible models than certification.

UTZ had limited impact on sector dialogue, public sector governance and strengthening of service sectors. UTZ is an active participant in the sector dialogue, but this process is driven by other actors. Its influence on public sector governance is limited, although at local level certain requirements from the Code of Conduct have been adopted by public extension services. While certification has driven improved service delivery, it has not directly contributed to the development of a more independent service sector.

Recommendations to UTZ

- **Focus on service delivery**

UTZ may explore more how they can add value in improving the quality of service delivery. The quality and continuity of service delivery was a key success factor in improving farmer motivation and in creating positive impact. UTZ may also promote more collaboration between certificate holders and other service providers which could enhance alignment, continuity of service delivery and potential spin-off to non-certified farmers.

- **Increase market demand for certified cocoa**

Direct market access is a key benefit of the programs, but the programs did not assure direct market access to all certified farmers. There is a need for improved market uptake. UTZ could intensify its efforts to promote this.

- **Increase awareness on certification**

Certification is relatively unknown in Indonesia. Although not a critical constraint, greater awareness of certification in general and of UTZ in particular, could help promote adoption among farmers.

- **Consider more outcome related indicators**

The sector is increasingly aware that continued cocoa production requires minimum levels of yield and profitability. UTZ could adapt its model to promote or reward specific levels of farm performance; e.g. a certain yield performance.

- **Establish partnerships for additional investments**

Training and certification has improved farmer performance. Reaching the next level requires additional investments, for example in grafting or nutrient management. While the certification premium covers basic training and assurance costs, access to farm inputs and technology requires additional investments. UTZ may initiate or join coalitions to raise these investments.

- **Follow-up emerging corporate programs closely**

New corporate programs are exploring different models to realize desired impacts and to organize assurance. UTZ needs to understand why these programs emerge. Are there elements which can reinforce UTZ's model? Are there opportunities to add value to these new programs?

- **Develop more specific guidance on evaluation**

UTZ should evaluate the scope and (partly experimental) methods used in this evaluation. We recommend UTZ develop more specific guidance on what is expected from future evaluations in terms of scope and methodology. This can contribute to more focused and consistent evidence of impact as well as insights into potential for further improvements at farm and sector level.

Introduction

Experiencing unprecedented growth in certified products, voluntary sustainability standard systems (VSS) are increasingly challenged to prove the impacts of their work. UTZ is a member of the ISEAL Alliance and committed to implement the ISEAL Codes of Good Practice including the ISEAL Impacts Code. The assessment of impacts is based on the theory of change (intervention logic) of UTZ which outlines how UTZ's requirements and sector level strategies intend to bring about change and make sustainable farming the norm in targeted sectors. To evaluate whether the theory of change is being realized and improve operational strategies, UTZ needs to provide evidence-based information on impacts as depicted in the theory of change. Impact assessments are a tool to assess (short and medium term) outcomes and longer term impacts, the changes that occur during the implementation of the 'project' and possibly also to assess attribution claims. In addition, impact assessments promote learning by identifying constraints to realize more impact and recommendations to overcome these constraints.

This evaluation focuses on the Indonesian cocoa sector and reflects this dual purpose of proving and improving. On the one hand, it sets out to prove to what extent UTZ made a difference at farm level and sector level. On the other hand, it creates a deeper understanding why UTZ did or did not make a difference and how UTZ can improve its impact in the future Indonesian cocoa sector.

This report is structured as follows. Chapter 1 presents the research questions, impact pathways and methods used in this evaluation. Chapter 2 provides a brief introduction to the Indonesian cocoa sector. Chapter 3 presents the cases that have been included in this evaluation. Chapters 4 and 5 present the results of the evaluation at farm and sector level. This report ends with overall conclusions and recommendations.

1. Methodology

1.1 Research questions and impact pathways

This impact evaluation focuses on the following research questions:

1. Does UTZ Certification contribute to increased productivity and quality?
2. Does UTZ Certification contribute to better prices, better market access and to improved income?
3. What is the added value of UTZ certification when embedded in existing interventions?
4. What is the added value of UTZ in sustainable sector transformation?

The evaluation also identifies success factors and constraints in realizing impact and provides recommendations to UTZ to improve the outcomes and impacts at farm and sector levels.

To answer the research questions, the research team formulated four impact pathways. The impact pathways present the assumed relationships between inputs, outputs, direct and indirect outcomes and impacts. They include key external influences that may influence whether observed changes take place and can be attributed to UTZ. Together, the 4 pathways form the evaluators' interpretation of the theory of change of the UTZ approach.

Figure 1: four impact pathways used as basis for this evaluation

Impact pathway 1: Through training and access to knowledge on Good Agricultural Practices (GAP) farmers will increase farm productivity (and social & environmental sustainability)

| Inputs | Outputs | Direct outcome | Indirect outcome | Final outcome/ impact |
|--------------------------------------|--|--|--|--|
| UTZ requirements on GAP and training | <ul style="list-style-type: none"> • Farmers trained/ farmers reached on GAP and social & environmental practices | <ul style="list-style-type: none"> • Improved knowledge on GAP and social & environmental practices | <ul style="list-style-type: none"> • Farmers implement GAP • Farmers implement social and environmental practices | <ul style="list-style-type: none"> • Increased yield • Increased profitability • Reduced social & environmental risks |
| External influences | | <ul style="list-style-type: none"> • Knowledge prior to program • Access to other support programs | <ul style="list-style-type: none"> • Access to inputs, technology, finance, farm labor • Farmer perception of market | <ul style="list-style-type: none"> • Unusual pest infestation and climate conditions affecting yields |

Impact pathway 2: Through training and access to knowledge on Good Agricultural Practices (GAP) and post-harvest activities farmers will increase cocoa quality and prices

| Inputs | Outputs | Direct outcome | Indirect outcome | Final outcome/ impact |
|--|--|--|---|---|
| UTZ requirements on GAP, harvest and post-harvest practices and training | <ul style="list-style-type: none"> • Farmers trained farmers/ reached | <ul style="list-style-type: none"> • Improved knowledge on quality requirements and related practices | <ul style="list-style-type: none"> • Farmers implement practices to increase cocoa quality | <ul style="list-style-type: none"> • Improved cocoa quality • Higher price received for sales of better quality |
| External influences | | <ul style="list-style-type: none"> • Knowledge prior to program • Access to other support programs | <ul style="list-style-type: none"> • Access to inputs/ technology • Access to finance for necessary investments | <ul style="list-style-type: none"> • Market demands and rewards high quality • Public regulation of quality |

Impact pathway 3: Certification of farmers leads to improved access to markets and better prices (volume sold and prices), which increases farm profitability

| Inputs | Outputs | Direct outcome | Indirect outcome | Final outcome/ impact |
|--|---|---|---|---|
| UTZ partners certify farmers and improve access to markets | <ul style="list-style-type: none"> • Direct trade relationships • Improved market information | <ul style="list-style-type: none"> • Improved stability/security of market commitments • Improved market/ trade relations | <ul style="list-style-type: none"> • Farmers receive lead price • Farmers receive premium | <ul style="list-style-type: none"> • Higher revenues due to improved access to markets • More stability of revenues • Farm profitability |
| External influences | | | <ul style="list-style-type: none"> • Market competition • Demand and rewards for certified products | <ul style="list-style-type: none"> • Price fluctuations |

Impact pathway 4: The UTZ program activities at macro level help remove constraints to realize impact pathways 1 to 3

| Inputs | Outputs | Direct outcome | Indirect outcome | Final outcome/ impact |
|---|--|---|--|--|
| UTZ influences key actors at sector level | <ul style="list-style-type: none"> • Activities by key actors in convening partnerships, knowledge sharing and market development for sustainable cocoa | <ul style="list-style-type: none"> • Private, public and civil society action to address constraints for sustainable cocoa | <ul style="list-style-type: none"> • Improved service delivery • Improved market demand • Improved regulation • Improved sector organization | <ul style="list-style-type: none"> • Sector wide transformation |
| External influences | | <ul style="list-style-type: none"> • Initiatives undertaken by other actors | | |

1.2 Research methods - overview

The Terms of Reference for this evaluation called for a statistically representative sample of smallholder surveys in combination with additional background interviews and data analysis. During the inception phase, it became clear that the available budget was insufficient to conduct farmer surveys with a statistically representative sample and counterfactuals in three different locations divided over Sulawesi and Sumatra. Furthermore, understanding the value added of UTZ in relation to other interventions and sector transformation required more emphasis on qualitative methods to understand processes and causality. This would be at the expense of quantitative surveys. Also, international experience in impact evaluation of standards increasingly shows that mixed methods are required, with qualitative interviews as a basis and quantitative surveys focused on a few key indicators.

The research was done for different ‘cases’, being different certificate holders and locations where UTZ Certification was implemented (see next section). The research was done using a mixed methods approach, with qualitative and quantitative methods aligned in order to reach firm conclusions based on plausible evidence of cause and effect relations and specific quantitative data.

The basis of the mixed methods research approach was the use of qualitative methods, using as tools Focus Group Discussions (FGDs) with certified farmers (2 per case) and Key Informant Interviews (KIIs) with individual program partners, cooperative management and extension staff. These sessions enabled:

- evaluating perceptions of actual farmer performance in comparison to performance before the program and thus the changes that took place
- understanding of the cause and effect relationships behind these changes, and

- determining the contribution by UTZ (through its activities and inputs) to the observed changes, in relation to other factors.

Together, this meant we were able to validate the causal relations for the impact pathways 1 to 3 (productivity, quality, market access), and identify success factors and remaining constraints for further improvement.

In addition to these qualitative methods, the research team conducted structured farm surveys with individual certified farmers (twelve farmers per case). The farm surveys included a range of questions with yes/no and quantitative or semi-quantitative scores. For each case, the research team conducted the same survey with farmers who were neither certified nor supported by the program (four farmers per case). These farmers were considered as counterfactual. The research team also conducted field observations in a number of plantations to verify responses and assess the actual conditions (observations were done on four plots for certified farms and two non-certified as counterfactual, per case).

Table 1: Overview of methodology

| | <i>Farmer level</i> | <i>Supply chain and sector level</i> |
|----------------|---|---|
| Type of method | <ul style="list-style-type: none"> • Focus group discussions (7 with certified farmers) • Structured farm survey (35* certified and 12 non-certified) • Field observations (12 certified and 6 non-certified) • Key informant interviews with certificate holders (3), cooperative management (1), extension staff (3). At each interview several people participated | <ul style="list-style-type: none"> • Key informant interviews with traders, manufacturers and sector experts (6) |

* The sample size was set at 36 farmers, but due to time constraints only 35 farmers were interviewed.

The outcomes of the structured farm surveys and field observations were used to provide quantitative and semi-quantitative evidence to substantiate the outcomes of the qualitative methods (i.e. changes, cause and effect relations, contribution by UTZ and external factors). The quantitative data was primarily used to validate the insights and trends of the qualitative analysis.

The surveys and field observations also allowed comparison of actual performance between certified and non-certified farmers for selected indicators. However, this comparison between certified and non-certified farmers should be treated with caution. First, as outlined above, the sample size is too small for statistical analysis with counterfactuals. Also, we observed a certain selection bias in the ‘cases’. In some cases the implementing organizations consciously selected the better performing farmer groups and farmers within those groups to be included in the certification programs. This makes perfect sense when aiming for quick results in creating certified supply, and could also lead to copying/uptake by others if others are willing and able to follow ‘lead farmers’. However, it makes it difficult to interpret the comparison between certified farmers with non-certified farmers and may lead to an over-estimation of the results.

All methods used (FGDs, KII and structured surveys) were designed in such a way that these provide information and data to validate the impact pathways. To validate impact pathway 4 (sector transformation) and to determine the added value of UTZ Certification at supply chain and sector level, key informant interviews were conducted with traders and chocolate manufacturers.

Note that the approach developed for this evaluation made use of mixed methods to draw conclusions on ‘plausible’ impacts, but did not provide evidence for statistically significant proven impacts of certification. Rather than proving impacts for a limited number of indicators, the research provided a more holistic understanding on causal relationships and what and why certification had contributed. In this research quantitative data was collected to support the findings in the qualitative analysis. Previous experience in impact evaluation showed that it could be an expensive exercise to provide scientific proof of impact as well as insights required to further improve impacts. While the approach used in this evaluation did not allow for statistically proven quantitative performance results, the use of a mixed methods approach did enable definition of plausible impacts and understanding of the wider cause and effect relationships and the role of the program in changing these. We expect that this approach provides valuable insights on the contribution of certification, as well as lessons and recommendations to further improve impacts.

1.3 Research methods - details

This evaluation was conducted for UTZ Certification programs of three different certificate holders: two exporters and one NGO. Two programs were located in South-East Sulawesi and one program in Aceh on Sumatra. It was a deliberate choice of UTZ to cover both Sulawesi and Aceh as the context was expected to differ considerably.

All certificate holders have different certification programs in Indonesia. The selection of the programs for this evaluation was made in agreement between the research team and the certificate holders. Certificate holders may or may not have proposed their best programs. The three selected programs for this evaluation are further referred to as ‘cases’.

Per case the sample of farmers for the farmer surveys was selected. To do so, we used lists of farmer groups and farmers and then applied a two step clustered sampling process. As the first step, we selected three sub-groups for each case. The sub-groups consisted of farmer groups at village level (or *Kelompok*) or Farmer Field Schools (FFS). We aimed to carry out a random selection of groups, by selecting the 10th, 20th and 30th farmer group on a list with all groups. In one case it was necessary to change one of the groups to the next one on the list as it was located too far away to fit in the time schedule. We do not expect that this created a bias in the results as the selected groups were still located at significant distances from each other. In another case there appeared to a big difference in farm group sizes (varying between five and several dozens of farmers). In this case, the three groups were selected randomly out of the larger groups to increase representativeness with regards to the total population and to allow sampling within the groups. In the second step, we randomly selected four farmers per group; number 5, 10, 15 and 20 on the member list. If these four farmers did not include a woman, number 20 was replaced by a woman. This would ensure at least 25% of women (the three cases had between the 20% and 30% female participants in their program). The selection was made in advance. If a farmer was not available, the next farmer on the list would be selected. If the selected farmer was not available on the day of the survey, then a farmer nearby was selected.

The counterfactual farmers were selected in one or two neighboring villages of the certified farmers. As there were no lists of non-certified farmers available, the research team got access to these farmers by asking in these villages whether farmers were willing to participate.

The field observations were done at a selection of plantations. The plantations selected were both from farmers included in the survey and farmers not included in the survey.

The surveys and field observations were conducted by two Indonesian cocoa experts: Dr. Zaenudin and Puji Raharjo. The results of the first surveys were discussed in the project team.

The focus group discussions with certified farmers were either held within the selected groups of the farmer surveys (2 FGDs) or in a neighboring group (5 FGDs). In total six focus group discussions were held with farmer groups and one with only lead farmers. The total participation in focus group discussions was 54 farmers of which 10 were women and 2 were non-certified farmers. The focus group discussions were led by two consultants of Aidenvironment, one Indonesian and one international. Questions and responses were translated from English to Indonesian and vice versa.

During data analysis it became clear that the required proportion of women among certified farmers in the survey was not obtained. Instead of at least 25% of women, only 18% of the certified farmers included in the sample were women. Of the non-certified farmers, 25% were women. It also appeared that a relatively high percentage of the surveyed farmers managed a demonstration plot (17% of certified and 8% of non-certified). It appeared that after the random selection, due to time constraints, not all farmers had been informed beforehand. In absence of the selected farmer during the field visit, and taking into account the time constraints, the program staff relied upon the ones they could easily contact. These were apparently in various cases (male) lead farmers and not the following farmer on the list.

As a result of this selection bias in the sample and the potential selection bias of the program (see section 1.2) and the small sample size, the results from the surveys and field observations should be considered with some caution. However, after having analyzed the data of the focus groups discussions, key informant interviews, surveys and field observations, we observed highly consistent outcomes between the results of the qualitative methods and the results of the quantitative data collected from the surveys, which implies that the insights and trends obtained are highly plausible.

2. Indonesian cocoa sector

Cocoa farming in Indonesia was introduced by the government through different projects which started in 1981 and lasted to 1990. A rural area development project from 1991 to 1995 further promoted cocoa farming in Indonesia. The objective was to increase the export of agricultural commodities as foreign exchange earner and to contribute to rural development.

2.1 Cocoa production, grindings and trade

Cocoa has become Indonesia's fourth crop in area planted after oil palm, coconut and rubber. After peak production of 620,000 tonnes in 2006, cocoa production started to decline. Production in the 2013/2014 season was estimated at 375,000 tonnes (see Figure 2) and the 2014/2015 season had a forecast of 325,000 tonnes.¹ These statistics presented by ICCO were considerably lower than the figures released by the Indonesian government which reports production to have fluctuated around the 650.000 tonnes in most recent years. Key informant interviewees had more faith in the ICCO figures. They referred to reduced yield due to aging trees, pest and diseases and drought as well as farmers moving out of the cocoa sector as main reasons for the decline.

Figure 2: Cocoa production, grindings and trade (x1000 tonnes)

| | 2010/2011 | 2011/2012 | 2012/2013 | 2013/2014 (estimates) |
|-------------------------------|-----------|-----------|-----------|--------------------------|
| Production | 550 | 440 | 410 | 375 |
| Grindings | 190 | 270 | 255 | 310 |
| Export cocoa beans | 275 | 184 | 174 | |
| Import cocoa beans | 20 | 22 | 30 | |
| Export cocoa butter | 64 | 101 | 87 | |
| Export cocoa powder and cake | 69 | 99 | 81 | |
| Export cocoa paste and liquor | 12 | 9 | 17 | |

Source: International Cocoa Organization (ICCO) Quarterly Bulletin, updated May 2014 & ICCO Quarterly Bulletin of Cocoa Statistics, Vol. XLI, No. 3 (August 2015)

Two thirds of the cocoa is produced in Sulawesi and 22% in Sumatra. The remainder comes from the Moluccas and Papua (5%), Java (5%), Bali (2%) and Kalimantan (1%).² Government figures on 2014 indicate that half of the cocoa farms were in the mature phase and one quarter in the immature stage (aged between 1 to 3 years).³ The remaining quarter had surpassed their most productive phase (above 20 years) or were strongly damaged by pests or flooding. These figures are contested by the key informant interviews who estimate the share of old and damaged cocoa farms is significantly higher. Some even refer to 50% in Sulawesi.

In 2010 the Indonesian government introduced export tax on cocoa beans. This resulted in a sharp decrease in the export of cocoa beans and increase in investments in local processing capacity. Today the majority of exports consist of cocoa butter, cocoa powder and cake.⁴ Main export markets are

¹ ICCO Quarterly Bulletin of Cocoa Statistics, Vol. XLI, No. 3 (August 2015)

² Directorate General of Estate Crops (2014). Tree crop estate statistics 2013-2015, Cocoa.

³ Directorate General of Estate Crops (2014). Tree crop estate statistics 2013-2015, Cocoa.

⁴ De Wolf (2013): Successful Models of Value Chain Development for Smallholder Coffee, Cocoa and Tea in Indonesia. Lessons Learned and Opportunities for Scaling-up. Report prepared for the World Bank.

USA, EU, Malaysia, China and Australia. Indonesian cocoa beans are used as fillers in cocoa products. Indonesian production is commonly blended with cocoa from West Africa to increase flavor. As a supplier of high fat content filler cocoa, Indonesia has limited competition in the world market.⁵ There is also an increasing domestic consumption of cocoa.

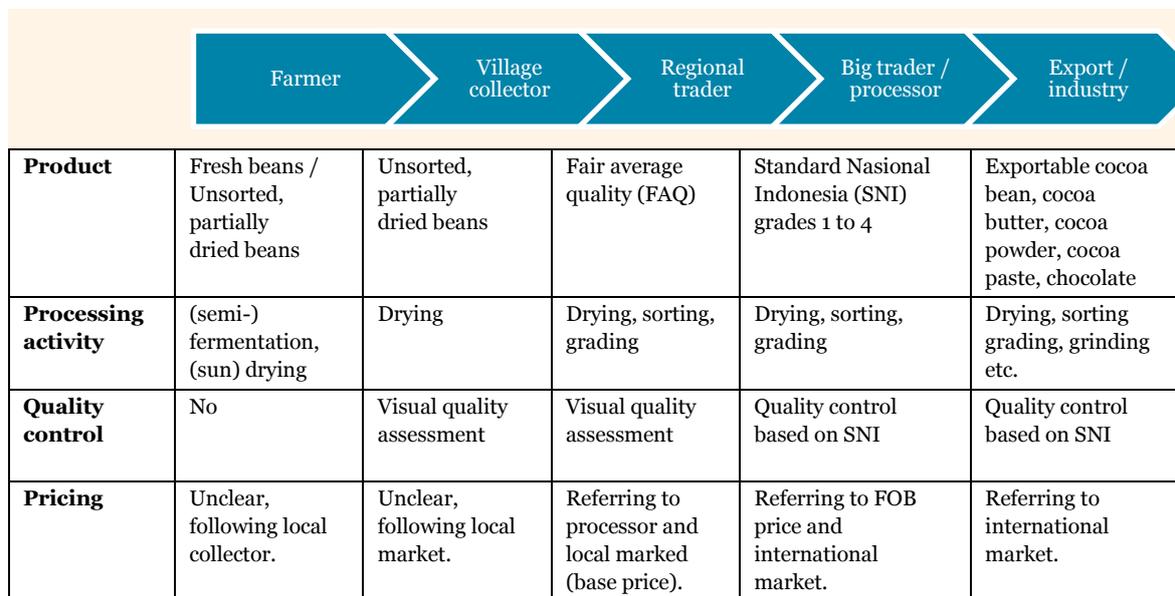
2.2 Cocoa value chain

The vast majority (95%) of cocoa plantations in Indonesia are cultivated by 1.6 million smallholder farmers cultivating an area of 1.7 million ha.⁶

Figure 3 illustrates the main actors in the cocoa supply chain in Indonesia, including the product flow, processing activities performed, quality control measures as well as the determination of the price along the value chain. Three major types of supply chain structures from the farmer to the processor or exporter can be differentiated in Indonesia:

- In the traditional supply chain model, farmers sell to local collectors, directly at their own farm or at collection facilities. They often have a close and trusted relationship with collectors who frequently provide loans or advanced payments.
- In a collective or group marketing cocoa beans are sold through a farmer group, directly to the exporter or processor. This model was developed with external support in some districts in South Sulawesi, West Sulawesi, and South-East Sulawesi and is in development in various locations on Sumatra
- In the direct marketing model farmers sell their cocoa directly to the exporting or processing company. This model relies on the companies establishing buying units in the village or sub district.

Figure 3: The organization of the cocoa value chain in Indonesia



⁵ National Renewable Energy Laboratory (NREL) (2014): Cocoa Intensification in Sulawesi. A Green Prosperity Model Project. Available online at: <http://www.nrel.gov/docs/fy14osti/62434.pdf>. Last accessed, October 9th 2014.

⁶ Directorate General of Estate Crops (2014). Tree crop estate statistics 2013-2015, Cocoa.

The 'traditional' supply chain model still makes up an estimated 75% of farmers' produce traded and especially prevails in areas outside of Sulawesi, where direct interventions from companies or support agencies have been limited in recent years.

In the 'traditional' supply chain model, cocoa farmers sell wet or dry cocoa beans. Drying is done by individual farmers using their own equipment such as tarpaulins, drying floors or drying racks. A first sorting process of fresh or dry beans is done by smallholders. Depending on drying time, beans are sold partially dried or dried. Price transparency is often limited and decided by local collectors who apply visual grading of the farmers produce. Local collectors further dry the beans and sell their produce to regional traders. Those traders may further dry the beans and sell to large traders or exporters who buy cocoa beans based on the Standard Nasional Indonesia (SNI) and the FOB price in international markets. Since May 2016, the Indonesian government requires companies to use and sell only fermented cocoa beans and to know the origin of the cocoa they procure. The regulation does not specify whether fermentation needs to be done at farm or trader level.

Indonesia does not have a minimum price or auction system as in some West African countries. As a result, price setting is free and set by the market. Competition between buyers is high in most areas in Indonesia. Usually farmers have 2 or 3 buyers to choose from. This has contributed to the fact that Indonesian cocoa farmers receive a relatively high percentage of the FOB price (key informant interviews estimated it at approximately 90%).

2.3 Production system

The cocoa varieties promoted were Forastero varieties; they produce cocoa beans with high fat content but less flavor than other "flavor varieties". Farmers either plant cocoa in a monoculture or a mixed cropping system. Throughout the year, cocoa can be harvested at different intensities. Peak harvest season (main crop) usually occurs from April to June but occurrence can change depending on rainfall. During the peak harvest season, harvest is carried out weekly by picking ripe cocoa pods. Beyond the peak season farmers can still harvest cocoa pods in smaller quantities. Mid-crop season usually takes place from October to December. In the mid-season harvesting is conducted every three to four weeks due to a relatively small number of ripe pods.

Farm maintenance practices differ widely. Due to a longer history of extension services and support programs, farmers in Sulawesi are considered to have higher awareness levels and more capacity to implement good agricultural practices (GAP) than in other regions. Whether this knowledge is applied however depends on farmers' perception of market opportunities and their willingness to invest time and money.

Estimates suggest that in Indonesia in recent years pest and diseases have reduced production with 40% and becomes problematic as trees age.⁷ The main cocoa pest in Indonesia is the Cocoa Pod Borer (CPB) which not only affects yield but also quality by reducing the bean size of the cocoa. The main disease is the Black Pod caused by a fungus. While pests cannot be fully eliminated, they can be effectively controlled. Regular pruning, harvesting, farm sanitation and the use of pesticides can reduce pest infestation significantly. Without external support, farmers generally lack knowledge and skills for proper control of pests and diseases.

⁷ National Renewable Energy Laboratory (NREL) (2014): Cocoa Intensification in Sulawesi. A Green Prosperity Model Project. Available online at: <http://www.nrel.gov/docs/fy14osti/62434.pdf>. Last accessed, October 9th 2014.

According to official statistics, the current average yield is at 820 kg per ha (in 2013)⁸, but all experts spoken in this study consider it to be much lower. It is estimated that by proper farm maintenance, pests and disease management and application of chemical and organic fertilizer, cocoa yields in Indonesia could reach 2,000 kg per ha in the most productive age group, provided that the plant population is in ideal condition and good farm maintenance is applied. Fertilizer use is widespread among smallholders in Indonesia, but farmers generally do not apply the right types, doses and frequency. The current fertilizer use pattern shows that farmers have limited knowledge on effective farm nutrient management.⁹

2.4 Key stakeholders and sustainability programs

In addition to farmers and farmer groups, Table 2 shows different actors playing an important role in the Indonesian cocoa sector.

Table 2: main stakeholders in the cocoa sector

| Stakeholder | Actors | Role in cocoa sector |
|------------------------|---|--|
| Government agencies | Ministry of Agriculture, Department of Estate Crops | Infrastructure investment, provision of technical assistance, seedling distribution, subsidized fertilizer distribution, regulation. |
| Research institutes | ICCRI, AARD, BPTP, Universities (Hasanudin, Gadjah Mada, Jember), ACIAR | Develop varieties, produce cocoa seedling, develop technology, technical assistance and trainings, develop training tools |
| Exporters and traders | Cargill, Olam, ECOM, BT Source | Sell to domestic and international processors, provide technical assistance, manage certification programs |
| Processors | Cargill, Mars, Mondelez, Nestlé, BT Cocoa, Barry Callebaut | Processing of cocoa products and marketing of end product |
| Financial institutions | Domestic banks, international banks (BRI, Mandiri, BTPN, BNI, BCA), IFC | Provide loans to cocoa trader, provide loans to farmers, develop loan programs. |
| Industry organizations | ASKINDO (INCA), Cocoa Sustainability Partnership (CSP) | Promotion, involved in developing standard setting, export/import regulation, represent Indonesia internationally |
| Development agencies | Swisscontact, VECO, ACDI/VOCA | Support producers for sustainability certification, provide technical assistant, training, organized cocoa farmers. |
| Certification schemes | UTZ, Rainforest Alliance, Fairtrade, Organic | Providing a standard and assurance model |
| Certification bodies | Control Union Certification, Biocert, IMO | Auditor (quality, traceability, sustainability). |
| Donors | World Bank, IDH, Ford Foundation, USAID, AUSAID, SECO, MCA Indonesia | Provide / support funding for cocoa development. |

Source: various sources

There are several programs to support the development of the Indonesian cocoa sector. They have been implemented by the Indonesian government, international development agencies, NGOs and the private sector. Companies have become increasingly active in developing partnerships with farmers. Those partnership projects, often with support from external donors and NGOs as implementing partners, usually aim at improving productivity and living conditions of the farmers. In many cases they also pursue certification of UTZ or Rainforest Alliance. Some of the main recent and current programs are:

⁸ Directorate General of Estate Crops (2014). Tree crop estate statistics 2013-2015, Cocoa.

⁹ NewForesight (2013) The 2020 Roadmap to Sustainable Indonesian Cocoa, Commissioned by the Cocoa Sustainability Partnership

- Cocoa Sustainability Partnership: a public private coordination forum for cocoa development with a focus on farmer empowerment in Indonesia with national and international business, NGOs, certification schemes and financial institutions
- GERNAS (2009 – 2015): the National Cocoa Rehabilitation Program ; government extension program providing training, planting material, subsidized inputs, fermentation boxes and drying tables
- SUCCESS / AMARTA (from 2002 to 2013): successive World Bank and USAID programs providing training and grafting services to farmers
- NGO programs: Sustainability Cocoa Production Program (Swisscontact; 2012-2015) and Cocoa Chain Development Program (VECO; 2008-2013) focusing on farmer organization, training on GAP, certification, financial literacy and nutrition
- Corporate programs: Mars (Cocoa Development Centers), Mondelez CocoaLife, Nestlé’s Cocoa Plan, Olam’s Cocoa Livelihood Charter. These programs have an important focus on yield improvement, but also focus on impacts at community level.
- IFC’s Agri-Finance Project: The project aims to develop commercially viable, replicable credit models for smallholders.

In conclusion, the cocoa sector is faced with a serious decline in production. To change this trend, different stakeholders have invested in various programs of which many aim to increase farmer productivity and the business case of farmers to continue to produce cocoa. A key orientation in these efforts is the 2020 roadmap developed by the Cocoa Sustainable Partnership.¹⁰ It aims to double productivity and attract new generations of cocoa farmers. Its six focus areas resume the major challenges in the sector; agro-inputs, planting material, knowledge, modes of delivery and organizations, finance and role of the government.

¹⁰ NewForesight (2013) The 2020 Roadmap to Sustainable Indonesian Cocoa, Commissioned by the Cocoa Sustainability Partnership

3. Introduction to the cases

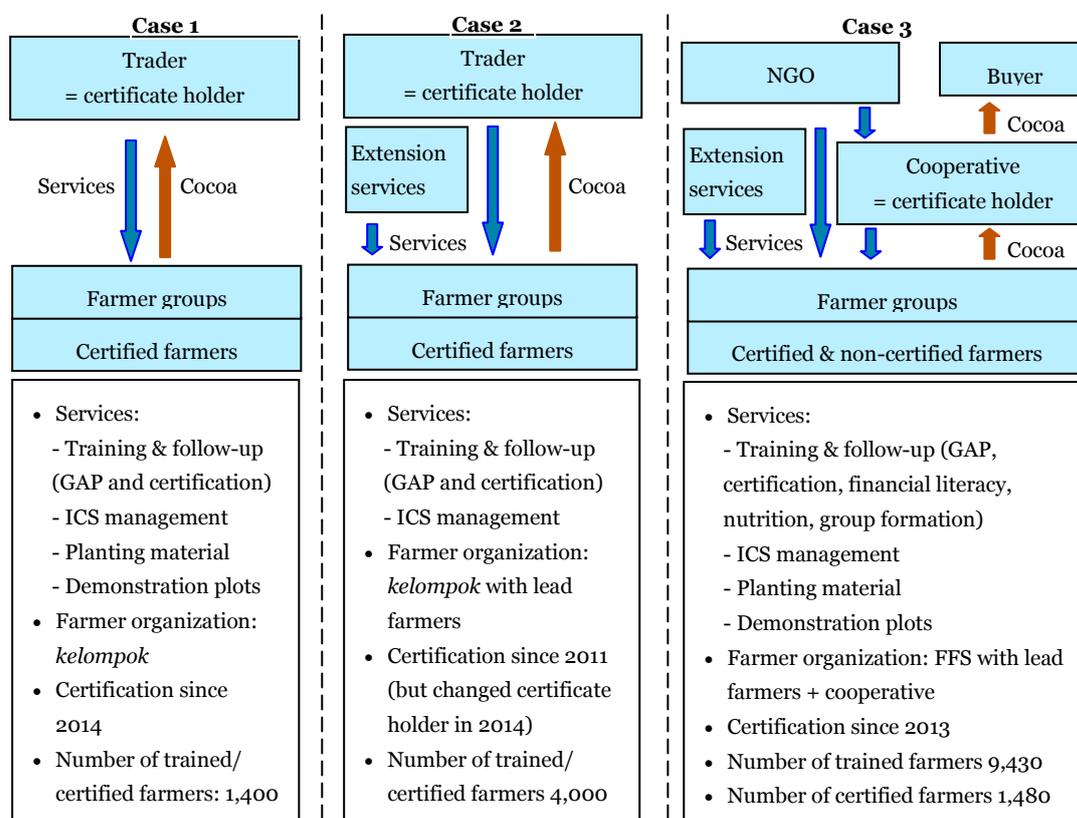
The UTZ cocoa program took off in Indonesia in 2012 and is growing rapidly. Currently, more than 20,000 farmers are part of the program. They are located on the islands of Sulawesi, Aceh, Sumatra and Bali. While a large number of farmers were already certified, the potential for this number to grow was significant as many were currently receiving training to prepare for UTZ certification in projects implemented by a number of different partners. Different partners followed different approaches in working with farmers to improve their practice and achieve UTZ certification. There were furthermore numerous projects in Indonesia working on improved practices of cocoa farmers, independently from UTZ.

This evaluation took place on Sulawesi and Sumatra. More specifically the evaluation took place in the provinces South-East Sulawesi and Aceh. In these two provinces, we visited projects of three different certificate holders. The certificated holders consisted of two exporters and one cooperative. The certificate currently held by the cooperative was until recently held by a NGO.

These three cases allowed for comparison of two different models along which smallholders could be organized for support and certification:

1. Trader model: the exporter of cocoa had organized the smallholders under one certificate, coordinating the smallholder support and managing the internal control system. In this model, the certified cocoa was expected to be bought by the trader.
2. NGO model: the NGO had organized the smallholders under one certificate, developing a cooperative and coordinating the smallholder support. The cooperative managed the internal control system. In this model the certified cocoa was sold by the farmers to external buyers.

Figure 4: case details



In the case evaluated, the NGO had promoted the establishment of a cooperative, which acted as certificate holder and managed the internal control system. The NGO supported the cooperative with the coordination, organization and initially also financially. During the evaluation, the cooperative still relied heavily on the NGO for implementation. Consequently, we considered this case in this study as an NGO model.

The trader cases closely resembled each other in terms of how they organized support and trade and the type of support services. One difference was that case 1 had a more diversified service package for farmers. These services were not only based upon the certification program, but also on participation in other programs, including an own corporate program focusing on yield improvement. Another difference was that case 2 more actively involved public extension services in the support to farmers. In Case 3, the number of certified farmers was only a small proportion of the total number of farmers which were supported with training activities. The scope of training topics in case 3 was also broader than the other programs. Whereas case 1 and 2 explicitly had a goal to certify all farmers included in the program, in case 3, certification was only one goal amongst many others and not necessarily for all farmers.

4. Farm level: results and contribution

This chapter presents the results according to the following topics related to three impact pathways:

- Farm characteristics – as a basis for all impact pathways
- Access to training: as basis for impact pathway 1 and 2
- Impact pathway 1: Productivity, social and environmental practices
- Impact pathway 2: Cocoa quality
- Impact pathway 3: Market access
- Related to all above 3 pathways: Overall motivation
- Conclusions on results and UTZ contribution
- Spin-offs at farm level

Per impact pathway we present the findings in specific subjects followed by a section on conclusions with respect to the validity of the impact pathway and the contribution by UTZ. It ends with an overview of identified spin-offs at farm level. As explained in chapter 1, the analysis at farm level is based upon the outcomes of focus group discussions and key informant interviews in combination with quantitative data derived from the surveys and field observations. Due to the small sample size and potential selection bias, the figures presented based on the surveys and field observations can only be considered as indicative.

4.1 Farm characteristics

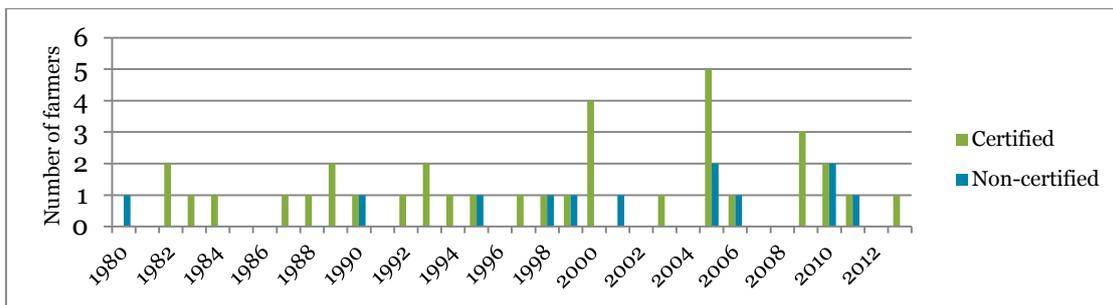
This section is based upon the outcomes of the farm survey. The sample included 35 certified farmers, of which 6 were female and 12 non-certified farmers of which 3 were female (see Table 3). The average age was approximately 40 years. Approximately two third of the farmers had finished high school. Approximately one quarter of the farmers finished only primary school. Education levels of men were on average higher than of women.

Table 3: Farmer characteristics (farm surveys)

| | Certified | Non-certified |
|--|-----------|---------------|
| Men | 29 (85%) | 9 (69%) |
| Women | 6 (18%) | 3 (25%) |
| Average age | 41 | 39 |
| Highest finished education | | |
| - None or primary school unfinished | 3% | 0% |
| - Primary school finished | 20% | 42% |
| - High school (SMA, SMP, SLTP, SLTA, etc) | 69% | 58% |
| - University (S1-S3) | 9% | 0% |
| Number of years of experience in cocoa farming | 17 years | 14 years |

Certified farmers had on average 3 years more experience in cocoa farming than non-certified farmers (17 years vs. 14 years). Farmers in South-East Sulawesi had on average 3 years more experience than farmers in Aceh. Women had on average 4 years more experience than men.

Figure 5: Years of experience of cocoa farmers in sample (farm surveys)



Certified farmers had 19% bigger cocoa plots than non-certified farmers. The average total farm size for certified and non-certified farmers was similar (2.2 ha vs. 2.3 ha) (see Table 4). In South-East Sulawesi, average farm size was 0.8 ha larger than in Aceh and average cocoa plots were 0.5 ha larger. Certified farmers had larger cocoa plots than non-certified farmers (1.9 ha vs. 1.6 ha). The share of cocoa in the total farm was 88% for certified farmers and 77% for non-certified farmers. In Aceh, the relative share of cocoa in the total farm was almost similar between certified and non-certified farmers. In South-East Sulawesi the relative share of cocoa was larger for certified farmers.

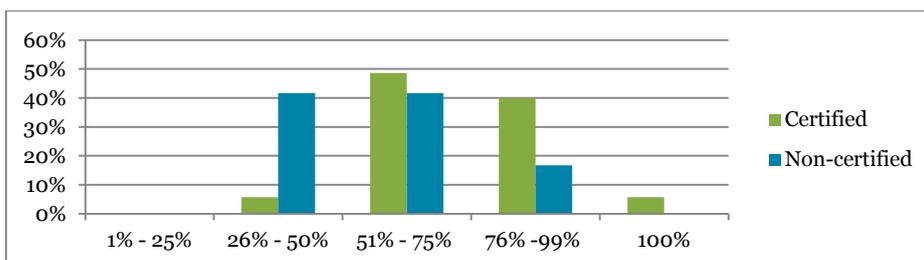
Table 4: total farm size (farm surveys)

| | Certified | Non-certified |
|--|------------|---------------|
| Total farm size | 2.2 ha | 2.3 ha |
| Total cocoa plot | 1.9 ha | 1.6 ha |
| Share cocoa plot in total farm size | 88% | 77% |
| Average number of cocoa plots | 1.5 | 1.4 |
| Land ownership on majority of the farm | 100% owned | 100% owned |

Certified farmers had on average 1.5 cocoa plots, compared to 1.4 for non-certified farmers. All farmers had land ownership on the majority of their farm.

For the majority of the farmers cocoa was their main source of income. This share of cocoa in total income was higher for certified farmers. In the focus group discussions, cocoa was considered to be the main income source. Farmers had also other farm and possibly non-farm income. Other crops cultivated included rice, coconut, clove, pepper and oil palm. The farm survey showed the relative share of cocoa in total household income to be higher for certified farmers than for non-certified farmers (see Figure 6). Figures between Aceh and South-East Sulawesi were comparable.

Figure 6: Proportion of cocoa as share of total household income (farm surveys)



4.2 Access to training

Conclusion: *Farmers highly appreciated the training offered to them as part of the UTZ programs. Although farmers may have had access to other training sources, the UTZ programs add value by their wider scope in topics and more intense follow-up. The combination of training, follow-up support and audit seems to increase farmer's discipline in applying good practices.*

Training was considered to be a necessary activity to make farmers comply with the UTZ Code of Conduct. The requirements in the UTZ Code of Conduct were comprehensive. Cocoa farmers in Indonesia usually did not comply with all requirements. Consequently, certification required improvement of farmer practices. All programs included in this evaluation tried to accomplish this by providing training, distributing information materials (e.g. posters) and by more or less frequent follow-up visits. Ensuring group members are trained is also an UTZ requirement of the certificate holders. In focus group discussions, farmers considered training and technical assistance as a critical input for improved farm performance. The trainings were organized in several ways (see Table 5).

Table 5: Training models of certificate (key informant interviews)

| | Case 1 - trader | Case 2 - trader | Case 3 - NGO |
|---|-----------------|---|---|
| Training provided by: | Trader | Government extension, with staff from trader | NGO staff (first) Government extension (follow-up) |
| Monitoring and follow-up technical assistance | Own staff | Own staff and government extension | Lead farmer and own staff |
| Standard curricula | 8 days | 4 days for lead farmers 4 days for farmers | 16 days |
| Lead farm model | In development | Yes | Yes |
| Demonstration plots | Sometimes | No | Yes |

Farmers highly valued the content and practical methods of training and the technical assistance provided by the programs. In all but one of the focus group discussions, farmers were very positive about the training activities provided by the programs. Only one group explained that the program had not provided them with any training or follow-up for almost one year (but they had received this before as part of the UTZ program). Farmers in Aceh explained that the training provided by the UTZ partner was - to most of them - the first training they had ever received. In South-East Sulawesi most farmers had received training before. Still, farmers considered the training provided by the programs to have a clear additional value in terms of content and approach. The following points were mentioned:

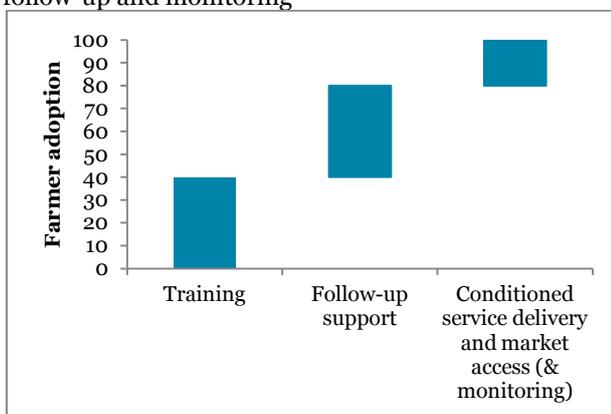
- the programs introduced innovations on known topics such as different side-grafting techniques and different methods of fertilizer application
- the programs introduced new topics such as safe use of pesticides, the use of organic fertilizers and importance of shade trees
- the programs made use of more practical training methods (notably in field training) and follow-up support (previous programs or alternative sources had, for example, only classroom training and no follow-up support)

The practical training approaches applied in combination with follow-up visits were considered to be most effective. Farmers had frequent need of advice, for example on pest and disease management and fertilizer use. The availability of an expert who could provide regular feedback was considered to be highly effective - much more than following only one training without follow-up support.

The level of contribution of UTZ to the access, content and methods of training varied per program. In one case, the certificate holder would probably not have trained farmers if there was no demand for certified cocoa, or at least with a much lower intensity. The other certificate holders would have trained farmers regardless the demand for certified products. Recent innovations were generally not the result of UTZ certification, but were derived from other research and development programs. In all cases, UTZ certification did influence the content of the training. Whereas standard training activities of the certificate holders focused on yield improvement, UTZ certification made them include more social and environmental practices. The new UTZ Code of Conduct also made some certificate holders put more emphasis on post-harvest activities. Farmers and certificate holders were generally positive about the topics that UTZ had introduced. Key informant interviews revealed some concerns on the relevance of a few topics in the Indonesian context and the comprehensiveness of the Code of Conduct. They advocated a more concise and national relevant Code of Conduct and accordingly in training topics.

Certification did contribute to the intensity of follow-up support and monitoring, which also resulted in improved farmer discipline. Certification contributed to the intensity of the follow-up support. The monitoring requirements for certificate holders in combination with the annual pressure for a successful audit required shorter lines between extension staff and farmers and more frequent follow-up support. According to program staff this contributed to the implementation of the practices. Farmers confirmed this in focus group discussions. They argued that the regular follow-up and the existence of requirements to stay in the program ‘reminded them on the importance of the practices’. Certified farmers appreciated this, as they considered the requirements made sense and in most cases they were not hard to implement. Some program staff shared some concerns on the time it took to monitor farmer compliance with the requirements in the UTZ Code of Conduct: this time could have otherwise been used for more direct technical support.

Figure 7: farmer adoption increases with more intense follow-up and monitoring



Where other sources of training and advice existed, they were usually aligned with the activities of the certificate holders. Most farmers also received training from public extension services. The interviews with program staff made clear that in all three cases close collaboration existed between the certificate holder and public extension services. In the first case, public extension staff participated in the training provided by the program. In the second case, the public extension services were responsible for providing part of the program related training (jointly with lead farmers). In the third case, follow-up training was organized by public extension services in close coordination with the certificate holder.

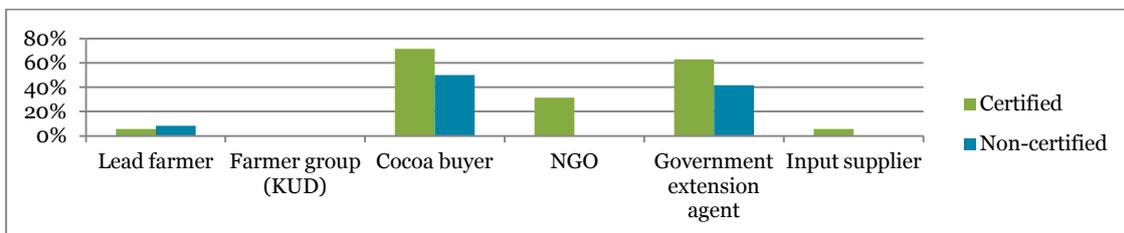
Farm surveys revealed that all certified farmers received training on cocoa farming, while one third of the non-certified farmers never received any training (see Table 6). Certified farmers also received more training than non-certified farmers in the last two years (on average 7.3 days vs. 3.3 days). Approximately three-quarters of both certified and non-certified had visited a demonstration plot.

Table 6: Access to training of farmers

| | Certified | Non-certified |
|---|-----------|---------------|
| Has ever received at least one training | 100% | 67% |
| Number of training days in last 2 years | 7.3 | 3.3 |
| Visits demonstration plot | 71% | 75% |

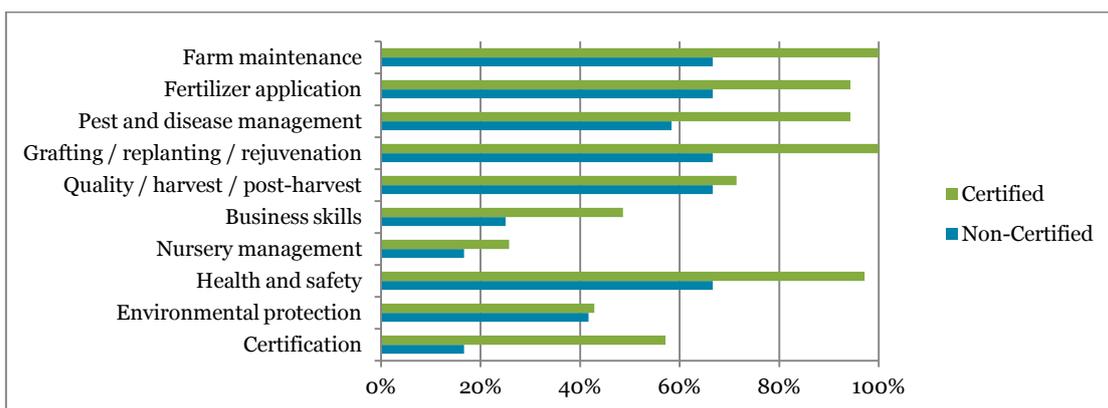
Most farmers received training from cocoa buyers and government extension agents. In Aceh, the NGO program partner was the main source of training for the certified farmers.

Figure 8: Proportion of farmers who received training from a particular actor in the last 2 years (farm survey)

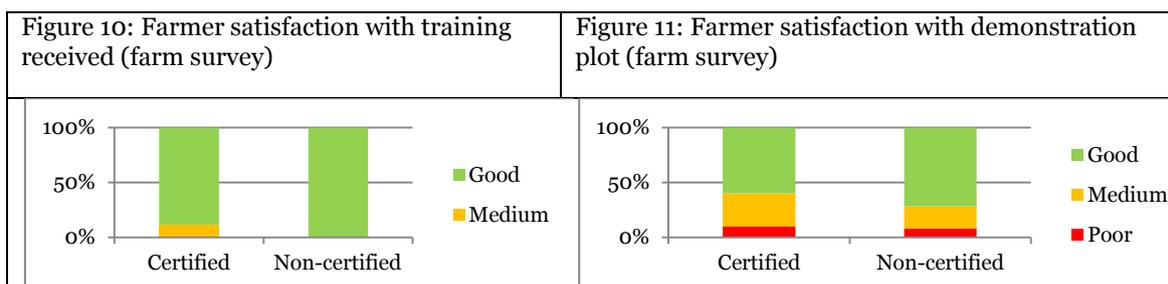


Certified farmers received training on more topics than non-certified ones. The most frequently included topics were farm maintenance (e.g. pruning and weeding), grafting, fertilizer application, pest and disease management and health and safety (see Figure 9).

Figure 9: Proportion of farmers who received training per topic in the last 2 years (farm survey)



The farm surveys revealed that satisfaction levels with regards to training and demonstration plots are generally high (see Figure 10 and Figure 11) for those who had access to it.



4.3 Impact pathway 1: Productivity

Conclusion: *UTZ certification contributed to higher productivity. This higher productivity was the result of improved agricultural practices and higher knowledge levels. These were often a direct result of training and follow-up support fully or partly provided by the UTZ programs. In two out of three cases, farmers would have received this support without certification. Certification may still have contributed to more intense support and monitoring, and consequently may have positively affected farmer practices and yield.*

This section presents the results of impact pathway 1 on productivity. It describes the changes in key agricultural practices and productivity.

Table 7: Summary of findings of impact pathway on productivity

| Aspect | Trend since UTZ (Focus group discussion) | Certified vs. non-certified farmers (farm surveys , focus group discussion, field observation) | Likely contribution of UTZ programs |
|-----------------------------|---|---|---|
| Original planting material | No changes | Better (=certified farmers perform better) | None: plantation established before program |
| Side-grafting | Improved partly | Similar to better | Partial: training, but government also invests in this. Dependent on availability of planting material |
| Pruning and sanitation | Improved | Better | Large: improved training and follow-up |
| Pest and disease management | Improved | Better | Large: improved training and follow-up |
| Chemical fertilizer use | Stable or increased, but more effectively | Lower to higher depending on fertilizer type | Large: improved training and follow-up. It is dependent on availability of subsidized fertilizers |
| Organic fertilizer use | Increased | Higher | Large: improved training and follow-up |
| Yield | Increased | Higher | Large: improved training and follow-up |

4.3.1 Changed awareness and practices

Planting material

Certified farmers had more reliable sources for their original planting material. Almost all plantations of the farmers surveyed were established before they entered the programs. Consequently, the planting material used was not influenced by the program. It did however have an important influence on potential yield. Farm surveys revealed that awareness levels for the benefits of good planting materials were comparable between certified and non-certified farmers (see Figure 12). The majority of farmers received their cocoa variety from the government. Certified farmers more often used planting material from reliable sources than non-certified farmers (77% vs. 58%). Thirty percent of the farmers had planted cocoa varieties from different sources. In line with the sources of planting material, certified farmers more frequently had known varieties than non-certified ones (see Figure 14). Twenty percent of the certified farmers had a mix of known and unknown sources. The most used planting material were the clones S1 and S2. The three programs had no activities actively promoting replanting or new plantings.

Figure 12: Proportion of farmers who stated benefits of using good planting material (farm survey)

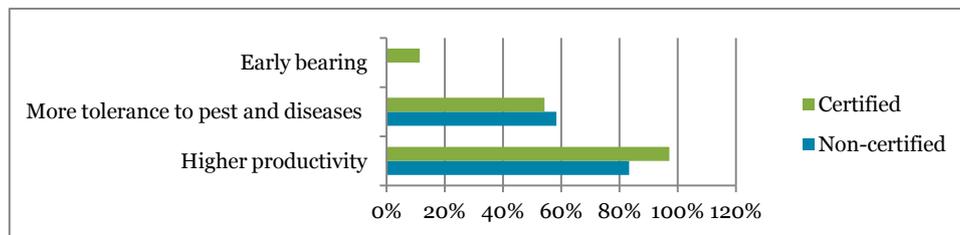


Figure 13: Source of planting material (farm survey)

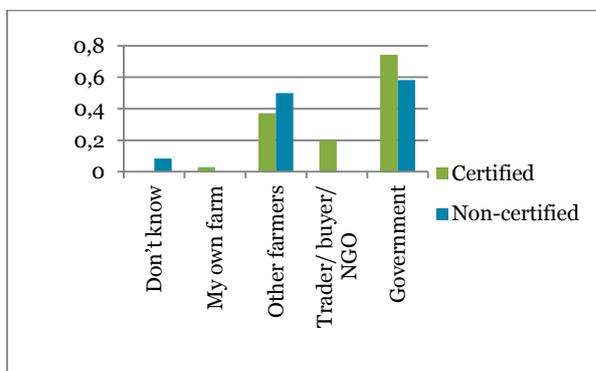
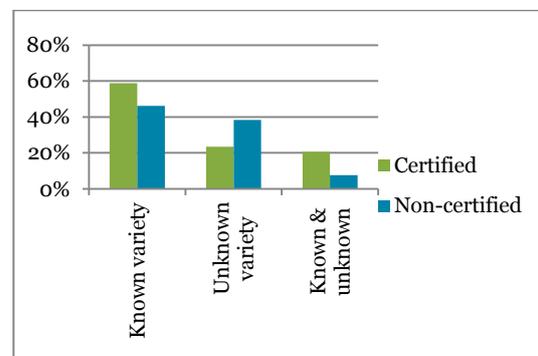


Figure 14: Proportion of farmers with known or unknown planting varieties (farm survey)



Side-grafting

The majority of the certified farmers had old plantations and had started to side-graft their trees. Successful side-grafting can have an important positive effect on the yield of aging trees. In focus group discussions, farmers admitted to have received training on side-grafting by the programs. Two programs promoted a new side-grafting method, which farmers considered more successful than the conventional method. Many farmers also received this support from public extension services. Farm surveys revealed that 80% of the certified farmers and 58% of the non-certified farmers had started grafting their cocoa trees (see Figure 15). Three-quarters of the certified farmers had side-grafted at least 50% of their trees, against 42% of the non-certified farmers. Field observations confirmed that there were more certified farmers who had side-grafted their trees than non-certified farmers (67% vs. 29%) (see Figure 16). In some focus group discussions, farmers

complained that the success rate of grafting was very low. Many farmers experienced a lack of access to good planting material for grafting (and new plantings).

Figure 15: Proportion of farmers that started to side-graft cocoa trees (farm surveys)

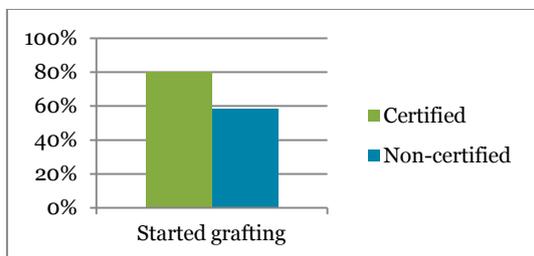
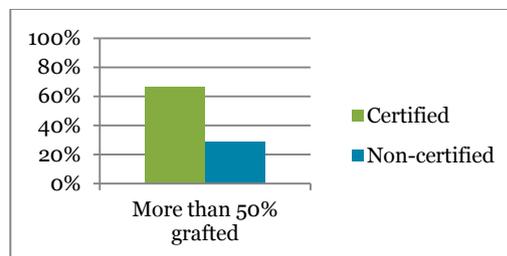


Figure 16: Proportion of farmers with more than 50% of trees side-grafted (field observations)



The direct contribution of the programs and UTZ certification on side-grafting was less evident. Programs generally provided training on side-grafting. However, without access to good planting material the impact would be limited. The cocoa sector was conscious that promoting grafting was key to ensuring the viability of the Indonesian cocoa sector. Public, private and civil society organizations invested in this. In several certified groups the grafting was not the result of certification, but was facilitated by public extension services. Since a few years, the Indonesian government promoted side-grafting at large scale, either by distributing seedlings in combination with training and in certain cases by conducting the side-grafting at the farms by own hired staff. Two certificate holders had set-up or promoted nurseries as strategy to overcome the structural lack of good planting material. These were additional activities to the training and certification program.

Pruning and sanitation

Farmers reported that the program increased their discipline on pruning and sanitation practices. In the focus group discussion, farmers stressed the importance of improved farm maintenance to increase yield. They reported that the training and follow-up support by the programs helped them to improve pruning and sanitation (e.g. removal of diseased pods). According to them, this had reduced pests and diseases and increased yield. For farmers in Aceh, this was the first time they had received any training on these topics. Many farmers in South-East Sulawesi had already received previous training and advice on these topics (e.g. public extension services and a development program). Despite high awareness levels prior to the certification programs, many did not apply the recommended practices or ceased to apply them after a while. In contrast, the current support received was more practical and motivated them more to adopt the recommended practices. The repetitive nature of training and monitoring seemed to have a positive influence on farmer motivation and discipline. Still, some certified farmers acknowledged that they did not manage to maintain the plantation in good shape throughout the year. They needed to work on other crops in certain periods of the year. Some also considered the heavy pruning required once a year to be too hard work.

The farm surveys showed comparable outcomes between certified and non-certified farmers with regards to awareness levels on the benefits of pruning (see Figure 17). Certified farmers reported having slightly better practices than non-certified farmers, but differences were small. Of the certified farmers, 88% reported pruning all trees, compared to 77% of the non-certified farmers (see Figure 18). Certified farmers pruned on average 2.5 times per year and non-certified farmers 2.3 times. Contrary to the outcomes of the farm survey, the field observations showed that certified farmers performed considerably better than non-certified, both on pruning and on farm sanitation (see Figure 19 and Figure 20). This seems to confirm improved discipline by certified farmers.

Figure 17: Stated benefits of pruning (farm survey)

| | Certified | Non-certified |
|---|-----------|---------------|
| To maintain a manageable cocoa tree – to make plucking easier | 49% | 25% |
| To rejuvenate the tree / increase production | 89% | 100% |
| To remove diseased, dead and knotted branches | 69% | 83% |
| Don't know | 0% | 0% |

Figure 18: Pruning practices (farm survey)

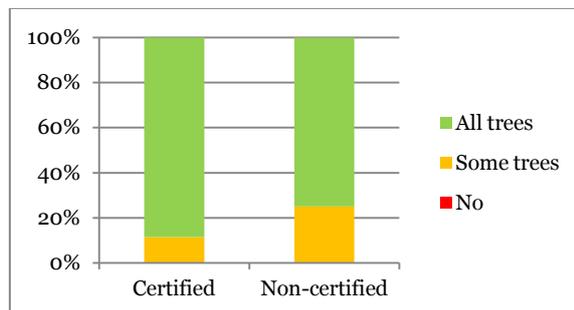


Figure19: Pruning (field observations)

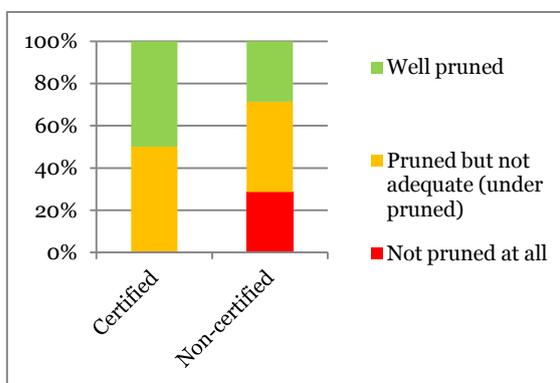
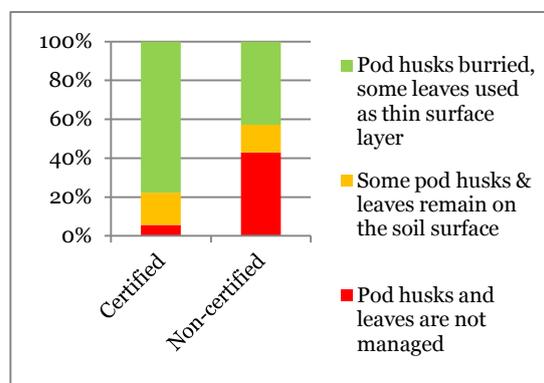


Figure20: Overall farm sanitation (field observations)



Pest and disease management

The program helped by reducing pests and diseases with the same or less pesticides (unless farmers did not use them before). All farmers considered pests and diseases to be a crucial factor determining yield. Almost all farmers reported having pests and disease problems affecting their yield. All but one focus group experienced a decrease in pests in recent years thanks to the program.

In South-East Sulawesi, farmers were used to apply pesticide before the program. In focus group discussions, some farmers explained that they had to change the type of pesticides, as these were prohibited by the program (more about this in section 4.1.4). They reported that the program had kept pesticides used constant or reduced them thanks to more targeted application as well as a lower occurrence of pests which in turn was a consequence of improved pruning and sanitation practices.

In the Aceh, farmers in focus group discussions reported not using any pesticides prior to the program. They started to plant cocoa in the 90s without knowledge of good practices. On the fertile soils and in the appropriate climate, yields were high in the early years, despite low farm maintenance. Around 2004, pests and diseases spread and heavily affected yields. Most farmers did not treat these as they had never learned how to do this. In that period, many farmers were totally discouraged by the low yields and abandoned their cocoa farms. As the program introduced pest and disease management, the use of pesticides increased with an important positive effect on yield.

Farm surveys revealed that the proportion of farmers using insecticides, fungicides and herbicides was slightly higher among certified farmers (see Figure 21). Differences were higher in Aceh. Around

20% of both certified and non-certified farmers regularly sprayed pesticides during the harvest season and one third of the certified farmers did this sometimes. This is not considered to be good practice.

Figure 21: Proportion of farmers using pesticides (farm survey)

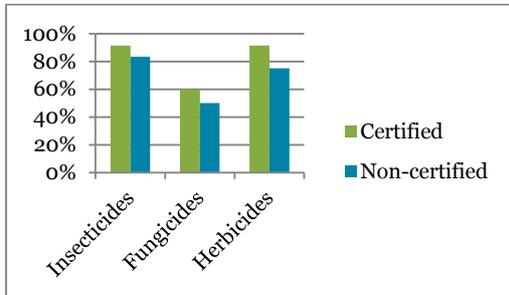
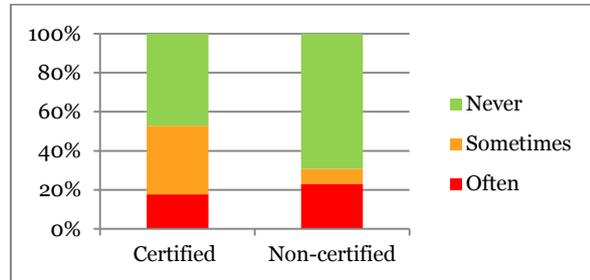
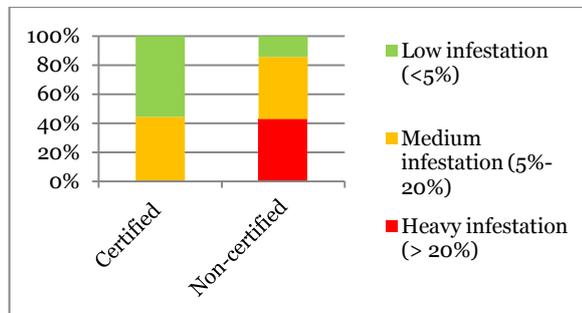


Figure 22: Pesticide use during harvest season (farm survey)



Field observations showed that certified farms had much less infestation than non-certified farmers. More than half of the certified farms had low infestation, compared to 14% of certified farmers.

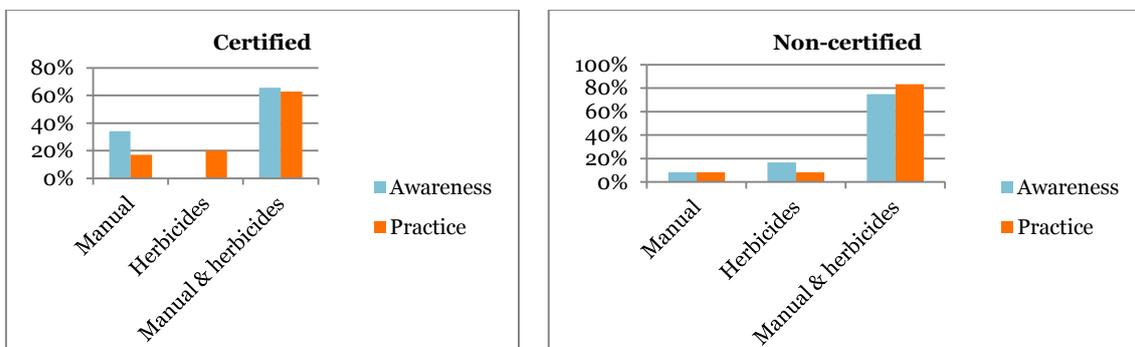
Figure 23: Pest infestation (farm observation)



Pest and disease management is usually part of any training program that exists and today many farmers have access to some kind of training. As with other topics, it seems that the combination of training, follow-up support and possibly the audit increases farmer's motivation to monitor and maintain their farms.

Awareness levels and reported practices on weeding among certified and non-certified farmers were comparable. Farmers in focus group discussions reported combining herbicides and manual weeding with (mechanized) hand-tools. Once the trees were full grown, farmers usually applied herbicides annually and other weeding was performed done by hand with or without mechanized tools. Farm surveys confirmed that most farmers used a combination of herbicides and manual weeding (see Figure 23). This was also considered to be the recommended practice by most certified and non-certified farmers.

Figure 24: Awareness and practice on recommended weeding practices (farm survey)



Awareness levels and practice were not always in line. For example, none of the certified farmers considered using only herbicides as recommended practice, but still 20% practiced this.

Pesticides and herbicides were generally available. In focus group discussions, farmers reported that these inputs were available and farmers usually had the financial resources to buy them. Some considered the purchase of pesticides to be a higher priority than obtaining fertilizers. None of the programs had pesticide or herbicide distribution activities.

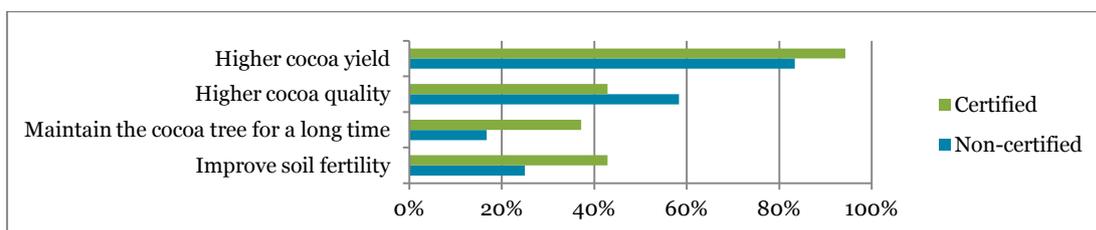
Chemical fertilizer use

The program promoted more effective use of fertilizers, not necessarily higher quantities. In focus group discussions, although less frequently than some of the above mentioned practices, farmers referred to fertilizer use as contributor to yield improvement. Whereas most farmers in South-East Sulawesi did not change the amount of fertilizers during the program, they stated that the program learned them to apply it more efficiently; instead of applying it on the full plot, they now applied it in circles around the trees and some incorporated it in the soil. Several farmers in Aceh reported using no chemical fertilizers at all as they considered it not worth it. Other farmers in the same program reported that the program had stimulated them to start applying fertilizers (something they did not before).

Chemical fertilizer use is highly dependent on the availability of subsidized fertilizers. The availability of subsidized chemical fertilizers is a key factor influencing its use. In previous years, subsidized fertilizers were available. Since a few months before this study there was limited availability. In the focus group discussions, many farmers reported not buying non-subsidized fertilizers. As they were about three times as expensive as subsidized ones, they considered it economically not worth it. Consequently, these farmers applied fertilizers below recommendation. Some certified farmers intended buying some non-subsidized fertilizers, although less than the amount of subsidized fertilizers they usually buy. In several focus group discussions, farmers recommended the program to facilitate access to subsidized fertilizers.

In South-East Sulawesi, the proportion of farmers using chemical fertilizers was similar between certified and non-certified farmers. In Aceh, fertilizers use was more frequent among certified farmers. The farm surveys showed a higher proportion of certified farmers applying chemical fertilizers (91%) than non-certified farmers (75%). The frequency of fertilizer applications was similar (2 times a year). The surveys revealed that awareness levels for the benefits of applying fertilizers were slightly higher among certified farmers (see Figure 25).

Figure 25: Proportion of farmers stating benefits of applying fertilizers (farm surveys)



Certified farmers used compound fertilizers more often and slightly higher quantities of most fertilizer types than non-certified farmers. The farm surveys, showed a higher proportion of certified farmers applying NPK and potassium (KCL) than non-certified farmers. Relatively more non-certified farmers used single compound fertilizers (Urea or nitrogen and TSP/SP or phosphorus). Certified farmers that applied fertilizers applied higher quantities of Urea, NPK and KCL, but lower quantities of TSP than non-certified farmers (see Figure 26). All fertilizers combined, certified farmers applied 8% more chemical fertilizer than non-certified ones (482 gram per tree per

year versus 447 gram per tree per year). This is below recommended practice (between 600 and 1000 per tree per year for mature trees depending on location).

Figure 26: Proportion of farmers applying chemical fertilizers in total and per type (farm surveys)

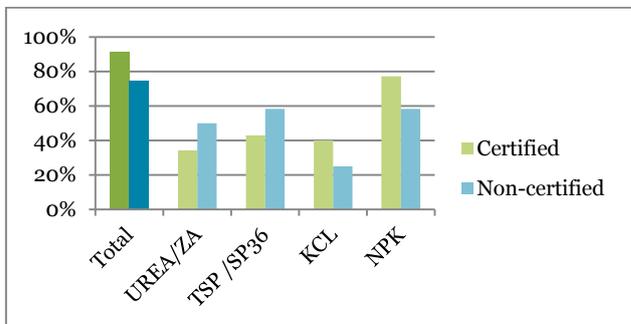
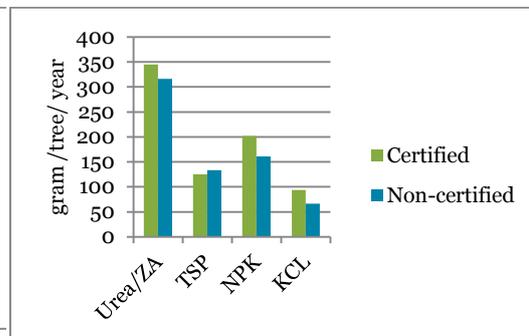
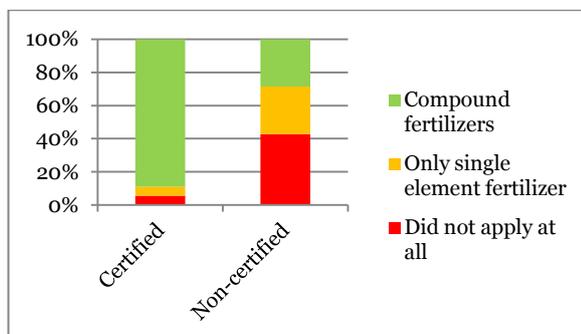


Figure 27: Average quantities of fertilizer use for those farmers which applied them (farm surveys)



Field observations on the state of trees and soil presented a clearer difference between certified and non-certified farmers. While chemical fertilizers had been applied on 94% percent of the certified plots (majority compound), this was the case for only 57% of the non-certified plots (half of them compound).

Figure 28: Fertilizer performance (field observations)



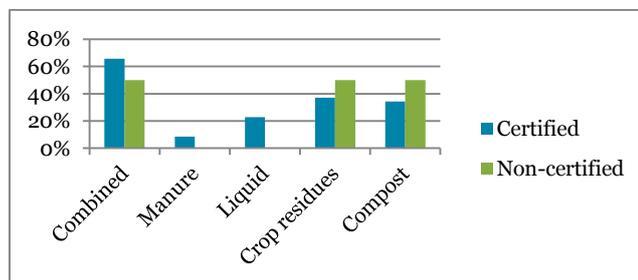
Organic fertilizer use

Farmers reported that the program

stimulated them to apply more organic fertilizers. In focus group discussions, farmers explained they never used organic fertilizers before the program. Most farmers revealed that the program had made them use at least some compost, animal manure and sometimes liquid organic fertilizers. Quantities applied were generally much lower than recommendations.

Farm surveys revealed the use of organic fertilizers was relatively high for both certified (66%) and non-certified farmers (50%). The non-certified farmers applied compost and left leaves in the field. Organic fertilizer application among certified farmers was more diverse. Almost one quarter sometimes bought organic fertilizers in the stores (often in liquid form) and 9% applied manure.

Figure 29: Proportion of farmers applying organic fertilizers, combined and per type (farm surveys)



Availability of organic fertilizers was an issue. Farmers complained about the time it took to make compost and the effort required to transport it to the field. Two programs also started to build composting facilities to demonstrate farmers how to make compost. Liquid fertilizers were considered too expensive by many, as well as by some experts.

4.3.2 Impacts on yield

Certified farmers reported having improved their yield because the programs helped them improve their practices. In focus group discussions, farmers were very consistent on the fact that the training and advice provided by the program had increased their yield. Some improvements were also thanks to the support they had received from other actors. Only a few farmers stated that their yield remained stable or had declined since joining the program. They related this to trees being too old to invest in good practices or to increased pest infestation caused by temporary negligence of farm maintenance due to personal circumstances. Climate was also mentioned as a factor which influenced yield. Despite the variety in climate, farmers were convinced that the improved practices had contributed a lot to increased yield.

Poor performance when entering the program made it possible to realize important improvements in yield with relatively basic measures, but current yields are still far from optimal yields. The potential impact of the programs on yield partly depends on the yield gap of farmers before entering the program. A baseline among non-certified farmers conducted in 2013 not far from two cases in South-East Sulawesi found a mean yield of 487 kg per ha.¹¹ Two of the included programs had measured a baseline. The program in Aceh measured yield since it started the program 5 years ago. The baseline showed an average yield between 300 and 400 kg/ha, which had increased last year to 800 a 1000 kg/ha. One of the programs in South-Sulawesi started only last year and its baseline was at approximately 700 to 750 kg /ha. They expect farmers to be at 1000 kg / ha at the end of this year. The official national statistics over 2014 show a higher average yield of 830 kg / ha in South-East Sulawesi and 675 kg / ha in Aceh.¹²

In focus group discussions, most farmers stated they were dissatisfied with their current yield. Despite the improvements they thought further improvement was required. They also thought this was possible by increasing grafting and further reduction of pest and diseases. The program staff estimated the potential yield to be at 2000 kg / ha. This will depend on successful side and top-grafting or replanting and higher levels of performance in for example pest and disease and nutrient management.

Certified farmers had higher yields than farmers outside the program. All certified farmers in focus group discussions claimed to have higher yields than farmers outside the program. This was confirmed by farm surveys and field observations as well as some non-certified farmers participating in one focus group discussion. For example, farm observations showed that at 61% of the certified plots were in good condition with more than 80% of the trees looking healthy. For the non-certified plots this was the case in 29% of the visited plots. The number of productive trees per hectare was also higher.

The farm surveys revealed that certified farmers had on average 687 kg/ha and non-certified farmers had 322 kg/ha (see Figure 30). Certified farmers reported considerably higher yields than non-certified farmers across all cases and tree age categories (see Figure 31 for tree age category). The survey did not take into account moisture content in the yield figures. Moisture content has an important effect on the weight and this depends to a great extent to the number of drying days. The number of drying days did not differ greatly between certified and non-certified farmers (see section 4.1.5.) and they used slightly better drying techniques. Estimated yields based upon observed farm conditions confirmed better performance by certified farmers (see Figure 32).

¹¹ Ton G. and Uribe E. (2013), Baseline report: Brief characterization of households and farming practices in Kolaka – Southwest Sulawesi, LEI – Wageningen University

¹² Directorate General of Estate Crops (2014). Tree crop estate statistics 2013-2015, Cocoa.

Figure 30: Average yield (kg/ha) (farm survey)

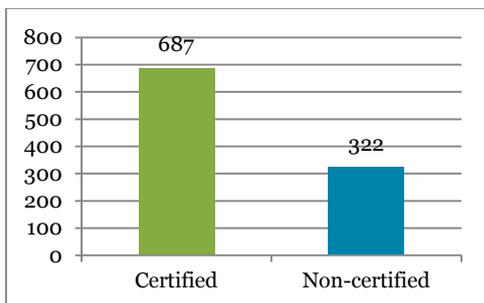


Figure 31: Average yield per tree age category (kg/ha) (farm survey)

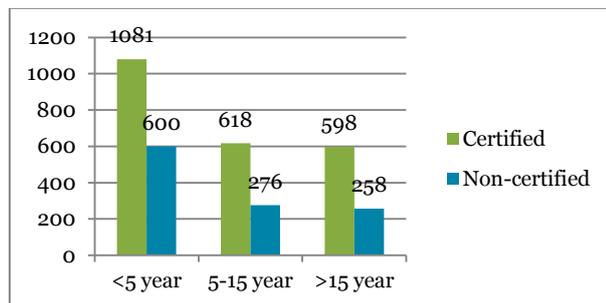


Figure 32: Estimated yield performance based upon farm conditions (field observations)

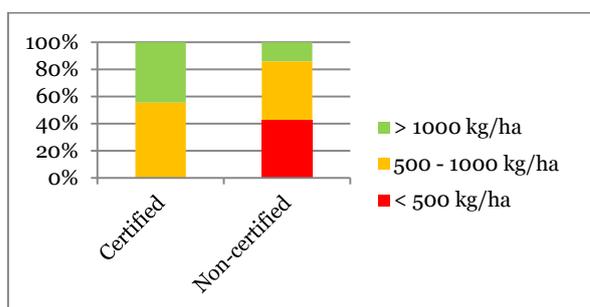
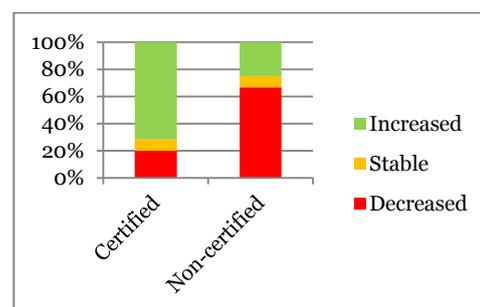


Figure 33: Perceived yield development in past 2 seasons (farm survey)



In the farm surveys, certified farmers experienced a yield increase more often in the past two years (71% vs. 25%). Non-certified farmers experienced a decline in yield (70% vs. 20%) more often. The main influencing factor for those farmers that experienced an increase was improved tree handling, followed by fertilizer use, climate change, reduced pests and disease levels and tree age. For a decrease, farmers referred most often to increased pests and disease levels and climate.

The contribution of the programs to improved yields was high, the contribution of UTZ varied per case. As the following sections show, most practices that influence yield have been improved thanks to the programs. Only in side-grafting the certified farmers may rely on the public extension services more often. The extent to which this can be attributed to UTZ Certification is less obvious. As explained in the previous section on access to training, in two out of three cases the farmers would have received the support in yield relevant practices also if there was no certification. Nonetheless also in these cases UTZ Certification seems to have had an added value as the more intense follow-up and annual audits resulted in increased discipline in applying the practices and consequently higher yields.

4.4 Impact pathway 1: Social and environmental performance

Conclusion: *UTZ Certification resulted in the inclusion of more social and environmental friendly practices in training modules. Certified farmers did perform much better than non-certified farmers on some topics included in this evaluation. Although not all certified farmers performed (yet) according to standard, the programs have largely contributed to an improvement process on these topics which for many farmers were completely new.*

Table 8: Summary of environmental practices

| Aspect | Trend since UTZ (Focus group discussion) | Certified vs. non-certified farmers (farm surveys and focus group discussion) | Contribution of UTZ Programs |
|---|--|---|---|
| Use of banned pesticides | Improved | Similar to better | High: UTZ CoC put topic in training |
| Personal Protective Equipment | Improved | Better | High: UTZ CoC put topic in training |
| Chemical storage and disposal of empty pesticide containers | Improved | Slightly to much better | High: UTZ CoC put topic in training |
| Cover by shade trees | Not available | Slightly worse | Partial: topic is also promoted by others |
| Record keeping | Hardly improved | Slightly better | Some |

Certification contributed to the inclusion of several social and environmental topics in the programs resulting in increased awareness and performance. Program staff reported that several social and environmental aspects from the UTZ Code of Conduct have been included in their training programs because of certification. They would not have been included if certification was not the aim. The focus group discussions revealed that since they joined the program, farmers had improved their overall awareness on the influence of certain practices on their health, the environment or the long-term productivity of their farms. Still not all certified farmers were fully aware of all risks. Some also did not comply with the UTZ Code of Conduct on all aspects (see next sections for examples), but realized that they should change and expected they would change. The evaluation included a selection of sustainability practices which are discussed below.

Use of banned pesticides

Where needed almost all certified farmers stopped using prohibited pesticides and herbicides. Focus group discussions showed high awareness on which products were prohibited by the UTZ Code of Conduct. The direct impact of this in Aceh is limited as in Aceh most farmers participating in the focus group discussion did not apply any pesticides or herbicides before joining the program. Neither there are prohibited pesticides available on the local market. Farmers in South-East Sulawesi referred to several products which they stopped using because of the program. For example, the UTZ Code of Conduct prohibits the use of the herbicide Paraquat (Gramoxone), which was a popular product among farmers. In focus group discussion, most farmers which used this product claimed to have stopped using since joining the program. Some farmers who were in the first year of certification still used it; despite their awareness on its ban, they were hesitant to change and first wanted to see the effects of the alternative products used by their group members.

Non-certified farmers also have reduced the use of banned pesticides. Certified farmers in focus group discussions reported also a reduction in the use banned pesticides among non-certified farmers. They observed that extension services took over the recommendations from the program. And as alternative products appeared to be more effective, the use of banned pesticides reduced considerably. The farm surveys revealed that one certified farmer (out of 34) still used Paraquat and two (out of 13) non-certified farmers used it. One non-certified farmer used a prohibited insecticide.

Use of Personal Protective Equipment (PPE)

The programs increased awareness on the health risks of pesticide application and the use of Personal Protective Equipment (PPE), but there is still room for improvement.

The focus group discussions revealed that quite some farmers were not aware of health risks related to pesticide use before entering the program. The programs were the first time they have been trained on this topic. Others had some awareness before the program but did generally not use PPE such as masks, gloves and booths or protective clothing. Most farmers reported to follow the required practices since they entered the program. Some reported to use not all PPE and sometimes no PPE. A small minority of these farmers were not convinced about the health risk of chemical use. The others realized that they should change, but found PPE uncomfortable in use. Farmers who used external labor for pesticide application generally insisted on the use of PPE by these applicators. However, as they were not always present during the application, they could not continuously control whether this was respected. No program provided PPEs to farmers.

Awareness levels and use of PPE among certified farmers was higher than among non-certified farmers. Farm surveys showed higher awareness (see Figure 34) and use of PPE (see Figure 35) among certified farmers; 80% of the certified farmers used always all recommended PPE, while this percentage among non-certified farmers is 42%.

Figure 34: Proportion of farmers stating benefits of using PPE (farm surveys)

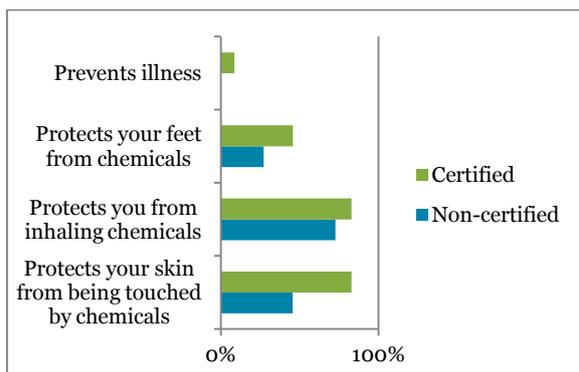
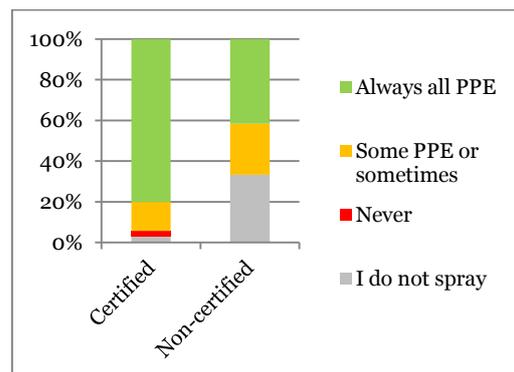


Figure 35: Proportion of farmers using PPE (farm surveys)



Chemical storage and disposal of empty pesticide containers

The program has learned farmers about how to store pesticides and how to deal with the empty pesticide containers. In focus group discussions, farmers explained that the storage and disposal of chemicals was a new topic for them. The program made them increase awareness and change practices. Some farmers complained about the difficulty of digging holes to bury empty containers and about the price of storage boxes. None of the current programs provided boxes to store pesticides, although in one case the previous certificate holder has done this.

Certified farmers stored and disposed of pesticides and empty containers more safely than non-certified farmers. Based upon the results of the focus group discussion, non-certified farmers would be expected to perform considerably worse on this topic. Farm surveys showed that certified farmers did indeed perform better, but several non-certified farmers also performed well. A higher proportion of certified farmers than non-certified farmers stored pesticides outside the house in a closed room or box (60% vs.42%) (see Figure 36). No certified farmer and 8% of the non-certified farmers stored pesticides in the house in an unlocked place. Approximately 70% of the certified farmers washed their pesticide containers before burying as good practice prescribes,

compared to 40% of the non-certified farmers. A minority of certified farmers (9%) dumped empty pesticide containers in waste pits in the plantation or around the house against 40% of the non-certified farmers.

Figure 36: Storage of pesticides (farm survey)

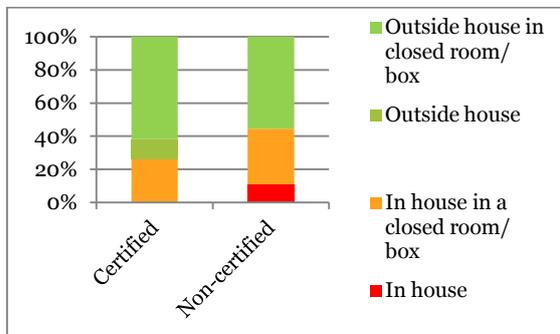
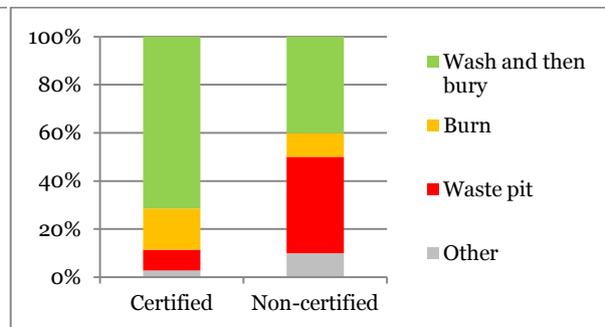


Figure 37: Disposal of empty pesticide containers (farm survey)

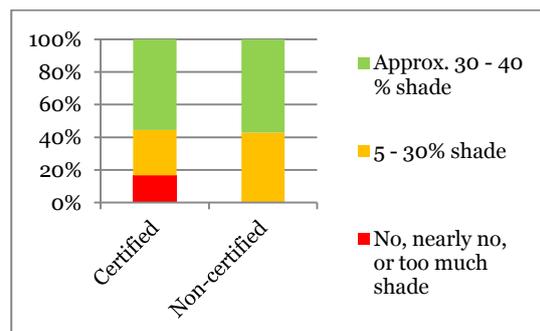


Cover by shade trees

Field observations showed that non-certified farmers performed better than certified ones regarding shade trees.

Approximately 60% of the certified and non-certified farmers had shade trees covering 30% to 40% of the field. Almost 20% of the certified farmers had (nearly) none or too much shade. In South-East Sulawesi we have observed attempts to plant shade trees. These efforts can be linked to UTZ as it has a requirement to have at least 12 shade trees per hectare in the cocoa plot.

Figure 38: Shade tree cover (field observations)



Record keeping

Record-keeping on pesticide use and fertilizer use is generally poor, with certified farmers performing slightly better than non-certified farmers. In focus group discussions, only a few farmers reported keeping records consistently. Some farmers had started, but did not continue. Those farmers who did keep records consistently appreciated it; for example one farmer had reduced the quantities of pesticide used after starting to keep records. Two programs stated that they intended to intensify training on business skills including record keeping. In the UTZ Code of Conduct, record keeping of fertilizer and pesticide use is mandatory in year 4 of certification.

Figure 39: Proportion of farmers by record keeping frequency of pesticide use (farm survey)

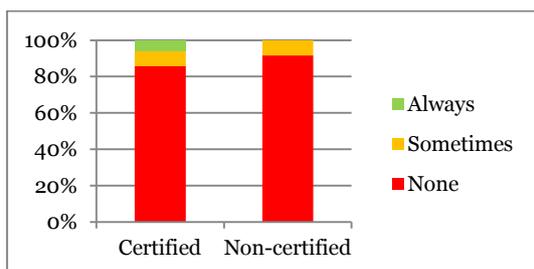
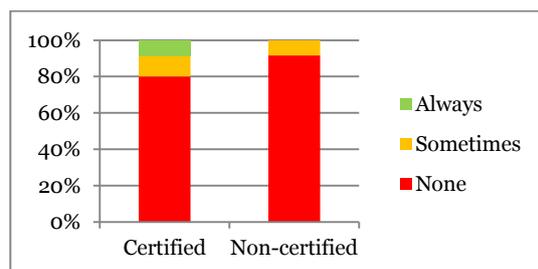


Figure 40: Proportion of farmers by record keeping frequency (farm survey)



In focus group discussions and interviews with program staff we also touched upon other topics such as buffer zones and soil conservation. UTZ and other certification systems have certainly influenced the adoption of these topics in training and monitoring efforts. Some program staff noted that the requirement on buffer zones was too difficult for a smallholder who already had cocoa trees within the limits of 2 meters from a water stream.

4.5 Impact pathway 2: Cocoa quality

Conclusion: *Cocoa quality of certified farmers improved due to improved agricultural practices as promoted in the programs. The direct impact of the program on post-harvest practices is less clear and largely depends on market access and support by public extension services.*

| Aspect | Trend since UTZ (Focus group discussions) | Certified vs. non-certified farmers (farm surveys) | Contribution of UTZ Programs |
|-----------------------------|--|---|--|
| Agricultural practices | Improved | Better | High; see previous section |
| Harvesting & bean selection | Stable | Similar | Partial: included in training, , but government also invests in this |
| Drying | Stable or improved | Slightly better | Partial; if included in program, dependent on market access and government investment |
| Fermentation | Stable or improved | Slightly better | Partial; if included in program, dependent on market access and government investment |
| Quality | Improved | Better | Partial: high via improved GAP, but government usually invests in post-harvesting activities |

Farmers felt that the programs had increased the quality of cocoa beans mainly as a result of improved agricultural practices. In focus group discussions, farmers stated that their bean quality had increased since they entered the program. They mostly attributed this to improved agricultural practices, which reduced pests and diseases, and so improved bean quality.

Harvesting and bean selection

Harvesting frequency of certified and non-certified farmers was comparable. Farm surveys revealed that certified farmers on average were less able to name benefits of timely harvesting than non-certified farmers. Harvesting frequency of certified and non-certified farmers was on average similar, with the majority harvesting between once every week or two weeks.

Figure 41: Proportion of farmers stating benefits of quickly harvesting pods when ripe (farm surveys)

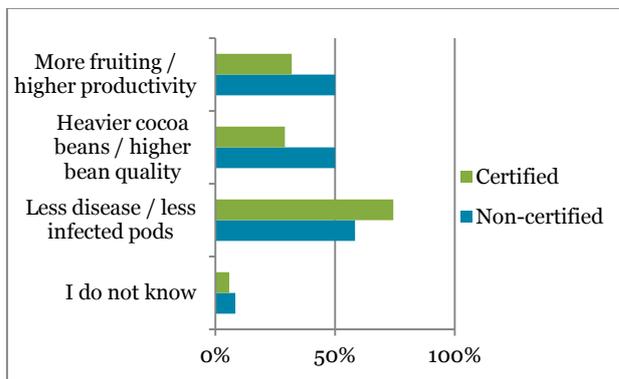
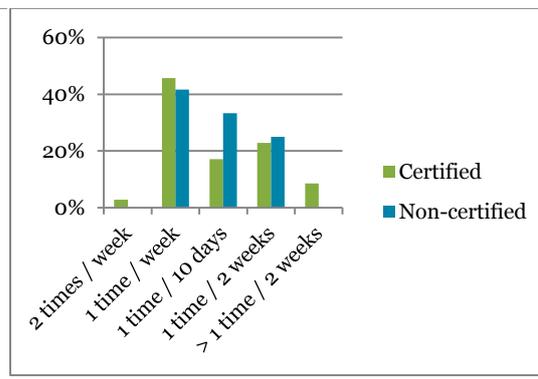


Figure 42: Proportion of farmers and harvesting frequency (farm surveys)



Certified farmers more often selected their beans on quality than non-certified farmers. The farm survey revealed that 77% of the certified farmers separated good beans from poor quality beans before selling, against 42% of the non-certified farmers. Those farmers who did not select their beans, did this either because they received no price difference for different quality or because they mainly had beans of good quality.

Fermentation

Two out of three programs trained farmers in fermentation, but implementation largely depended on market incentives. Focus group discussions revealed that despite training, farmer behavior in fermentation depends on market incentives. For example, in one program farmers only started fermentation up to standard after their buyer (the certificate holder) requested it.

Farm surveys revealed that 89% of the certified farmers and 75% of the non-certified farmers partially fermented their beans; they kept the beans for 2 or 3 days to accelerate the drying process and avoid mould. On average certified farmers kept their beans 2.6 days and non-certified 2.3 days. Those farmers with secure market access via the program kept the beans longer than those without market access.

Figure 43: Proportion of farmers who partially fermented their beans (farm survey)

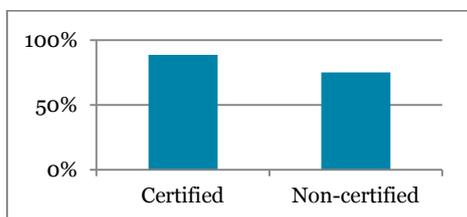
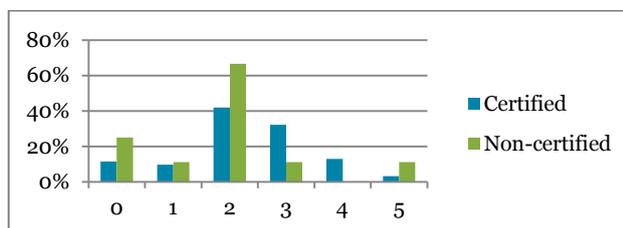


Figure 44: Number of days of partial fermentation per farm type (farm survey)



Public extension services were quite active in distributing fermentation boxes and teaching farmers how to use them – in all three case areas. Due to forthcoming stricter regulation on cocoa quality, public extension services had more strongly emphasized post-harvest activities in their training and distributed fermentation boxes and drying tables. None of the programs provided fermentation boxes. The farm survey revealed that one-quarter of the certified and one-third of the non-certified farmers used a basket for covering the cocoa. Certified farmers used a fermentation box more often than non-certified farmers (36% vs. 22%). Other techniques used

were covering beans on the ground with plastic sheets and partial fermentation in bags. The majority of the farmers (72%) who fermented turn their beans every 24 hours. The remainder turned them more frequently, as did non-certified farmers.

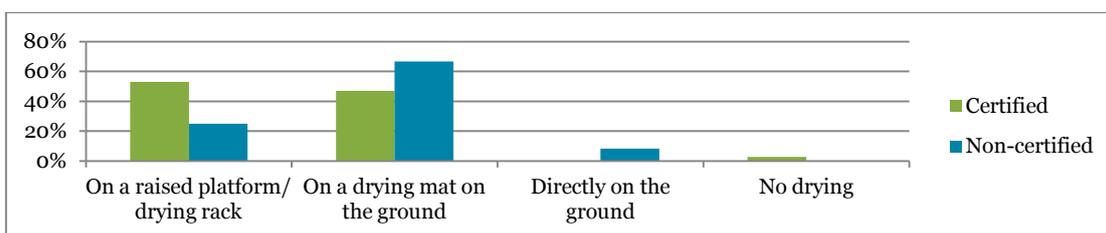
Drying

Two out of three programs trained farmers in drying practices, but implementation largely depended on market incentives. Focus group discussions revealed that the programs had not necessarily changed drying practices. Drying practices depended on buyer requests and whether there was a price incentive for higher quality. Local collectors did not usually provide this incentive or did provide one that was considered insufficient. When selling directly to exporters, the incentive was higher – good quality beans were a requirement for sales and a higher price. In addition, exporters gave farmers an additional premium for quality. Despite these incentives, the program staff reported a challenge in obtaining the best moisture rate from the certified farmers.

Certified and non-certified farmers had comparable drying times, unless they sold to an exporter (which increased the number of days). All but one certified farmer included in the farm survey dried their cocoa beans. The majority of farmers dry 3 or 4 days. Certified farmers had comparable drying time to non-certified farmers (3.0 days vs. 2.9 days). Farmers who sold all their cocoa to an exporter dried on average 1.1 day longer than those farmers who sold none of their cocoa to an exporter.

Certified farmers used better drying techniques on average, but this was mainly linked to government intervention. More than half of the certified smallholder dried on raised platforms or drying racks. Among non-certified farmers this was only one-quarter. The public extension services in all three case areas were quite active in distributing fermentation boxes and teaching farmers how to use them. Focus group discussions confirmed that several groups had received drying tables from the government. And as public extension services and the certificate holders tend to focus on the same groups (they coordinate complementary action), it is not surprising that certified farmers more frequently used them. Market requirements also influenced use. In one focus group discussion, farmers expected only using drying tables if the market would pay for high quality beans. The farmers included in this evaluation did not use solar dryers or blowers. One program had started to promote solar dryers in neighboring areas.

Figure 45: Drying techniques used per farmer type (farm survey)



4.6 Impact pathway 3: Access to markets

Conclusion: *UTZ Certification did not always result in better market access. When it did, this resulted in higher cocoa prices, additional premium and further increased profitability – in addition to the effect of increased productivity. Certification encouraged exporters to buy directly from farmers. Farmers highly appreciated direct trading relationships with lead prices and training. They considered this to be more important than a certification premium.*

In South-East Sulawesi competition between exporters or Indonesian traders was intense. Farmers were usually able to access buying stations of different buyers if they managed to organize the transport. Although no exporter had a base in the area we visited in Aceh, several were located in Medan, which is only a few hours' drive away.

Table 9: Summary of indicators of market access

| Aspect | Trend since UTZ (Focus group discussion) | Certified vs. non-certified farmers (farm surveys) | Contribution of UTZ Programs |
|---|---|--|--|
| Market access | Stable or improved | Similar or better | In one case yes, in one case not related to UTZ, in one case intended, but not realized |
| Price (lead price, premium for quality and certification) | Improved if market access improved | Better if market access improved | High, if market access was improved |
| Price information | Increased | Higher | Partial : promoted by program, but dependent on commercial strategy |
| Access to finance | Stable or decrease | Better | Not included in programs, but cutting out middlemen potentially reduced access to informal loans |
| Profitability | Improved | Better | High (with increased yield), and high (with increased price) if market access was improved |

Market access

Not all farmers gained improved market access in the program, but if they did it was highly valued. The Aceh case had no buyer for the certified cocoa until the field visit (at the time of the field visit the NGO was close to an agreement with some buyers). Certified farmers had until that moment never received a premium for their certified cocoa. The program did however facilitate some market access for members of the cooperative to buyers in Medan. In the two trader cases, market access to an exporter was not guaranteed. In one case, the trader had been less pro-active in the previous year in acquiring certified cocoa of one of the farmer groups visited. This group had sold nothing to the exporter in the previous year. This was the result of issues in the transition period before and after it had been sold to another company. The farmers impacted did not complain as they considered the prices of alternative buyers to be sufficiently attractive.

The other farmers in the two trader cases had good commercial relationships with the exporter. Farmers received a lead price as well as additional premiums for certification and quality. However,

distances to buying stations were often considered long. If volumes were large enough, farmers generally sold to the exporters. However, farmers preferred to sell smaller volumes to village traders as transport costs to the buying stations were relatively high. To counteract this, one trader was considering setting up local collection stations. The certified cooperative in the NGO case already had local collection points.

UTZ certification has positively influenced market access by promoting more direct trade relationships. Interviews with the program staff revealed that one the traders started to buy directly from farmers because of the demand for certified products. Without certification they would have probably continued more indirect trade relationships (via local collectors). The other trader would probably have procured directly also from farmers without certification as part of their standard company program. In the NGO case, large investments had been made in the pursuit of a buyer for certified cocoa. These investments would possibly have been less intensive, if certification was not part of the program.

Farm surveys confirmed that not all certified farmers had improved market access. Less than half sold at least some of their cocoa directly to an exporter and 20% sold all their cocoa to the exporter. On average, certified farmers sold 37% of their cocoa directly to an exporter, 45% is sold to village collector, 14% to regional traders and 4% to cooperative s (see Figure 46). Some of this cocoa could still have been sold as certified if it had been sold to regional traders licensed by the program, but a large part was sold as non-certified. Three-quarter of the non-certified farmers sold to a village collector and one-quarter to a regional trader (one level of aggregation higher than a village trader).

Figure 46: Average share of production sold to different buyers (farm survey)

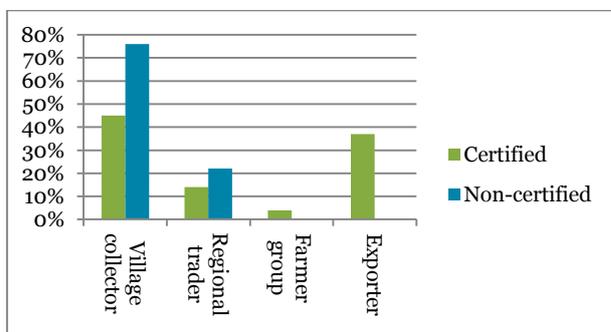
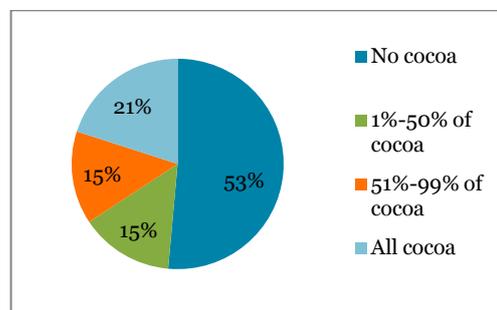


Figure 47: Proportion of certified farmers and share of their total volumes sold to an exporter (farm survey)



Prices

Certified farmers with improved market access received higher prices because of the lead price, certification premium and quality premiums. Focus group discussion revealed that farmers selling to exporters received higher prices than when they sold to alternative market channels (usually village collectors or regional traders). Lead prices were approximately 5% to 15% higher than prices paid by village collectors. Both traders also offered a price premium for certification and a premium for quality. The certification premiums varied between 2.4% and 3.6% of the lead price of 33.000 Rupiah at the time of our evaluation. Quality premiums, if present, were set at approximately 1% of the lead price. Farmers were not always aware of the different premiums. In one case, the premium was included in the buying price, which was close to the lead prices from other buyers. We also observed some confusion in whether a part of the premium which was paid after the season was for the farmers or for the lead farmer for cost recovery costs. (The certificate holder

explained that they considered this to be for the farmer, but that in some groups it had been decided to use it for the lead farmer).

Prices increased in 2015 compared to previous years. In focus group discussions, farmers considered current prices acceptable but still hoped for an increase to further improve the profitability of the crop.

In farm surveys we asked for the average price received in the last high season and last mid-season. Certified farmers received on average 9% and 15% higher prices. Farmers with at least half of their cocoa sold to an exporter, received on average 15% to 23% higher prices than those who sold less than 50% of their cocoa to exporters. However, this information is difficult to interpret as prices vary considerably according to quality (particularly moisture content) and the survey did not obtain accurate information on the average quality per farmer. The previous section we saw that that exporters demanded higher quality than village collectors or regional traders, which positively impacted prices but reduced volumes sold (the drier the bean, the lower its volume in kg).

Figure 48: Average price received per season – no differentiation in quality (farm survey)

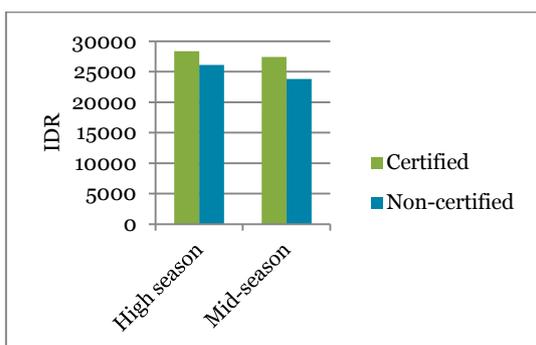
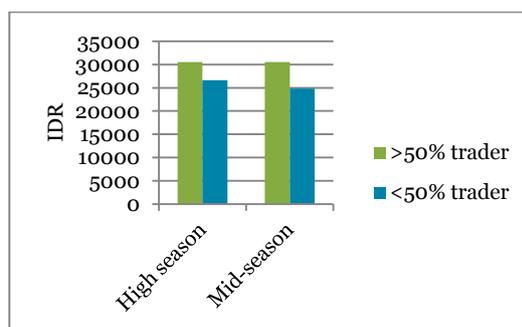


Figure 49: Average price received for farmers selling more or less than 50% of harvest to exporters – no differentiation in quality (farm survey)



Farmers valued stable trade relationships with lead prices and training much more than a premium. In focus group discussions, farmers felt that certification premiums contributed to their motivation, but these did not have an important impact on their income. Improving yields was considered to have more impact and they therefore highly appreciated the support they received to realize this. Farmers also valued the stable trade relationships with the exporters. When asked whether farmers were willing to continue the program without premium, almost all responded that as long as the trader would pay a lead price they would continue. Exporters also considered the premium to be an incentive to encourage farmers to join the program and to work on more structural income improvement through yield improvement. Farmers also reported thinking twice about another buyer offering a higher price. They would not change buyer immediately since they did not want to give up these stable relationships and related support. Only if other buyers would maintain higher prices, would they be likely to change. Program staff reported that some local buyers do sometimes offer higher prices, but generally cannot maintain them.

The direct relationship with the trader allowed farmers to receive price information. Both traders included in this evaluation supplied price information either by responding to requests for information or by SMS-service (one had started a few months prior to the evaluation). Farmers highly appreciated this. It also helped them in getting better deals from village collectors.

Access to finance

The majority of the farmers reported not needing a loan for cocoa farming. Those who needed a loan had access to informal sources, but not formal ones. The survey included questions on access to finance as this can be an important external influence on the adoption rate of some agricultural practices. None of the programs provided loans. According to farmers in focus group discussions and program staff, the majority of farmers did not need a loan for cocoa farming. In focus group discussions, farmers reported having difficulties obtaining a loan from a bank. When needed, informal sources could be accessed (e.g. village collectors, friends or family). Several farmers took credit from a village collector for consumptive purposes. The credit relationship with the village collector may also have contributed to the fact that not all certified farmers sold all their cocoa directly to the exporter - in addition to the transport costs to the buying station. One certificate holder was considering promoting a saving and credit scheme within the certified groups.

The farm survey identified that 29% of the certified farmers and 15% of the non-certified farmers had needed a loan for their cocoa farm in the past two years. Only half of these farmers had applied for a loan and only the certified farmers had received one. They obtained the loans from a village trader, farmer group or friends and family. One farmer obtained a loan from a local government bank.

Profitability

Most farmers experienced an increase in income and profit through the program. In focus group discussions, most farmers thought they were making a better living out of cocoa thanks to the program. Most related this to the improved yields. Those with improved market access, also referred to improved prices.

Farm surveys revealed that 69% of the certified farmers experienced an increase in profitability in recent years against 42% of the non-certified farmers (see Figure 50). Approximately half of the certified farmers were satisfied with the current profitability, while 17% of the non-certified farmers were satisfied (see Figure 51).

Figure 50: Development of profit in the past few years (farm surveys)

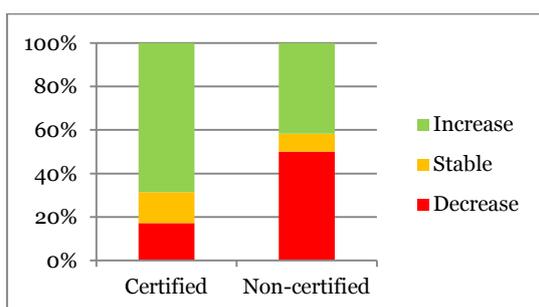
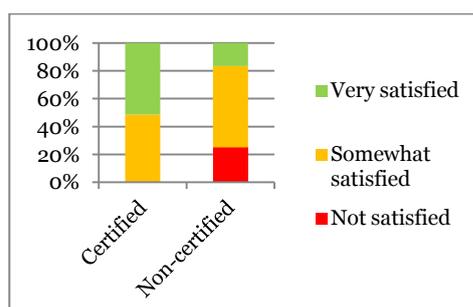


Figure 51: Satisfaction on profitability of cocoa (farm surveys)



4.7 Motivation of farmers

Conclusion: *Certified farmers had a considerably higher motivation to produce cocoa than non-certified farmers. This was mainly due to the increased attention and support, productivity improvement and the direct market access. The certification programs tended to focus on the more motivated farmers, but were able to further increase this motivation.*

Participation in the program increased farmers' overall motivation and commitment to cocoa farming. In focus group discussions, farmers were largely in agreement that the programs had increased their motivation and that this had increased their commitment. The following quote is an example: "Before the program, I went perhaps once a week to my farm, without motivation. Thanks to the program I am on my farm every day with a lot of spirit." Other farmers referred to an increase in "passion for farming". Most farmers confirmed spending considerably more time in the field since they joined the program. This was not considered a problem as farmers declared it was a worthwhile investment. This does not imply that all farmers always spent as much as time in the field as they needed to, nor that they followed all requirements all year long. Farmers explained that in certain periods of the year they might be too busy with other crops. They considered the 'reminder' provided by the programs on a regular basis (e.g. before the annual audit) as a useful exercise in restarting certain practices.

Several aspects increased motivation:

- Continuous service delivery and consequent visible impact of changed practices
- Secured market access and related higher prices
- The social dimension of relationships with the program technicians and other farmers
- Self-recognition by meeting the requirements of the program

Farmers highly appreciated continuous service delivery by the certificate holders.

Farmers may have received support from extension services or other programs, but these were looser relationships. In the evaluated programs the service delivery between farmers and certificate holders was more frequent and intense. These programs intend building long-lasting relationships - , especially if based on trade relationships or cooperative building. This was highly appreciated by farmers. The continuity in relationships did also contribute to farmers' discipline in maintaining a certain level of performance. Training alone did not appear to realize long-lasting change. Repetition and monitoring are also required.

The impact of changed practices is a key motivating factor for farmers. Farmers were motivated by the implementation of the practices learnt and their increased efforts resulted in better yields. Increased prices, whether the result of market conditions and/or improved market access, further increased motivation.

Whereas the relationship with the certificate holder provided farmers with access to valuable services (notably training and market access), farmers also appreciated the relationship in itself. Having someone providing personal support was a form of attention and recognition which farmers highly appreciated. This social dimension was frequently acknowledged. A related factor raised in expert interviews was that companies have a high social status in Indonesia, while farmers have a very low one. Having a relationship with a company made farmers proud, perhaps even prouder than having a relationship with an NGO or public sector. We had no opportunity to validate this with farmers.

The programs also promoted better group dynamics between farmers. Farmers appreciated belonging to a group in which one can meet, exchange information and analyze and solve problems together. Working with lead farmers promoted these dynamics. Setting-up a cooperative would take this to another level. This kind of social capital appeared to have an important motivating effect in all cases.

Meeting the program requirements or standard contributed to increased self-esteem. Some farmers noted that the program distinguished between good and bad performance. The program’s requirements function as a reference, and meeting these requirements creates a sense of self-satisfaction. The requirements themselves could not always be linked to UTZ as several certified farmers did not know what UTZ was or that they were UTZ certified. All they knew was that they were part of the certificate holders’ program and fulfilled their requirements.

Farm surveys confirmed that farmers appreciated the access to training most highly in the programs. Figure 52 shows that almost all farmers considered access to training an important benefit of the program. The access to market information and premium were considered a benefit by more than half of the farmers. Improved trade relationships and group management was mentioned by 40% to 50% of the farmers and access to inputs by one-quarter. Almost 10% mentioned access to finance. This is surprising as the programs reported not providing any funding.

Figure 52: Proportion of certified farmers reporting benefits of the participation in the program

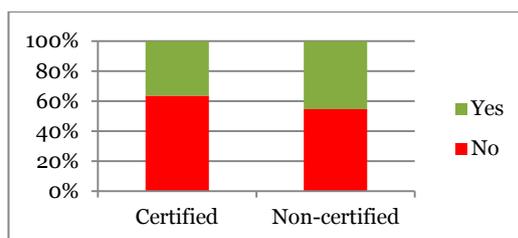


All farmers participating in focus group discussions were willing to continue in the program. An interesting case was the certified farmer group which had not had any communication, nor benefited from any services from the trader certificate holder for almost one year. They did not sell any cocoa to the certificate holder and received market prices from alternative buyers which were more or less comparable with those they would have received from the certificate holder. Despite of this inactivity and good alternatives in market access, the group was still interested in re-establishing its relationship with the certificate holder. They still saw the benefit of having continuous trade relationships based upon lead prices and expected additional value from the service provision.

Other farmers were interested to join the programs. In all focus group discussions, farmers reported receiving regular requests from neighboring farmers to join their group and program. One program has also received requests from a considerable number of farmer groups to join the program.

Increased motivation made farmers more willing to continue cocoa farming. Some farmers were also interested in expanding their cocoa farm. Some had already done so recently.

Figure 53: Proportion of farmers that wish their children become cocoa farmer (farm survey)



However, the lack of available farm land was often considered to be a constraint. Some farmers also invested in alternative crops, such as clove or oil palm. They did this for diversification rather than as a substitute for cocoa farming. Still, not all farmers in the programs had continued in the program. Notably in Aceh, the number of certified farmers in the program decreased in the past 2 years (with approximately 8%). According to program staff, farmers left the program because they abandoned cocoa farming: most because they had more important off-farm income opportunities (some sold their farm) or because they replaced cocoa with another crop (this last happened less frequently). The program staff expects that when market access, and thus better prices, are secured, farmers will be less inclined to abandon cocoa farming and the program.

Despite increased motivation the majority of the farmers still did not wish their children to become cocoa farmer, or farmer at all. In focus group discussions, different perspectives were shared on this topic. Some farmers did not expect their children to step into farming and children live today in school towns far away from their parents’ farms. They envision other careers. These children had little knowledge on farming activities. Other farmers had at least one child of which they expected that they may continue farming. They also expected that their increased own motivation would have a positive influence on their children’s motivation. Whether their children will produce cocoa will depend to a great extent to which extent this is a viable crop to farm compared to alternatives. The farm surveys revealed almost two-thirds of the certified farmers would not wish that their children produce cocoa. For non-certified farmers 55% did not wish this.

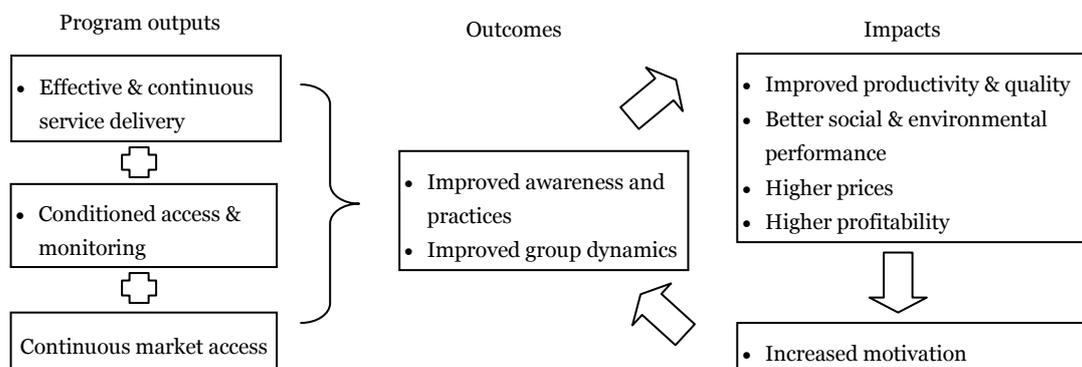
4.8 Conclusions on observed changes and UTZ contribution at farm level

4.8.1 Observed changes

In focus group discussions, farmers reported that the program’s training and follow-up support had improved their practices. Improved practices contributed to improved productivity, quality and social environmental performance. It also resulted in increased profitability.

Farmers also appreciated the improved market access which was obtained via programs (or the promise of improved market access). Improved market access generally resulted in higher cocoa prices and additional premiums, which positively influenced profitability. Improved market access was not always achieved: some farmers did not see any and to others selling directly to exporters was only beneficial if volumes were high enough as transport costs to the buying stations were considered to be high.

Figure 54: relationships between program outputs, outcomes and impacts



Farmers acknowledged that the pressure to meet the requirements as condition to stay in the program and the monitoring of compliance increased their discipline in some practices. Complying with the requirements also contributed to increased self-esteem.

The continuity in service delivery and trade relationships was appreciated and resulted in higher trust levels. The service delivery and related attention, in combination with the services and market access increased farmer motivation. Increased farmer motivation contributed to further improvements of practices. The programs also improved group dynamics between farmers which also contributed to increased motivation.

All farmers were willing to continue in the program and meet the requirements. The combination of services and lead prices were considered as main benefits. The premium was a welcome incentive, but appeared not to be a necessary condition for farmers to remain in the program.

4.8.2 Contribution of UTZ Certification

Results from the three impact pathways (on productivity, quality and market access) have to a greater or lesser extent been achieved by the programs. The contribution of UTZ certification to the observed improvements differed per case. The results achieved depended largely on the level of service delivery and market access that would have been available without certification. The following table provides an overview of the plausible contribution of UTZ certification to a selection of outputs, outcomes and impacts of the three farmer related impact pathways in three different point of departure scenarios. The three cases evaluated do not exactly fit the three points of departure but the results of the evaluation of these cases enabled us to assess UTZ's contribution for each point of departure.

In case 1, the exporter would probably have implemented a yield oriented program with direct market access regardless of certification. In this case, the added value of certification is improved farmer discipline due to the increased monitoring, a wider scope of topics promoted (environmental and social practices) and additional premium.

In case 2, the demand for certified cocoa made the exporter continue engagement with the farmers. Without this demand, it is unclear whether or with what intensity engagement would have continued. The contribution in such a situation can be considered large in all aspects.

In case 3, the NGO had a support program in place with a particular focus on yield and quality. As market access for certified cocoa had not yet been secured, the added value of certification was mainly improved farmers discipline due to the increased monitoring and some additional training on social and environmental topics. With secured market access farmers would also benefit from increased prices and a premium.

Next to the point of departure other factors determined the degree of success – whether the intended impacts could be realized by the programs. These were:

- Labor availability
- Access to planting material (for grafting)
- Access to subsidized fertilizers and financial resources / access to credit to buy them
- Access to drying and fermentation technology

Table 10: Contribution of UTZ certification within different scenarios of point of departure (light shaded relates to productivity and quality, medium shaded to market access, dark shaded to both)

| | Point of departure | Farmer with no or poor access to training and exporters | A yield oriented support program without secure market access | A yield oriented support program with secure market access |
|----------|--|---|---|--|
| Output | • Training on GAP and post-harvest | Large | None or some higher intensity | None or some higher intensity |
| | • Training on social & environmental practices | Large | Large (except PPE use, pesticide choice) | Large (except PPE use, pesticide choice) |
| | • Monitoring | Large | Large | Large |
| | • Establishment of direct trade relationship | Large (if realized) | Large (if realized) | Large |
| | • Market information | Potential | Potential | Potential |
| Outcomes | • Improved GAP and post-harvest practices | Large | Improved discipline | Some (by improved discipline) |
| | • Improved social & environmental practices | Large | Large | Large |
| | • Lead price paid | Large (if market access is realized) | Large (if market access is realized) | None |
| | • Premium paid | Large (if market access is realized) | Large (if market access is realized) | Large |
| Impacts | • Increased yield | Large | Some | Large |
| | • Increased quality | Large (if market access is realized) | Large (if market access is realized) | Large |
| | • Increased social & environmental performance | Large | Large | Large |
| | • Improved profitability | Large | Some (larger if market access realized) | Little |
| | • Increased motivation | High | Some | Some |

4.8.3 Considerations on impacts

All three programs improved farm performance with positive impacts on productivity, quality, and profitability. However, the question arises whether performance was improved to an acceptable level.

Full compliance with the Code of Conduct may require more time than the Code of Conduct allows, but it is clear that the programs instigate a steady improvement process in the right direction. Compliance with the UTZ Code of Conduct or program requirements was in general not considered to be very difficult. Nonetheless, the focus group discussions, surveys and field observations showed that farmers do not necessarily always comply with all requirements. The programs also reported that internal inspections do sometimes result in requests for corrective actions. Farmers may sometimes lack the time, resources or motivation to consistently implement the requirements. Examples of non-compliances were post-harvest handling, pesticide choice, removal of diseased pods, PPE use, chemical storage and disposal of empty pesticide

containers. Occurrences of non-compliance were not large and farmers were at least aware when they did not comply and knew they should eventually improve further. This evaluation showed clear indications that farmers have started to improve and showed also that certified farmers have considerably better performance than non-certified farmers on many topics. This evaluation showed the importance of continued support and a certain rigor in monitoring or control. Changing certain practices requires time and not every farmer is necessarily able to improve at the same speed.

Regarding productivity, the survey revealed that certified farmers performed considerably better than non-certified farmers, but performance was still far from optimal. Less than 10% of the certified farmers included in the survey reported yields of 1500 kg/ha or more. Only 20% had a yield of 1000 kg/ha or above. This means that there is still significant improvement needed in order to reach optimal yields. Farmers expected that further improvement should be possible by continuing and optimizing current practices. However, there is also an important need for additional grafting, replanting and more sophisticated pest, diseases and nutrient management. This may require more sophisticated training but also access to inputs including organic and chemical fertilizers. The big question is whether these certified farmers form a sufficiently strong base to take that next step of performance improvement. This evaluation could not provide a clear answer to this question and this will require additional research.

Exporters reported that the quality of the cocoa they bought from certified farmers did generally meet minimum requirements, but did not always meet desired higher standards. Further improvement appears to be possible in drying and fermentation practices. This will require more access and use of drying tools. Perhaps more importantly, is consistent access to markets which require and rewards higher quality.

4.9 Spin-offs at farm level beyond the certified cocoa farms

Conclusion: *The evaluation revealed several positive contributions outside of the certified cocoa farms. The programs also directly or indirectly impacted farmers outside the programs.*

During the field visits we observed several spin-offs by the programs.

Farmers have started to adopt certain practices also in other crops. In focus group discussions, farmers explained that once they had learned that certain pesticides were bad for health or nature, they also stopped using these on other crops and plots.

Pesticide sprayers at other farms adopted the use of personal protective equipment. Several farmers did not spray pesticides themselves, but paid specialized applicators to do this. It was the farmer responsibility that sprayers conform to the program requirements. In focus group discussions, some farmers explained that once the applicators had learned of the benefits of using personal protective equipment, they started to use them also in their work for other farmers. As this was not widespread practice yet, the programs could consider developing training activities targeting these specialized pesticide applicators.

Other farmers benefited from the trainings provided by the programs and copied the certified farmers. In several instances, farmers explained that non certified farmers often participated in the training provided by the programs. In some focus group discussions, certified farmers reported that non-certified farmers have started to copy practices some of the new practices. This was confirmed by two non-certified farmers who participated in one focus group discussion.

Certificate holders and public extension services adopted UTZ requirements in their activities with other farmers. Increased collaboration between certificate holders and public extension services also promoted alignment and more consistent messaging to farmers. Some program partners had adopted some of the requirements from the UTZ Code of Conduct and included these in their own standard farm support programs. These programs reach many more farmers than the certification programs. All programs also collaborated with the public extension services. Extension services were invited to participate in training sessions or provided some of the program's training and follow-up support themselves. Via this collaboration the public extension services took over certain practices or requirements in their own activities. In focus group discussions, farmers regularly referred to higher awareness among non-certified farmers due to changed public extension messages. The programs also contributed to increased capacity within the public sector. For example, in one case several former program staff joined the public extension services where they continued to advocate the program's outreach approaches and content.

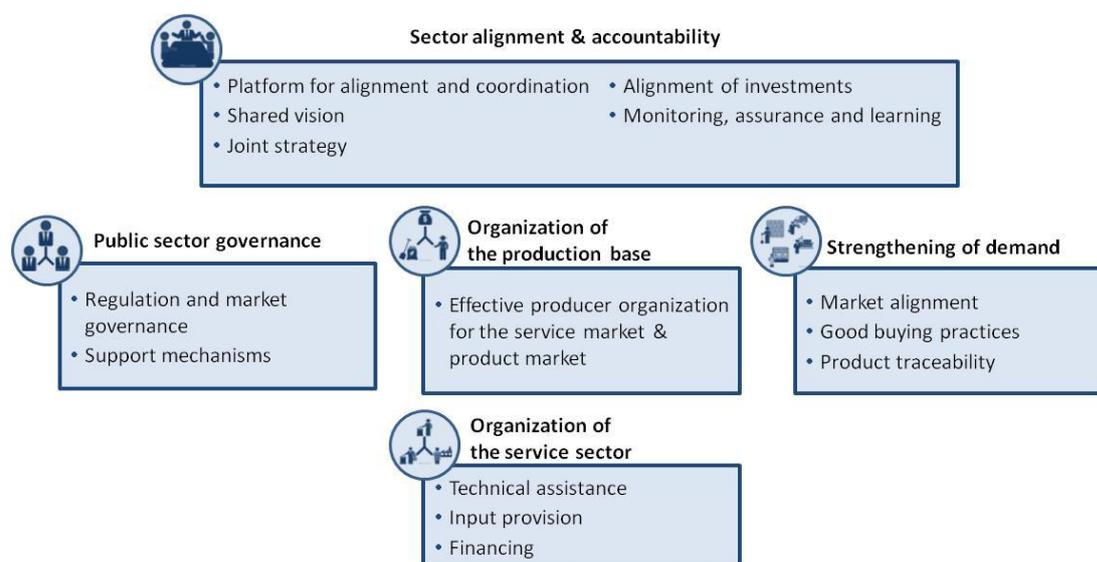
Increased price transparency by exporters, influenced prices paid by collectors. Most farmers sold small quantities of cocoa to village collectors instead of to exporters (due to economies of scale in transport costs). In one case, farmers noted that the price information they received from exporters gave them a better negotiation position towards village collectors. As a consequence, the relative prices paid by traders in that area had increased considerably.

5. Sector level: results and contribution

5.1 UTZ and sector transformation

This evaluation touched upon the influence of UTZ on the systemic changes required to transform the Indonesian cocoa sector. The sector transformation model developed by Aidenvironment, New Foresight and IIED (2015) provided a framework of five building blocks through which the sector could be analyzed and on which base strategies could be determined to achieve sector-wide change.

Figure 55: The five building blocks of sector transformation



Source: Aidenvironment, IIED, NewForesight (2015)

This section will discuss UTZ contribution to sector transformation through the lens of these building blocks. The results presented in this chapter are primarily based upon the key informant interviews.

5.1.1 Sector alignment and accountability

UTZ promotes knowledge about certification and related GAP in the national Cocoa Sustainability Partnership (CSP). In Indonesia CSP brings together multiple stakeholders with the aim of promoting sustainability of the full sector. The platform has identified key constraints to a viable and sustainable cocoa sector. It also formulates strategies and builds coalitions to overcome these constraints. The CSP has provincial platforms where a context specific process is facilitated. UTZ is member of CSP at national level. It is part of the Board and active in promoting knowledge among its members and the CSP Secretariat on certification and related good agricultural practices. The platform has an important role in aligning strategies and investments. For example, input companies are part of the platform in which they are confronted by a ban on certain pesticides they sell. One of the key informants explained that these companies are not happy with the ban of their products, but they do understand that in the future there will be less demand for certain pesticides and agree that promotional activities should focus on other products.

Whereas UTZ and other sustainability standards have for several years almost exclusively defined what sustainability looks like, the concept of sustainability in the cocoa sector has increasingly broadened to incorporate the concept of viable farming and community impacts. The code of conduct of UTZ and other standards have been and still are the basis for many of the investments by the cocoa industry and NGOs. The certification schemes also contributed to the promotion of a more consistent set of practices across locations and actors. However, in recent years, the need emerged in the sector to develop more in-depth concepts of sustainability with more emphasis on farmer economics of cocoa production and impacts at community level. Programs by Mars, Mondelez, Nestlé and Swisscontact (see chapter 2) have been developed in line with this; they try to create impact on some key topics instead of having certification as main instrument or goal. Some informants stated that certification has often become a minimum requirement for traders to do a program with their costumers, whereas five years ago it was the only requirement. As impacts start to be realized with alternative approaches, the value of certification concentrates more on accountability.

Certification has for a long time been the only credible assurance model in the sector, but alternative models are emerging. UTZ and other certification systems offer supply chain based assurance models as the basis for chocolate manufacturers' on-package claims. This has been particularly attractive as it directly improved corporate credibility towards consumers and other stakeholders. However, as labels become more mainstream, the competitive advantage of label use declines. The reduced value of the certificate led some companies to exploring alternative assurance models. In addition, key expert interviews revealed doubts about the credibility and efficiency of current assurance models promoted by certification systems such as UTZ. In search of alternatives, Mondelez has asked leading universities to monitor annually the progress of their programs in Indonesia. The difference with certification is that they organize the assurance process more independently of the program implementers (e.g. traders). They also focus on performance indicators rather than practices. If the industry gains confidence in the credibility of such approaches they may well become alternatives to certification.

5.1.2 Strengthening market demand

The overall tendency in the cocoa sector has been towards more direct trade relationships and certification has accelerated this transition. The demand for certified cocoa pushed the chocolate industry to increase transparency in their supply chains and pushed traders to reach out to farmers with direct market access and training. Traders traditionally relied on middlemen to source their cocoa. In absence of credible farmer organizations, the two traders included in this evaluation were obliged to go into the villages and approach farmers almost individually when setting up a certification program. The need to secure certified production also forced them to move physically closer to the farmer. For example, in South-East Sulawesi buying stations were usually only located in the big cities. As part of the programs, one certificate holder had opened buying stations at district level, while another certificate holder was thinking of setting up local collection points.

One question is whether this move towards the farmer would also have happened without certification. Key informants thought that the tendency to more direct supply relationships would have happened in any event as competition over supply has intensified in the last decade. They also thought that investments in farmer services would have taken place driven by concerns of reduced supply and farmers converting to other crops. The emergence of non-certification related farm support programs by the companies as Mars and Mondelez support this. According to the key informants, certification has certainly helped to accelerate this transition. The traders included in this evaluation thought that the scale and/or intensity of the farmer support would have most likely

been smaller without certification. The premiums paid by chocolate manufacturers were a critical incentive for traders to make the investments in certification and farm support. They also allowed payment of a premium to farmers, which increased farmers' willingness to join the program.

Direct trade relationships have today increasingly become the cornerstone for the cocoa industry to secure supply and channel investments to farmers. The shift from more market based relationships to more direct trade relationships, including service provision, can be considered as a systemic change with potential wide-scale impact.

5.1.3 Public sector governance

UTZ has not had much influence on national policies, but has indirectly positively influenced the capacity of local extension services. UTZ had few direct relationships with the public sector, but has engaged with them in multi-stakeholder partnerships. In collaboration with certificate holders they occasionally organized training on certification for public sector agents. Whereas we can consider that the effect of UTZ on national policies is limited, the spin-offs presented in the previous chapter revealed that the collaboration of the certificate holders with local public extension services have positively influenced the capacity and content of their services. UTZ certification can also be considered as an instrument which enabled compliance with the forthcoming stricter regulation on fermentation and traceability. From this perspective, it supports law enforcement.

5.1.4 Organization of the service sector

The demand for certified cocoa induced traders to invest in service delivery to farmers. Farmers needed support in order to comply with the UTZ Code of Conduct. In the absence of a reliable service sector, traders had the choice of providing this support directly or of collaborating with NGOs or public extension services. In the two trader cases included in this evaluation, this support was provided by traders with different degrees of collaboration with the public extension services. The two traders also became certificate holders with responsibility to manage the whole certification process (e.g. setting-up an internal control system, organizing audits, ensuring traceability, providing training). This required building internal capacity to manage the certification and to train and monitor farmers. The premiums paid by the cocoa industry have supported traders in building this internal capacity.

From a sector point of view, service delivery has increasingly become a part of the business model of traders. In addition to transportation and potentially processing of cocoa beans, farmer support services have become an additional value proposition they can offer to the chocolate industry and to farmers.

The demand for certified cocoa induced some NGOs to develop specialized services around farmer support and certification. The NGO included in this evaluation was the first in Aceh to provide training to cocoa farmers at scale. Throughout Indonesia, this NGO and other NGOs had similar programs. These programs were generally funded by donors, but increasingly with co-funding by the private sector. Once certification was established, part of the premiums could also be used to finance the capacity building efforts.

Whereas certification drove improved service delivery, it did not directly contribute to the development of a more independent service sector. Traders and NGOs are not necessarily stable service providers. As long as these actors continue what they do, this is not a problem. However, commercial considerations may make traders end support programs and NGOs

may need to stop if funding dries up. A mitigating strategy the programs apply is the collaboration with the public extension services. This may result in more continued service provision but is subject also to changing political agendas.

Two certificate holders were working on alternative approaches that had potential to ensure continuous service delivery. The NGO did this by setting-up a cooperative. Although the cooperative was at the time of the evaluation primarily busy in managing the Internal Control System and promoting market access, its ambition was to offer more services to its members. The program staff acknowledged that setting-up a cooperative was a risky venture requiring significant and a long term view. However, it was considered as a more permanent solution than the trader model in organizing service provision and market access. The program and cooperative considered certification as an important success factor to attract farmers into the cooperative and to maintain a certain level of service delivery.

One of the traders supported the establishment of cocoa village doctors. This program was part of their collaboration with Mars and was not related to their certification efforts. Mars had trained a group of farmers on GAP and business practices. These farmers were to set-up a demonstration plot and train farmers in their neighborhood. They would also have a nursery for income generation. The certificate holder coordinated this with ten farmers. Although the cocoa village doctors were still heavily supported by Mars and the trader, the intention was that these develop into permanent independent service providers based upon a sound business model.

5.1.5 Organization of production base

In the three cases, there were no farmer cooperatives which could manage the certification and organize the supply of certified cocoa. At best there were farmer groups at village level, called *kelompoks*, formed by the government. Many of these farmer groups existed only on paper and had no common activities other than perhaps facilitating access to subsidized fertilizers. Within this context, the certification programs had to organize farmers in trader networks, NGO networks or cooperatives. Each model had different consequences for how service delivery and market access could be organized and sustained.

The trader model may generate quick results but could also create high dependency of farmers on the traders for service delivery, certification and market access. The two traders in this evaluation had organized farmers in an Internal Control System. They made little use of existing farmer groups, *kelompoks*. The model seemed to be relatively easy to scale. Within a relatively short time these programs included thousands of farmers in the certification program. Although the two programs appeared to have positively influenced group dynamics, they did not (yet) have activities that empowered or strengthened the capacity for group management. Without this, the trader model could have some potential drawbacks. Trader driven certified supply chains could result in captive supply chains, in which farmers depend fully on the trader for their market access, service delivery and certification. In these models, the market access determines farmer access to services and certification. If a trader decides not to source certified products from a certain location, farmers will lose their certification and, most likely, the access to the services the trader provided. In one of the cases this was the reality. A change of ownership of the certificate holder jeopardized the continuation of participation in the program for several farmer groups.

The Indonesian competitive context reduces risks of exploitation and favors the creation of mutual beneficial relationships. The high dependency of farmers towards the trader may also make farmers vulnerable to exploitation; farmers may be 'locked-in' the trader network giving traders the opportunity to reduce prices. The evaluation showed that in the South-

East Sulawesi context this risk is not that large. None of the programs contractually obliged farmers to sell to the traders. Farmers also had sufficient alternatives to sell to almost comparable buyers. In fact, traders were obliged to pay a lead price if they wanted to see a return on their investments in the certification programs. In focus group discussions, we asked farmers whether they would continue the program if other buyers were to pay a higher price. Farmers quite consistently answered that if the difference would be very small, they probably would remain within the program and sell to the trader. But if the price differences would become higher and structural, they expected they would sell to another trader, even if this meant they had to quit the certification program. Farmers value long-term supply relationships based upon receiving a good price (i.e. lead price).

The trader model will only work if it is beneficial to both trader and farmers. Certification has certainly contributed to the creation of long-term supply relationships in the cases we visited. However, traders stressed that their success in continuing these relationships with the same intensity depends to a large extent on the market demand for certified cocoa. Another success factor was the ability to align the sustainability team, which manages the certification program, with the procurement team. Without this alignment conflict and discontinuity in relationships could result. In one case this was already evident.

Unlike the trader model, the NGO explicitly aimed to empower farmers by creating an independent farmer organization. In this model, the NGO had set up a cooperative. In the second year of certification, the cooperative was able to manage the internal control system, although still heavily supported by the NGO. The establishment of a cooperative was intended to result in increased self-determination and the ability to capture more value at producer level. This could be realized by, for example, increased yield, higher quality, better market access, improved capacity to negotiate contracts or by value adding activities. A certified cooperative would have the freedom to develop different markets for their certified cocoa thereby reducing dependency on one buyer. Unfortunately, the NGO and cooperative had not succeeded at the time of our visit. However, the NGO had several other projects throughout Indonesia which did result in immediate improved market access. According to the NGO, these other projects resulted in higher premium payments to farmers than in the trader model. Examples provided by the NGO in Sulawesi did indeed result in higher premiums than paid by traders to farmers in this evaluation. Another potential advantage of the cooperative model over the trader model is they can set-up their own member services, which can be continued even if buyers change. The drawback of the cooperative model is that it may take considerable investments and a long time before a cooperative is strong enough to function independently. The expectation of program staff is that this will take at least five to ten years.

5.2 Conclusions on observed changes and UTZ contribution at farm level

In conclusion, UTZ and other standards have defined sustainability and developed assurance models allowing accountability throughout the value chain. They have also driven the establishment of more transparent supply chains and direct trade relationships between traders and farmers. In these trade relationships, service delivery became an important component which further promoted the mutually beneficial and long-term character of these relationships. Although the creation of more transparent and direct supply chains would have probably occurred anyway, certification seems to have accelerated this process.

As an alternative to trader networks, certification has also promoted the organization of farmers into cooperatives. These cooperatives are supposed to become independent businesses capable of organizing member services and market access and of capturing more value

within the supply chain. Both the trader and cooperative models had advantages and constraints. There seemed to be a trade-off between short-term results and scalability on the one hand, and empowerment and more secure long-term service delivery on the other hand. In both the trader and the cooperative model (as well as in the NGO/service provider model), the demand for certified cocoa and related premiums are important to enable the necessary investments.

UTZ had limited direct impact on sector dialogue, public sector governance and strengthening of a service sector. UTZ was an active participant in the sector dialogue, but this process was driven by other actors. Its influence on public sector governance was limited, although at local level certain requirements from the Code of Conduct had been adopted by public extension services. Whereas certification drove improved service delivery, it did not directly contribute to the development of a more independent service sector.

As the previous chapter showed, certification will not necessarily be enough to improve farm performance structurally to a sufficiently high level. This requires additional services such as the distribution of seedlings, fertilizers, fermentation boxes and more sophisticated support in pest, disease and nutrient management. It is not clear whether the organization models that were set-up around certification (trader networks and cooperative) are suitable to channel those services. Whereas the premium paid to certificate holders appeared to be sufficient to cover the costs of capacity building and assurance costs, it is not certain whether it could cover the costs of these additional services. As this was recognized by many stakeholders, including CSP, alternative strategies are developed to realize these investments.

Conclusions and recommendations

Before commencing the field research we received the impression from informal conversations that the Indonesian cocoa sector was in a crisis with declining yields and production areas. Both the plantations and the farmers were considered to be old and farmers had lost motivation and were ready to abandon cocoa farming. Once in the field, we encountered a different situation. The farmers participating in the certification programs were highly motivated. The support they had received allowed them to increase performance and they intended to further improve performance. The key message the research team heard from conversations with the farmers was that the personal attention and continued service delivery provided by the programs made all the difference to them, especially if it was combined with direct access to a buyer paying the right price. The programs had turned many from passive unmotivated farmers into active farmers willing to improve. However, most farmers we met were not yet at a level at which they could be considered viable farmers. Nonetheless, the programs have undoubtedly instigated an improvement process and increased the chances that these farmers will become viable one day.

This last chapter presents the main conclusions with regards to the research questions and provides some recommendations to UTZ to further improve its impact.

Conclusions

The conclusions will be discussed along the lines of the main research questions.

Has UTZ certification contributed to increased productivity and quality?

This evaluation collected highly plausible evidence that the UTZ certification programs contributed to increased productivity and quality (including social and environmental performance). The results of focus groups discussions, key informant interviews, farm surveys and field observations showed a high degree of consistency. They all indicated that certified farmers had increased their productivity and quality since joining the certification programs. Both farmers and program staff considered the main driver for this improvement to be the training and follow-up support provided by the programs. The evaluation also found plausible evidence that certified farmers had higher yield and quality than non-certified farmers. With respect to quality: agronomic practices had improved cocoa bean quality, but the respect of good practices in post-harvesting was to a large extent dependent on whether farmers had access to markets which rewarded quality. Certified farmers also reported improved social and environmental practices – performing better than non-certified farmers.

Certification played a different role in the three cases included in this evaluation. In one case it was the main driver for providing training and support services to farmers and direct sourcing. The contribution of UTZ certification can be considered large in this case. In the two other cases, certification was more of an add-on to already existing farmer support activities, which in one case also included direct trade relationships. The contribution of UTZ certification in the observed changes was therefore smaller, but still included improved farmer discipline and more attention to social and environmental practices. Some of the changes also depended on other interventions, such as public sector efforts to promote side-grafting or post-harvesting practices.

Has UTZ certification contributed to better prices, to improved markets access and to improved income?

Improved practices and higher yields as a result of the programs increased profitability. We found plausible evidence that UTZ certification programs contributed to improved income of farmers through more efficient farming practices and higher yields.

In most cases, the programs also improved market access resulting in higher prices for the farmers. When market access was realized, it generally resulted in higher cocoa prices (lead price) and additional premiums, which positively influenced profitability. Due to a lack of buyers for certified cocoa or long distances to buying stations, the programs did not manage to secure market access for all certified farmers throughout the whole year.

Changes in market access did not necessarily depend only on UTZ certification and some of these would have been realized without certification. Consequently, it is difficult to determine the exact contribution of UTZ. Still, both program staff and key informants revealed that certification is a key driver to develop more direct sourcing relationships and it generates some premium to farmers. This evaluation showed that this premium is not a critical condition for farmers to remain in the programs; as long as they are paid a lead price and receive support services they expect to continue to be part of the programs.

What is the added value of UTZ certification when embedded in existing interventions?

Despite that some of the main impacts could have been reached without certification, this evaluation identified several advantages of certification when embedded in existing farmer support interventions. These differences can and do apply at both farm and certificate holder level.

At the farm:

- Inclusion of more training topics (notably social and environmental)
- More frequent follow-up support and monitoring together with conditioned access to services and market access both led to increased farmer discipline and improved performance and self-esteem.
- Farmers received additional premiums (when market access was realized).

For the certificate holder:

- The Code of Conduct was a useful framework for development of farm support packages
- A premium which could be used to strengthen internal support capacity resulted in more frequent and more intense support and monitoring.
- A premium was available to attract farmers into the program.
- Certificate holders were better able to communicate their sustainability efforts to external stakeholders.

What is the added value of UTZ in sustainable sector transformation?

UTZ, in common with other standards, had defined sustainability and developed accountability systems between farmers and consumers. These were important drivers for more direct trading relationships and farmer support and organization – all conditions for promoting sector-wide change. The UTZ code of conduct and other standards have helped increase consistency in farming support messages. The assurance models and certification have realized accountability throughout the supply chain. This increased the demand for certified cocoa and has raised additional finance from brands and retailers which has been invested

in the supply base. Certification has been one of the main drivers in developing more direct trade relationships, creating more transparency and redistributing value which would have otherwise been captured by middlemen. Direct trade relationships have increasingly become the cornerstone on which the cocoa industry secures its supply and channels investments to farmers. The shift from market based relationships to direct trade relationships with additional farmer support services, partly promoted by certification, can be considered as a systemic change with wide-scale impact. Certification programs promoted better organized farmers, whether in trader networks, NGO service delivery networks or in cooperatives.

However, there is an increasing call to go beyond what certification systems define as sustainable, resulting in new support programs and assurance models. A certified farmer did not necessarily mean a viable farmer. In this evaluation, farmers were satisfied with the progress they made, but not yet necessarily satisfied with the actual yield and profitability. Not all certified farmers were able to maintain a decent livelihood and make investments in optimizing farm performance. Whereas they were willing to continue cocoa farming, they did not consider it to be a sustainable livelihood base for the next generation. This requires another quantum leap and most likely additional investments and instruments. The cocoa industry had introduced new programs seeking better results in terms of yield, farmer economics and community impacts. The industry had also introduced its own standards and principles. Potentially these programs may replace certification as preferred instrument to realize the desired impact. This would reduce certification to an accountability only tool. However, some of the new programs had also started to test new assurance models. Some experts interviewed criticized the efficiency and reliability of current assurance models used by certification systems such as UTZ. It is not clear yet to which extent these new models will be more efficient and credible than certification – something for UTZ to watch closely.

UTZ had limited impact on sector dialogue, public sector governance and strengthening of service sectors. UTZ was an active participant in the sector dialogue, but this process was driven by other actors. Its influence on public sector governance was limited, although at local level certain requirements from the Code of Conduct had been adopted by public extension services. While certification has driven improved service delivery, it has not directly contributed to the development of a more independent service sector.

Recommendations

The study resulted in the following recommendations to UTZ:

Focus on service delivery

In this evaluation, the quality and continuity of service delivery appeared to be key success factors in improving farmer motivation and creating positive impacts. The latest version of the UTZ Code of Conduct included more requirements for the certificate holder for farmer training and support. This can be considered as a step in the right direction. UTZ may want to explore how it can add more value to improving the quality of service delivery. Besides including more requirements in the Code of Conduct (e.g. on grafting), UTZ could consider investing more in the development of additional training materials and in the certificate holders and their farmer support tools which could further improve the quality of service delivery. A concrete example is to develop training modules for specialized pesticide applicators. This could also include more guidance on how to monitor compliance continuously (and not only in the period prior to the audit) as monitoring can contribute to both farmer's discipline and motivation. UTZ could also consider promoting collaboration between certificate holders and public extension services or (semi-)commercial service providers. This could enhance alignment, continuity of service delivery and potential spin-off to non-certified farmers.

Increase market demand for certified cocoa

Farmers considered direct market access a key benefit of the programs. The NGO driven project had difficulties in finding a buyer for the certified cocoa. The traders apparently did not receive sufficient signals from their buyers to capture all certified production available. There seemed to be a need for improved market uptake and UTZ could intensify its efforts to promote this.

Increase awareness on certification

The concept of certification is relatively unknown in Indonesia. Many certified farmers included in this evaluation did not know they were certified by UTZ. Many did not even know UTZ; they only knew that they complied with the requirements of the program (which generally bore the name of the certificate holder). This is not a constraint as such, but more general awareness on the concept of certification, and UTZ in particular, could help in the promotion of certification among farmers.

Consider more outcome related indicators

A certified farmer was not necessarily a viable farmer. The cocoa industry and surrounding stakeholders were increasingly aware that the continuation of cocoa production required farmers performing at a certain level of yield and profitability. UTZ may consider adapting their model in such way that it promotes or rewards specific levels of farm performance; e.g. a certain yield performance.

Establish partnerships for additional investments

Training and certification has improved farmer performance. Reaching the next level requires additional investments, for example in grafting or nutrient management. Where the certification premium covered basic training and assurance costs, the facilitation of access to farm inputs and technology required additional investments. UTZ may consider setting-up or joining coalitions which raise these investments. UTZ could add value to such coalitions by organizing the accountability of the investments made.

Follow-up emerging corporate programs closely

The leading chocolate manufacturers were starting to develop their own programs and standards. It is recommended that UTZ engage in dialogue with these companies to understand why they are introducing these new programs, while certification already exists. Some of these programs were also starting to explore different models of assurance. UTZ is recommended to follow these developments closely to see whether there are elements which could reinforce UTZ's model and to see how where UTZ could be of value in these new developments.

Develop more specific guidance on impact evaluations

Finally, this evaluation made use of a mixed-methods approach based upon a theory of change and impact pathways. This differed from the original terms of reference of a statistical representative sample of smallholder surveys in combination with some additional background interviews and data analysis. The inclusion of sector level impacts was also a relatively new. It is recommended that UTZ carefully reviews the benefits and constraints of this approach. We believe that this approach generated more 'value for money', as it was not too costly while still generating highly plausible insights and many useful lessons in a more holistic approach to certification and sector transformation. We expect that the approach that we have applied is replicable to other sectors where UTZ operates. In addition, we recommend UTZ develop more specific guidance on what they expect from future impact evaluations in terms of scope and methodology. This can contribute to more focused and consistent evidence of their impact as well as insights into potential for further improvements.