The IDH Cocoa Productivity and Quality Programme (CPQP) in Côte d'Ivoire

Impact assessment framework and baseline

Verina Ingram, Yuca Waarts, Lan Ge, Simone van Vugt, Lucia Wegner, Linda Puister-Jansen, Francois Ruf and Roger Tanoh

WAGENINGEN UR
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the sustainable trade initiative

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LEI Wageningen UR
Wageningen, July 2014

REPORT
LEI 12014-016
ISBN 978-90-8615-679-5

V. Ingram, Y. Waarts, L. Ge, S. van Vugt, L. Wegner, L. Puister-Jansen, F. Ruf, R. Tanoh, 2014. *The IDH Cocoa Productivity and Quality Programme (CPQP) in Côte d'Ivoire; Impact assessment framework and baseline.* Wageningen, LEI Wageningen UR (University & Research centre), LEI Report 2014-016. 196 pp.; 83 fig.;18 tab.; 16 quotations; 33 photo.

Team: LEI Wageningen UR led in partnership with the Centre for Development Innovation (CDI) of Wageningen UR, the French Centre de Coopération Internationale et Recherche Agronomique pour le Développement (CIRAD), and Ivorian research organisation Agriculture et Cycles de Vie

Field research: Agriculture et Cycle de Vie (A & CV) collected field data, led by Roger Tanoh and Abel Galo and advised by Francois Ruf, Verina Ingram and Simone van Vugt. Verina Ingram, Simone van Vugt and Lucia Wegner also conducted field interviews.

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Field research: November 2012 to June 2013. Workshop to review findings November 2013. Final Report December 2013. Updated integrating comments: May 2014.

Measures and conversion: Monetary units are stated in the official currency of Côte d'Ivoire, the African Financial Community franc (Communauté Financière Africaine) (CFAF) and euros. The prevailing exchange rate during the research period was 655 CFAF to 1 Euro (€).

Measures are given in metric tons and kilograms (kg) and in hectares (ha).

The term 'control' denotes non-certified farmers used as a comparison to the farmers participating in the CPQP.

The term statistical significance uses asterisks as follows: * p<=0.01 at 95% level of confidence and ** denotes p 0.05 levels deemed 'highly' significant, at least 99% level of confidence. See Box 1 for additional information. In most figures the mean value is displayed with the median value shown by a red square.

IDH counterparts: Dave Boselie, Jonas Mva Mva, Renske Aarnoudse and Alphonse Kossonou.

Citation suggestion: Ingram V., Waarts Y, Ge L., van Vugt S., Wegner L., Puister-Jansen L., Ruf F., Tanoh R. 2013. The IDH Cocoa Productivity and Quality Programme (CPQP) in Côte d'Ivoire. Impact assessment framework and baseline. LEI Wageningen UR. Den Haag, the Netherlands.

Key words: cocoa, Ivory Coast, certification, sustainability initiatives, baseline, impact assessment

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LEI is ISO 9001:2008 certified.

LEI Report 2014-016 | Project code 2273000527

Cover photo: Roger Tanoh

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Acknowledgements

This study is the result of close collaboration with the Sustainable Trade Initiative (IDH) and their partners UTZ Certified and Solidaridad. The baseline benchmarking and development of indicators was supported by the 'Enhanced sustainability of the imports of cocoa and coffee to the Netherlands: synergy between practice, policy, strategy and knowledge' (BO-10-030-001) project, financed by the Dutch Top sector research initiative and the Policy Support Programme for International Cooperation of the Dutch Ministry of Economic Affairs.

We are particularly grateful to all the cocoa farmers, producer groups, exporters and traders, ANADER staff, schoolmasters and other interviewees for their time and cooperation during interviews and the verification meetings.

Preface

Côte d'Ivoire has been the world's largest cocoa exporter since the 1980s. The cocoa sector faces a number of challenges such as low productivity and smallholder farmer incomes, poor working conditions, complex labour issues and environmental challenges such as deforestation and climate change.

The Sustainable Trade Initiative (IDH) aims to accelerate and up-scale sustainable trade by building impact-oriented coalitions of multinationals, civil society organisations, governments and other stakeholders through co-funding and convening public and private interests, strengths and knowledge. The IDH Cocoa Productivity and Quality Programme (CPQP) is a four-year programme that aims to mainstream the results of the previous Cocoa Improvement Programme (CIP1). It seeks to assist smallholder cocoa farmers to move out of poverty and make a transition to running viable businesses for sustainable cocoa production. The programme promotes four tools to do this: good agricultural practices (GAPs), standards systems (certification), farmer aggregation and financing mechanisms.

In 2013, IDH commissioned LEI Wageningen UR to set a baseline for this programme. LEI Wageningen UR led the study in partnership with the Centre for Development Innovation (CDI Wageningen UR), the French Centre de Coopération Internationale et Recherche Agronomique pour le Développement (CIRAD), and Ivorian research organisation Agriculture et Cycle de Vie (A & CV).

This report presents the results of the independent baseline survey and assessment framework carried out by the research team. It contains an evaluation of the effectiveness of the cocoa programme in bringing about improvements for cocoa farmers and cooperatives participating in the programme. The report also presents the lessons learnt and provides recommendations to improve the quality of the programme.

We are greatly indebted to farmers and their cooperatives for the information they provided, also to our partners at A & CV for collecting the data. We thank IDH and partners for their assistance and collaboration, providing us with information and constructive feedback.

Ir. L.C. van Staalduinen
Director General LEI Wageningen UR

Acronyms and abbreviations

ACI	African Cocoa Initiative
ANADER	Agence National d'Appui au Développement Rural (National Agency for Rural Development)
CAADP	Agriculture Development Programme
CDC	Cocoa Development Centres
CFAF	Communauté Financière Africaine franc (African Financial Community franc)
CIP1	Cocoa Improvement Programme 1
CISCI	Côte d'Ivoire Sustainable Cocoa Initiative
CNPS	Caisse Nationale de Prévoyance Sociale (National Social Security Fund)
CNRA	Centre National de Recherche Agronomique (National Agronomic Research Centre)
CPQP	Cocoa Productivity and Quality Programme
CVC	Cocoa Village Clinics
EFA	Projet Ecoles Familiales Agricoles (Family Farm Schools Project)
FLO	Fairtrade International
FFS	Farmer field schools / Champs écoles ou Champs écoles paysans
FS	Field apprenticeship / Champ d'apprentissage
GAP	Good agricultural practice
GlobalGAP	Private sector voluntary standards setting body for certification of production processes for agricultural products
ICCO	International Cocoa Organisation
ICS	Internal Control System
IDH	Sustainable Trade Initiative
IITA	International Institute of Tropical Agriculture
ILO	International Labour Organisation
LEI	Agricultural Economics Institute of Wageningen UR
LF	Lead farmers / *planteur relais (PR*)
PEFAC	Plateforme des Ecoles Familiales Agricoles de Côte d'Ivoire (Plaform of Family Farm Schools in Côte d'Ivoire)
PPE	Personal protective equipment
PRODEMIR	Economic and Rural Development Programme / Programme de Développement Economique en Milieu Rural
RA	Rainforest Alliance
SAN	Sustainable Agriculture Network
STCP	Sustainable Tree Crops Programme
ToC	Theory of Change
ToR	Terms of Reference
UNDP	United Nations Development Fund
USAID	United States Agency for International Development
WAFF	West Africa Fair Fruit
WCF	World Cocoa Foundation
WWF	Worldwide Fund for Nature

Summary

S.1 Introduction

The Sustainable Trade Initiative (IDH) aims to accelerate and up-scale sustainable trade by building impact-oriented coalitions of multinationals, civil society organisations, governments and other stakeholders through co-funding and convening public and private interests, strengths and knowledge. IDH's four-year Cocoa Productivity and Quality Programme (CPQP) builds on the Cocoa Improvement Programme (CIP1), which ended on 31 December 2012. The CIP helped UTZ Certified to develop its Code of Conduct for cocoa and to stimulate the market for certified cocoa. The aim of the CPQP is to assist large numbers of smallholder cocoa farmers to move out of poverty and make the transition to running viable businesses for sustainable cocoa production by promoting a variety of tactics and tools to create change in cocoa production, focusing on: productivity improvement based on good agricultural practices (GAPs), standards systems (certification), farmer aggregation, and increasing access to services, inputs and finance. The CPQP aims to support the training of over 50,000 farmers and certify over 30,000, to produce over 64,000 tonnes of certified cocoa and make UTZ Certified cocoa widely available in the international market. The CPQP brings together more partners than the CIP1 to cover over 40% of the worldwide cocoa processing industry and 30% of worldwide chocolate manufacturing businesses. It seeks to involve local governments and other stakeholders. Alongside UTZ Certified and Solidaridad, participants include Ahold, ADM, Armajaro, Barry-Callebaut, BT Cocoa, Cargill, Continaf, Ecom, Ferrero, Friesland Campina, Mars, Heinz, ICCO, Nestlé, Swiss Contact, Oxfam Novib, Petra Foods (Delfi), UNDP, WCF and WWF.

S.2 Objectives

This report provides a baseline of the farm-level situation in mid-2013 and can be used to measure changes in future impact assessments. It provides information about the **inclusiveness of the CPQP in Côte d'Ivoire.** It presents an evaluation of how certification and related activities by the CPQP and partners have affected cocoa farmers' **knowledge and implementation** of good agricultural practices, social and environmental issues and related behaviour/practices in Côte d'Ivoire and the results of these in terms of people, planet and profit, as well as an assessment of the **added value of certification. Lessons learned** are drawn from the results, feeding **recommendations** to improve the quality and effectiveness of the programme.

S.3 Evaluation approach

Independent, evidence-based assessment
IDH commissioned the Agricultural Economics Institute (LEI) of Wageningen University and Research centres to provide this independent baseline study and assessment. The study was led by LEI Wageningen UR in partnership with the Centre for Development Innovation (CDI Wageningen UR), the French Centre de Coopération Internationale et Recherche Agronomique pour le Développement (CIRAD), and the Ivorian research organisation Agriculture et Cycles de Vie (A & CV).

Rigorous quantitative data collection with qualitative interviews
In 2013, quantitative and qualitative interviews were conducted with 944 farmers in 97 producer groups. A representative sample of 730 farmers in the CPQP was selected. These farmers are members of 89 cooperatives that are connected to seven different traders participating in the CPQP for different periods of time and are situated across the three main agro-ecological zones across the country. A control group of 214 farmers who had not participated in the programme was selected. These farmers are members of nine cooperatives, situated in the same three agro-ecological zones at

least 10 kilometres from cooperatives in the programme and are not UTZ certified. In-depth interviews were also conducted with 19 of the cooperative managers, village chiefs, groups of villagers and support organisations to obtain more qualitative information on impacts. The size of 99 farms was measured.

Establishing representative indicators with stakeholders
Fifteen environmental, economic and social indicators were used to measure the impact of the programme activities implemented between 2008 and 2013. These correspond to the IDH impact logic for the CPQP, grouped to look at 'people', 'profit' and 'planet' and to answer IDH's questions about inclusiveness, knowledge and implementation of best practices and added value. Using the results of the interviews, farmers' perceptions of changes in the indicators were analysed and statistical and qualitative analyses of the indicators were conducted. Comparisons were made of indicators to see whether there were any significant differences between the following groups of farmers:

- Farmers participating in the programme for different lengths of time (ranging from zero to five years).
- Farmers located in different agro-ecological zones.
- CPQP participants and non-participants (a control group).
- CPQP farmers who are UTZ Certified and those who are not yet certified.

The results were also benchmarked against existing data on the indicators and an assessment of external influences that could affect farmers' performance on the indicators, such as the effect of the weather and the Ivorian government's reform of the sector. The preliminary results were presented and verified at two meetings with five cooperative managers and representatives of seven traders, IDH, Solidaridad and the research team in Abidjan and Amsterdam in October 2013. This report presents the final analysis and helps provide a reference situation as of 2013, providing a baseline against which impacts can be measured in the future.

S.4 Impact Indicators

People Social
1. Farmer characteristics
2. CPQP Certified programme inclusiveness
3. Livelihood and standard of living
4. Sustainable practices rewarded by the market (including premium)
5. Stability of producer groups, services provided and access to market
6. Labour rights
7. Child labour and rights
8. Healthy and safe living and working conditions
Profit Economic
9. Farm efficiency
10. Productivity
11. Quality
12. Profitability and long-term viability of farmers and groups
Planet Environmental
13. Soil and water quality
14. Waste management and reduction (related to cocoa production)
15. Protection restoration of natural habitats (on/near farm)

S.5 Key findings

Certification schemes upon which the CPQP is built are generally inclusive, but female farm owners and workers are under-represented. The up-scaling of certification programmes and the range of associated support activities provided to over 44,000 cocoa farmers between 2008 and 2013 was both rapid and extensive. All the targeted farmers reported participating in activities such as support for producer group, training on good agricultural practice and support to become

UTZ Certified. Compared to the control group, more farmers (between 6 to 20%) benefited from access to services to improve crops, such as crop protection products, fertilisers, seedlings and credit. Between 8 and 13% of farmers participating in the CPQP benefited from inclusion in community and social programmes. This is a similar proportion to the control group. Certification is implemented through registered members of a producer group. The focus of the CPQP on cooperatives means that unorganised farmers are only able to structurally benefit from activities when they join a group. Whilst a producer group focussed strategy has been effective in reaching large numbers of farmers and aiding access to traders to both sell their produce and receive support services in the last five years, comments made by farmers and producer groups indicate that further support to strengthen and professionalise producer groups is essential to ensure that this strategy succeeds. As the vast majority (97%) of participants are male farm owners and share croppers, women and youths have been less structurally included in activities. This is important as women are a target group of the CPQP. Both women and youths, either as family members or paid labourers, also perform a large amount of work on cocoa farms. Youths represent the future generation, given the advanced age of most farmers. As many farmers train their wives, children and workers, knowledge relevant to good agricultural practices and certification standards is passed on. However, the extent to which such knowledge is actually implemented on-farm is not known.

Certification seems to contribute to influence farmers' knowledge and implementation of good agricultural practices. Knowledge levels and implementation were predicted in the impact logic to improve with certification and training. This baseline shows the level of knowledge and practices of participating and control farmers regarding good agricultural practices and the environmental standards and working conditions required as part of the UTZ Code of Conduct. Farmers in the CPQP have higher knowledge and implementation scores than control group farmers. Certified farmers have higher levels of knowledge and implementation than uncertified farmers. Higher levels of knowledge and implementation were associated with other variables, such as the agro-ecological zone, farm size and type of ownership, and group membership. Multiple certification was also found to positively affect knowledge levels. Farmers with multiple certifications (UTZ and Rainforest Alliance) have higher knowledge levels than non-certified farmers. This is attributed to the similar types of knowledge acquired through the different certification schemes.

Farmers with higher knowledge levels implement GAPs in a better way than farmers with lower knowledge levels. However, both CPQP participants' and certified farmers' knowledge and implementation levels are relatively low, with on average 25% of farmers responding correctly to the questions concerning their knowledge and implementation of the standards contained in the UTZ Code of Conduct. This was an anticipated impact of training and certification and follows the CPQP impact logic that certified farmers comply with the standards set in certification schemes for health and safety, workers' rights and working conditions. However, whether increased levels of knowledge and skills can be attributed to training and certification programmes, or to other factors, such as prior knowledge before joining the CPQP, will only be apparent in subsequent assessments.

Particular areas of low knowledge and practices are children's and labour rights, personal protective equipment, waste management and composting, weeding, record keeping, shade trees, soil conservation and field buffer zones, fertiliser and crop protection use, pruning and disease management. Farmers and stakeholders suggested that improvements could be made to increase the frequency, quality and quantity of training, particularly in-field and focused on the GAPs that farmers find more difficult to implement, and the competences of trainers. As certification and training have been up-scaled, farmers noted that their quality and intensity have changed, in some instances decreasing. Farmers requested that trainers adapt to farmers' learning styles, expressing a preference for extension and field-based learning, rather than classrooms.

Given that this is a baseline and most of the CPQP started in the field only in mid-2012, impacts are not yet visible or attributable. These can only be cautiously interpreted from previously initiated certification and related activities, which appear to contribute to improve farmers' social and economic situations. There appear some limited, positive impacts on the environment. Attributing these impacts to the CPQP will be possible only once this baseline situation has been compared to their position in the future. Farmers are generally satisfied with their livelihoods, their producer groups and the services they provide, as well as the traders they sell to. They indicated positive developments in a safer working conditions. However, compliance with and respect of some labour and children's rights are low. Certification and related activities are positively correlated with impacts on productivity, efficiency and incomes. Farmers in the CPQP have statistically significantly higher productivity than non-certified farmers in the control group, as do certified farmers compared to non-certified farmers. These figures are comparable to benchmark figures for Côte d'Ivoire, but remain lower than productivity in other countries. However, the accuracy of reported productivity per hectare is questionable, given farmers' tendency to over-estimate farm size. Around 60% of farmers attributed productivity improvements to a certification programme, especially GAPs. Farmers in the CPQP have higher total production costs, but significantly lower production costs per kilogram than uncertified farmers. However, although CPQP farmers have lower costs per kilogram, they do not have higher efficiency ratios. This may be due to a time delay, as changes in farming take time and this study is the first measurement.

Farmers generally feel 'stuck' in cocoa farming, cannot easily change or enhance their means of cocoa-based income and have no or few other opportunities to generate cash. As a result, cocoa is generally not seen as a viable option for the future. Most farmers would not encourage their children to be cocoa farmers. Certification and related activities aim to reverse this trend by focussing attention on and revitalising the sector.

Practices that improve the environment, particularly soil and water quality and conservation appear to have had limited impact to date This may be due to the timescale involved before environmental impacts are apparent, as well as the methods used to determine changes in indicators concerning soil and water quality, waste management and natural habitats on and near farms.

By organising farmers into producer groups and assisting in their professionalisation, certification and training have been up-scaled considerably, providing a basis for broad support programmes of the four traders participating in the CPQP. Farmers' participation has also enabled up-scaling, albeit on a smaller scale, of access to inputs to crop protection and fertilisers, and pre-finance and credit, for between 6 to 20% of farmers. Producer groups provide both social capital and a forum for learning and exchange, and are positively associated with obtaining access to credit, farm inputs, other services and buyers. Not all farmers enjoy these benefits, however, and most still do not have sufficient access to credit, inputs or to seedlings to rejuvenate their cocoa farms.

Partnerships between IDH, traders, certification schemes, non-profit organisations, the Ivorian government extension service and cooperatives appear to be important channels that add value to certification for farmers and enhance its effect by providing a range of services needed by farmers. Partnerships may contribute to improving the effectiveness and efficiency of certification, as duplications of effort are avoided. However, a perceived negative impact of multiple certification schemes is that they create more effort and costs for farmers, producer groups and traders. This is an example of where collaboration and partnerships could help minimise or mitigate such impacts. Recent studies (KPMG 2012, GBCG 2012) appear to confirm the perceptions of farmers and producer groups that they bear substantial costs related to certification. An analysis of the full financial and economic costs and benefits for farmers in different stages of certification and a control group is recommended, taking into account that most farmers do not keep records of their costs and benefits. The many different activities implemented by traders in the framework of or associated with certification, highlight that certification enables farmers to be reached by traders and the organisations running projects and programmes.

The certification premium – the market reward for sustainable, responsible production - is one of the most important motivations for farmers to become certified. The premium embodies the market

reward for sustainable, responsible production. It is an incentive for farmers, particularly in the earlier stages of participation when the expected productivity and quality increases have not yet become apparent. However, the premium represents a small proportion of the total price gained by farmers (7% of the total kilogram selling price). The premium receives a lot of attention, as most producer groups pay out premiums separately from main payments for cacao beans. The premium is also used to create loyalty and recognition between farmers, their producer groups and traders. Farmers and farmer groups expressed concerns that, if payments of the premium were discontinued, one of the main added values of maintaining the certified status for them would disappear. The indicators about productivity, income and efficiency suggest that a refocus on increasing the overall price and profit earned by farmers on certified beans, rather than the excessive focus on the premium, would be of more benefit to farmers in the long term.

Certification has supported and massively promoted collective action. Farmers note numerous benefits of their producer groups, such as marketing their beans at a good price, access to information and training, providing a forum for exchange and building social capital. Services to producer groups provided by the CPQP (and by other traders and projects) have resulted in improved farmer access to seedlings, crop protection products and credit. Activities associated with certification, often provided by traders, have also contributed to the professionalisation of producer groups, by providing management training, models for internal control systems, financial support, equipment and transport. However, many farmers indicated that better access to sufficient credit and inputs, as well as other farm and non-farm related services, are still required to improve farming and their families' livelihoods, and that support to help manage and diversify revenue sources is required. However, the current scale, frequency and timing of the provision of these services requires up-scaling to benefit the majority of farmers in the CPQP.

Certification has also had some unintended outcomes. It has added to farmers' difficulties in managing large, seasonal cash flows. The auditing process is perceived as open to corruption. The premium setting process is seen as not transparent and does not appear to be linked to actual costs at farmer, producer group or trader level. Multiple certification is complex and has been difficult for some traders and producer groups to manage. The rapid up-scaling and out-scaling of certification related activities (especially training) has resulted in perceptions of a variable quality, lack of minimum standards, with possible influences on farmers' knowledge and practices.

There appears to be an added value of the process of certification combined with support activities. Farmers indicated that implementing the good agricultural practices taught as part the certification programme, lead to higher productivity and therefore higher income. The initial baseline and impact assessment lend some support to this. The added value of the certification programme combined with training and other assistance, is that farmers obtain certification premiums and that producer groups and traders provide services that farmers indicated are needed and that they are satisfied with. Certification influences trading practices to produce a range of positive outcomes. Certified farmers, as members of a producer group, have access to traders and generally sell only to those traders who have provided them support. For farmers, this adds value by responding to the major needs. For traders, this loyalty provides a secure source of certified, good quality bean supplies. These relationships help secure market access for farmers and their groups and increase access to support services that improve production. These enhanced relationships also allow access to other social and community activities, which were prioritised lower but still remain as priorities for farmers. Farmers indicated that particularly healthcare, schools and infrastructure continue to be issues of concern affecting livelihoods in their communities.

The CPQP impact logic seems to be correct that certification and associated activities and inputs contribute to economic outcomes. It assumes that higher knowledge is related to improved implementation of good agricultural practices, higher productivity, higher net income and higher satisfaction levels with regard to farmer livelihoods. Both higher knowledge levels and improved implementation of record keeping are positively correlated with increases in measured increases in productivity, net income and livelihoods. No relationship was found between the implementation of GAPs overall or the implementation of post-harvest practices and bean quality, indicated by the rate of rejection. This may be affected by external factors, such as the institutional reform of the cocoa sector

in Côte d'Ivoire in 2012. Overall, higher knowledge levels are positively related to improved implementation of GAPs, confirming the impact logic. However, for specific agricultural practices (waste management and soil, water and biodiversity protection), this was not the case. To ensure that these outcomes are met, particularly with the later entrants and possible new entrants into the programme who have slightly different characteristics, adjustments in how the programme is implemented are recommended.

The social outcomes are only partially met, as certified farmers report better and safer working conditions. However, the outcomes of including female owners in the programme and certified child labour free cocoa farming require further actions to make an impact. The ecological outcomes also appear to be only partially met: whilst chemical use complies with national recommendations, indicators of farm rehabilitation and regeneration – such as access to improved seedlings and acquiring grafting skills – are low. The CPQP logic also assumes that inputs will result in higher productivity. As a smaller number of farmers have been involved in interventions to access to fertiliser (7%), credit (24%), seedlings (11%) and pesticides (36%), testing that higher productivity has resulted from these interventions will be only possible in a future impact evaluation.

S.6 Lessons learnt and recommendations

Cocoa is clearly critical to the livelihoods of the farmers involved in the CPQP, as it is the only or the main source of cash income for most of them. Improving the economics, social aspects and environment of these cocoa farmers, however, extends beyond the cocoa fields (as farmers grow other cash and subsistence crops) and beyond certification (which has a specific focus). To have sustainable, diversified livelihoods a holistic view of the interaction with other subsistence and cash crops that complement cocoa is needed. More than a single commodity focus of the CPQP may be needed to improve livelihoods. This may mean testing new diversified business models that will persuade cocoa farmers and their children to continue to grow and process certified cocoa. This may require a shift in mind-sets to think more broadly about the role of certified cocoa as one (albeit important) element in the livelihoods of farmers, their families and their workers (male and female, young and old). This implies continued partnerships and dialogues, as many of these issues go beyond the current boundaries of traders' and partners' activities and spheres of influence. Effort needs to be made to ensure that the benefits and costs of certification are clear and transparent to all stakeholders, and that efficiency in (multiple) certification processes is ensured. As certification cannot or does not satisfactorily respond to all farmers' needs, combinations of activities, such as those used in the CPQP, appear to be important to convince farmers and producer groups that verifiably sustainable cocoa is a viable farming and livelihood option in the long term for both them and their children.

Suggestions for the future direction of the CPQP in Côte d'Ivoire are:

- Include workers and particularly women and youths as target groups in activities.
- Further address ways to increase farmer productivity and efficiency and reconsider how to enhance market rewards for sustainable production to focus on profitability at farmer and producer group level.
- Address areas of low farmer knowledge and implementation of specific good agricultural practices; and particularly evaluate the efficacy of training techniques used over time with different farmers.
- Maintain a continued focus on ensuring that the worst forms of child labour are eliminated and that children's rights and labour rights are respected. Supporting initiatives that support children's schooling (such as ensuring access to schools in cocoa communities) will remain essential in eliminating child labour.
- Soliciting, listening to and taking into account farmers' and stakeholders' perceptions of their needs (such as pesticide and fertiliser inputs, seedlings, improved plant material, credit, insurance, business training) and the feasibility of integrating their suggestions into the CPQP and/or partners support programmes are also recommended.

S.7 Looking ahead

While this preliminary evidence suggests that the CPQP has contributed to improving the livelihoods, communities and environments of cocoa farmers in Côte d'Ivoire, it also raises questions. Follow-up and monitoring will allow these results to be discussed with stakeholders, new data to be collected on selected topics and a deeper understanding of the impacts of sustainable cocoa production to be gained.

Recommendations for actions concern improving the methods and changing the indicators used to evaluate impacts and outcomes. Data collection could be made more efficient and less burdensome on farmers through a more collaborative research design and by making more use of traders, certification agencies, producer groups and other stakeholders' environmental data. Future monitoring and impact assessments should reconsider the methods used and pay attention to the representativeness of the sample.

Résumé

Introduction

L'Initiative pour le commerce durable (IDH) souhaite accélérer et étendre le commerce durable grâce à la création de coalitions axées sur l'impact regroupant des multinationales, des organisations de la société civile, des gouvernements et autres parties prenantes, par le biais de cofinancements et en réunissant les intérêts publics et privés ainsi que les atouts et les connaissances de chacun. D'une durée de quatre ans, le programme « Cocoa Productivity and Quality Programme » (CPQP) d'IDH s'appuie sur le programme « Cocoa Improvement Programme » (CIP1), qui a pris fin le 31 décembre 2012. Le programme CIP a aidé UTZ Certified à développer son Code de conduite dans le secteur du cacao et à stimuler le marché du cacao certifié. L'objectif visé à travers le programme CPQP est d'aider un grand nombre de petits producteurs de cacao à sortir de la pauvreté et de faire la transition vers la conduite d'entreprises viables assurant la production de cacao durable, en favorisant plusieurs tactiques et outils permettant de créer un changement dans la production du cacao, l'accent étant mis ici sur les aspects suivants : amélioration de la productivité sur la base de bonnes pratiques agricoles (BPA), systèmes de normes (certification), regroupement de producteurs et amélioration de l'accès aux services, intrants et fonds. Le CPQP vise à soutenir la formation de plus de 50 000 agriculteurs et à certifier plus de 30 000 agriculteurs, pour produire plus de 64 000 tonnes de cacao certifié et veiller à ce que le cacao d'UTZ Certified soit largement disponible sur le marché international. Le CPQP rassemble davantage de partenaires que le CIP1 afin de couvrir plus de 40 % de l'industrie mondiale de transformation du cacao et 30 % des entreprises de fabrication du chocolat dans le monde. Ce programme cherche à impliquer les gouvernements locaux et autres parties prenantes. Outre UTZ Certified et Solidaridad, les autres participants incluent Ahold, ADM, Armajaro, Barry-Callebaut , BT Cacao, Cargill, Continaf, Ecom, Ferrero, Friesland Campina, Mars, Heinz, ICCO, Nestlé, Swiss Contact Oxfam Novib, Petra Foods (Delfi), PNUD, WCF et WWF.

Objectifs

Ce rapport offre un aperçu de la situation des exploitations agricoles telle qu'elle se présentait fin juin 2013 et pourra servir de base pour mesurer l'évolution lors de futures évaluations des impacts. Il fournit des informations sur la **capacité d'intégration du programme CPQP en Côte d'Ivoire.** Il évalue l'impact que la certification et les activités associées du CPQP et des partenaires ont eu sur les **connaissances et la mise en œuvre** par les agriculteurs de bonnes pratiques agricoles, sur les questions sociales et environnementales et les pratiques/comportements associés en Côte d'Ivoire et sur les résultats au niveau des 3 P (personnes, planète, profit). Ce rapport évalue également la valeur ajoutée **de la certification.** Les **enseignements** tirés des résultats ont permis d'émettre des **recommandations** pour améliorer la qualité et l'efficacité du programme.

Approche de l'évaluation

Évaluation indépendante, fondée sur les faits
IDH a demandé à l'Agricultural Economics Institute (LEI) de l'Université et Centre de recherche de Wageningen (Wageningen UR) de lui fournir cette étude qui associe une étude de référence et une évaluation indépendante. L'étude a été conduite par LEI Wageningen UR en partenariat avec le Centre for Development Innovation (CDI Wageningen UR), le Centre de Coopération Internationale et Recherche Agronomique pour le Développement (CIRAD – France) et l'organisme de recherche ivoirien Agriculture et Cycles de Vie (A & CV).

Collecte rigoureuse de données quantitatives et entretiens qualitatifs
En 2013, des entretiens quantitatifs et qualitatifs ont eu lieu avec 944 agriculteurs appartenant à 97 groupements de producteurs. Un échantillon représentatif de 730 agriculteurs du CPQP a été sélectionné. Ces agriculteurs sont membres de 89 coopératives qui sont associées à sept négociants différents, ayant participé au programme CPQP sur des durées différentes et situées dans les trois principales zones agro-écologiques du pays. Un groupe témoin de 214 agriculteurs n'ayant pas participé au programme a été sélectionné. Ces derniers sont membres de neuf coopératives situées dans les mêmes zones agro-écologiques, à au moins 10 km des coopératives du programme, et ne sont pas certifiés UTZ. Des entretiens approfondis ont également eu lieu avec 19 des gérants de coopérative, chefs de village, groupements de villageois et organisations d'accompagnement afin d'obtenir davantage d'informations qualitatives sur les impacts. La taille de 99 exploitations agricoles a été mesurée.

Élaboration d'indicateurs représentatifs avec les parties prenantes
Quinze indicateurs environnementaux, économiques et sociaux ont été utilisés pour mesurer l'impact des activités du programme mises en œuvre entre 2008 et 2013. Ces indicateurs correspondent à la logique d'impact d'IDH pour le programme CPQP, regroupés pour examiner les 3 P (personnes, profit, planète) et répondre aux questions d'IDH sur la capacité d'intégration, les connaissances et la mise en œuvre des bonnes pratiques et de la valeur ajoutée. La perception qu'ont les agriculteurs des changements intervenus au niveau des indicateurs a été analysée sur la base des résultats des entretiens. Des analyses statistiques et qualitatives des indicateurs ont ensuite été réalisées. Des comparaisons ont été faites entre les indicateurs pour détecter d'éventuelles différences significatives entre les groupes d'agriculteurs suivants:

- Agriculteurs ayant participé au programme sur différentes durées (allant de zéro à cinq ans).
- Agriculteurs situés dans différentes zones agro-écologiques.
- Agriculteurs participant au programme CPQP et agriculteurs n'y participant pas (groupe témoin).
- Agriculteurs certifiés et non certifiés parmi ceux qui participent au programme CPQP.

Les résultats ont également été comparés aux données qui existent sur les indicateurs ainsi qu'à une évaluation des influences extérieures susceptibles d'avoir un impact sur les performances des agriculteurs, notamment les conditions météorologiques et la réforme sectorielle menée par le gouvernement ivoirien. Les résultats préliminaires ont été présentés et vérifiés à l'occasion de deux réunions organisées à Abidjan et à Amsterdam en octobre 2013, en présence de cinq dirigeants de coopératives, de représentants de sept négociants, d'IDH, de Solidaridad et de l'équipe chargée de l'étude. Ce rapport présente l'analyse définitive qui pourra servir de référence (2013) pour mesurer et comparer les futurs impacts du programme.

Tableau1

Indicateurs d'impact.

Personnes - Domaine social
1. Caractéristiques des agriculteurs
2. Capacité d'intégration du programme certifié CPQP
3. Moyens de subsistance et niveau de vie
4. Pratiques durables rémunérées par le marché (prime comprise)
5. Stabilité des groupements de producteurs, des services fournis et de l'accès au marché
6. Droit du travail
7. Travail des enfants et droits associés
8. Conditions de vie et de travail sûres et saines
Profit - Domaine économique
9. Efficacité des exploitations agricoles
10. Productivité
11. Qualité
12. Rentabilité et viabilité à long terme des agriculteurs et groupements
Planète - Domaine environnemental
13. Qualité des sols et de l'eau
14. Gestion et réduction des déchets (liés à la production de cacao)
15. Protection et restauration des habitats naturels (sur l'exploitation ou à proximité)

Résultats clés

Les programmes de certification qui étayent le CPQP incluent de manière générale toutes les catégories de personnes susceptibles d'être intéressées, mais les propriétaires d'exploitations agricoles et travailleurs de sexe féminin sont néanmoins sous-représentés.
L'expansion des programmes de certification et des activités de soutien associées proposées à plus de 44 000 producteurs de cacao entre 2008 et 2013 a été rapide et extensive. Tous les agriculteurs ciblés ont déclaré participer à des activités, notamment des activités d'accompagnement pour les groupements de producteurs, des formations sur les bonnes pratiques agricoles et des activités de soutien visant à l'obtention de la certification UTZ. Comparativement au groupe témoin, un plus grand nombre d'agriculteurs (entre 6 et 20 %) ont eu accès à des services pour améliorer leurs cultures, tels que des produits phytosanitaires, des engrais, des jeunes plants ainsi que des crédits. De 8 à 13% des agriculteurs participant au programme CPQP ont été inclus dans des programmes communautaires et sociaux. Cette proportion est semblable à celle du groupe témoin. La certification est mise en œuvre par l'intermédiaire des membres inscrits dans un groupement de producteurs. L'accent mis par le programme CPQP sur les coopératives signifie que les agriculteurs qui ne font partie d'aucune organisation ne sont en mesure de profiter des activités de manière structurelle que lorsqu'ils se joignent à un groupe. Bien qu'une stratégie axée sur les groupements de producteurs ait permis de toucher un grand nombre d'agriculteurs et de faciliter l'accès aux négociants, non seulement lors de la vente de leurs produits mais aussi lors de l'obtention de services d'assistance au cours de ces cinq dernières années, les commentaires faits par les agriculteurs et les groupements de producteurs indiquent qu'une assistance supplémentaire visant à renforcer et à professionnaliser les groupements de producteurs est essentielle pour garantir la réussite de cette stratégie. La majorité (97 %) des participants étant des propriétaires d'exploitations agricoles et des métayers de sexe masculin, les femmes et les jeunes ont, de manière structurelle, moins souvent participé aux activités. Cette donnée est importante, les femmes étant l'un des groupes cibles du programme CPQP. Les femmes et les jeunes, que ce soit en tant que membres de leur famille ou en tant qu'ouvriers agricoles rémunérés, ont eux aussi effectué énormément de travail dans les exploitations de cacao. Les jeunes représentent la génération future, étant donné l'âge avancé de la plupart des agriculteurs. Dans la mesure où un grand nombre d'agriculteurs forment eux-mêmes leurs épouses, leurs enfants et leurs travailleurs, ils leurs transmettent ainsi des connaissances pertinentes en matière de bonnes pratiques agricoles et de normes de certification. Toutefois, nous ne savons pas dans quelle mesure ces connaissances sont réellement mises en œuvre dans les exploitations.

La certification semble contribuer à influencer les connaissances des agriculteurs et la mise en œuvre par ces derniers de bonnes pratiques agricoles. Selon les prédictions faites dans la logique d'impact, les niveaux de connaissance et la mise en œuvre devraient s'améliorer grâce aux certifications et formations. Cette situation de référence montre le niveau de connaissances et de pratiques des agriculteurs participant au programme et du groupe témoin d'agriculteurs en ce qui concerne les bonnes pratiques agricoles et les normes environnementales et conditions de travail requises dans le cadre du Code de conduite d'UTZ. Les agriculteurs participant au CPQP ont obtenu de meilleurs résultats en termes de connaissances et de mise en œuvre que le groupe témoin. Les niveaux de connaissance et de mise en œuvre des agriculteurs certifiés sont plus élevés comparativement aux agriculteurs non certifiés. Ces meilleurs niveaux de connaissance et de mise en œuvre ont été associés à d'autres variables, notamment la zone agro-écologique, la taille de l'exploitation agricole, le type de propriété et l'adhésion à un groupement. La certification multiple s'est également avérée avoir un effet positif sur les niveaux de connaissance. Les agriculteurs qui possèdent plusieurs certifications (UTZ et Rainforest Alliance) affichent des niveaux de connaissance supérieurs aux agriculteurs non certifiés. Cette situation est attribuable à la similarité des connaissances acquises au cours des différents programmes de certification. Les agriculteurs avec des niveaux de connaissance élevés appliquent davantage les BPA que les agriculteurs dont le niveau de connaissance est plus faible. Toutefois, le niveau de connaissance et de mise en œuvre tant des participants au programme CPQP que des agriculteurs certifiée est relativement faible. En moyenne, 25 % des agriculteurs ont en effet répondu correctement aux questions posées concernant leurs connaissances et la mise en œuvre des normes contenues dans le Code de conduite d'UTZ. Impact attendu des programmes de formation et de certification, cette situation découle de la logique d'impact du CPQP stipulant que les agriculteurs certifiés respectent les normes définies dans les programmes de certification en matière d'hygiène et de sécurité, de droits des travailleurs et de conditions de travail. Cependant, il faudra attendre les évaluations suivantes pour savoir si ces niveaux de connaissance et de compétences plus élevés sont attribuables aux formations et aux programmes de certification ou à d'autres facteurs, tels que des connaissances préalables à une participation au CPQP. Les connaissances et pratiques sont notamment faibles dans les domaines suivants : droits des enfants, droit du travail, équipements de protection individuelle, gestion et compostage des déchets, désherbage, tenue des registres, arbres d'ombrage, préservation des sols, zones tampons, utilisation des engrais et des produits phytosanitaires, taille et gestion des maladies. Les agriculteurs et les parties prenantes suggèrent l'apport d'améliorations au niveau de la fréquence, de la qualité et de la quantité des formations, en particulier sur le terrain et eu égard aux BPA que les agriculteurs ont plus de mal à appliquer, ainsi qu'au niveau des compétences des formateurs. Suite à l'expansion des certifications et formations, les agriculteurs ont signalé un changement au niveau de la qualité et de l'intensité de ces certifications et formations, dans certains cas même une baisse. Les agriculteurs ont demandé à ce que les formateurs s'adaptent aux styles d'apprentissage des agriculteurs, ces derniers semblant préférer les activités de vulgarisation et la formation sur le terrain plutôt que les formations en salle.

Étant donné qu'il s'agit ici d'une situation de référence et que, dans la majorité des cas, le programme CPQP n'a pas été commencé sur le terrain avant la mi-2012, les impacts ne sont pas encore visibles ni attribuables. Ces derniers doivent donc être interprétés avec la plus grande prudence et sur la base des certifications et activités associées qui ont été initiées antérieurement et semblent contribuer à améliorer la situation sociale et économique des agriculteurs. Il semblerait qu'y ait lieu de parler de certains impacts positifs limités sur l'environnement. Mais ces impacts positifs ne pourront être attribués au programme CPQP qu'une fois que cette situation de référence aura été comparée à la position occupée par les agriculteurs dans le futur. Les agriculteurs sont généralement satisfaits de leurs moyens de subsistance, de leurs groupements de producteurs et des services qu'ils fournissent, ainsi que des négociants auxquels ils vendent. Ils ont signalé des développements positifs et des conditions de travail plus sûres. Toutefois, le respect de certains droits du travail et droits des enfants reste faible. La certification et les activités associées sont mises en corrélation avec les impacts positifs observés en termes de productivité, d'efficacité et de revenus. Les agriculteurs participant au CPQP ont, d'après les statistiques, une productivité significativement plus élevée que les agriculteurs non certifiés du groupe témoin, tout comme c'est le cas également des agriculteurs certifiés comparativement aux agriculteurs non certifiés. Ces chiffres sont comparables aux chiffres de référence pour la Côte d'Ivoire, mais restent

malgré tout inférieurs à la productivité enregistrée dans d'autres pays. La justesse de la productivité indiquée par hectare peut toutefois être remise en question, les agriculteurs ayant tendance à surestimer la taille de leur exploitation. Environ 60 % des agriculteurs attribuent l'amélioration de la productivité à un programme de certification, en particulier les BPA. Les agriculteurs du programme CPQP affichent des coûts de production totaux plus élevés, mais des coûts de production par kilogramme considérablement moindres que les agriculteurs non certifiés. Toutefois, bien que les coûts par kilogramme soient moins élevés pour les agriculteurs du CPQP, leurs ratios d'efficacité ne sont pas supérieurs. Cette situation est peut-être due au délai nécessaire avant que tout changement soit visible dans le secteur de l'agriculture. Du reste, cette étude est la toute première mesure effectuée.

Les agriculteurs ont généralement l'impression d'être « coincés » dans la production de cacao. Ils ne peuvent pas changer ou accroître facilement leurs sources de revenus (issues de la production de cacao) et n'ont pas ou peu de possibilités de générer des fonds d'une autre manière. Par conséquent, le cacao n'est généralement pas considéré comme une option viable pour l'avenir. La plupart des agriculteurs n'encouragent pas leurs enfants à se lancer dans la production de cacao. La certification et les activités associées visent à inverser cette tendance en concentrant l'attention sur ce secteur et en le revitalisant.

Les pratiques d'amélioration de l'environnement, particulièrement en termes de préservation et de qualité des sols et de l'eau, semblent avoir eu un impact limité à ce jour. Ce résultat est peut-être dû au délai nécessaire avant que les impacts environnementaux soient visibles, ainsi qu'aux méthodes utilisées pour évaluer l'évolution des indicateurs portant sur la qualité des sols et de l'eau, la gestion des déchets et les habitats naturels sur l'exploitation ou à proximité.

En organisant les agriculteurs en groupements de producteurs et en les aident dans leur professionnalisation, la certification et les formations ont été considérablement élargies, fournissant ainsi une base pour de vastes programmes d'assistance pour les quatre négociants participant au CPQP. La participation des agriculteurs a également permis une expansion, quoique sur une plus petite échelle, de l'accès aux intrants, produits phytosanitaires et engrais, ainsi qu'à des préfinancements et crédits, pour 6 à 20 % des agriculteurs. Les groupements de producteurs fournissent un capital social et un forum d'apprentissage et d'échange, et agissent favorablement sur l'obtention d'un accès au crédit, aux intrants agricoles, aux autres services et aux acheteurs. Tous les agriculteurs ne bénéficient toutefois pas de ces avantages et la majorité d'entre eux n'ont toujours pas suffisamment accès aux crédits, intrants ou jeunes plants nécessaires pour renouveler leurs exploitations de cacao. Des partenariats entre IDH, des négociants, des programmes de certification, des organisations à but non lucratif, les services de vulgarisation du gouvernement ivoirien et des coopératives semblent être des canaux importants qui ajoutent de la valeur à la certification pour les agriculteurs et améliorent son effet en fournissant une gamme de services dont les agriculteurs ont besoin. Des partenariats peuvent contribuer à améliorer l'efficacité et l'efficience de la certification, les « doublons » en termes d'efforts étant évités. Toutefois, les programmes de certification multiple auraient, selon les producteurs, eux aussi un impact négatif, en ce sens qu'ils requièrent plus d'efforts et suscitent davantage de coûts pour les agriculteurs, les groupements de producteurs et les négociants. Des collaborations et partenariats pourraient, en l'occurrence, contribuer à minimiser ou atténuer ces impacts. Des études récentes (KPMG 2012, GBCG 2012) semblent confirmer les impressions des agriculteurs et des groupements de producteurs, à savoir qu'ils prennent à leur charge des coûts substantiels dans le cadre des certifications. Une analyse des coûts et des bénéfices financiers et économiques totaux pour les agriculteurs lors des différentes étapes de certification et pour un groupe témoin est recommandée, compte tenu du fait que la plupart des agriculteurs ne tiennent pas de registres faisant mention de leurs coûts et bénéfices. Les nombreuses activités mises en œuvre par les négociants dans le cadre de ou en rapport avec les certifications, montrent qu'une certification permet aux agriculteurs d'être contactés par des négociants et par des organisations responsables de projets et de programmes.

La prime à la certification – la rémunération fournie par le marché pour une production durable et responsable – est pour les agriculteurs l'un des principaux critères qui les incitent à être certifiés. Cette prime incarne la rémunération du marché pour une production durable et responsable. Pour les agriculteurs, c'est un encouragement, surtout pendant les premières étapes de participation lorsque la hausse de productivité et de qualité attendue n'est pas encore visible. Cette prime ne représente toutefois qu'une faible proportion du prix total gagné par les agriculteurs (7 % du prix de vente total au kilogramme). Cette prime fait l'objet d'une grande attention, la majorité des groupements de producteurs payant les primes séparément des principaux paiements effectués pour les fèves de cacao. Elle est également utilisée pour garantir fidélité et reconnaissance entre les agriculteurs, leurs groupements de producteurs et les négociants. Les agriculteurs et les groupements d'agriculteurs s'inquiètent cependant car ils estiment que si la prime est supprimée, une des principales valeurs ajoutées du maintien de leur certification disparaîtra. Les indicateurs portant sur la productivité, les revenus et l'efficacité suggèrent que, pour les agriculteurs, il serait plus avantageux dans le long terme de se concentrer sur l'augmentation de l'ensemble des prix et des bénéfices gagnés par les agriculteurs sur les fèves certifiées, plutôt que d'accorder une trop grande attention à la prime.

La certification a soutenu et encouragé massivement les actions collectives. Les agriculteurs mentionnent les nombreux avantages qu'offre leur groupement de producteurs, par exemple la commercialisation de leurs fèves à un bon prix, l'accès à des informations et à des formations, l'existence d'un forum d'échange et le renforcement du capital social. Les services fournis aux groupements de producteurs par le CPQP (et par d'autres négociants et projets) ont permis d'améliorer l'accès des agriculteurs à de jeunes plants, des produits phytosanitaires et des crédits. Les activités associées à la certification, souvent mises à disposition par les négociants, ont également favorisé la professionnalisation des groupements de producteurs, en fournissant des formations au management, des modèles de systèmes de contrôle interne, une assistance financière, des équipements et des moyens de transport. Toutefois, de nombreux agriculteurs ont indiqué qu'il est toujours nécessaire d'assurer un meilleur accès à suffisamment de crédits et intrants ainsi qu'à d'autres services associés ou non à leur exploitation agricole, pour améliorer le secteur de l'agriculture et les moyens de subsistance de leurs familles, et qu'une assistance est requise pour les aider à gérer et diversifier leurs sources de revenus. Il est toutefois nécessaire d'accroître l'échelle et la fréquence et de multiplier les moments auxquels ces services sont fournis, de sorte qu'ils puissent profiter à la majorité des agriculteurs participant au CPQP.

La certification a également eu quelques conséquences imprévues. Elle n'a fait que renforcer les difficultés des agriculteurs à gérer des flux de trésorerie saisonniers importants. Le processus d'audit est perçu comme favorisant la corruption. La procédure de calcul des primes est considérée comme n'étant pas transparente et ne semble pas correspondre aux frais réels que ce soit au niveau des agriculteurs, des groupements de producteurs ou des négociants. La certification multiple est complexe et a été difficile à gérer pour certains négociants et certains groupements de producteurs. En raison de l'expansion et du renforcement rapides des activités associées à la certification (en particulier les formations), les agriculteurs ont l'impression que la qualité des activités est variable et ne répond pas toujours aux normes minimales, ce qui peut éventuellement influencer les connaissances et pratiques des agriculteurs.

Il semblerait que les agriculteurs bénéficient de la procédure de certification combinée aux activités de soutien. Selon les agriculteurs, la mise en œuvre des bonnes pratiques agricoles enseignées dans le cadre du programme de certification entraîne une productivité plus élevée et, parconséquent, des revenus plus importants. L'étude initiale de référence associée à l'évaluation des impacts y contribue d'une certaine manière. Pour les agriculteurs, la valeur ajoutée du programme decertification combinée aux formations et autres formes d'assistance réside dans la possibilité de bénéficier de primes de certification et dans l'accès, par le biais des groupements de producteurs et des négociants, aux services dont ils ont besoin et dont ils sont satisfaits. La certification influence les pratiques commerciales et suscite une série de résultats positifs. En tant que membres d'un groupement de producteurs, les agriculteurs certifiés ont accès aux négociants et vendent en général uniquement aux négociants qui les ont soutenus. Pour les agriculteurs, cela représente une plus-value dans la mesure où il est répondu à leurs besoins. Pour les négociants, cette fidélité est la garantie d'une source sûre de fèves certifiées et de bonne qualité. Ces relations garantissent l'accès aux

marchés pour les agriculteurs et leurs groupements et accroissent l'accès à des services d'assistance qui améliorent la production. Ces meilleures relations permettent également d'accéder à d'autres activités sociales et communautaires qui ne figurent pas sur le haut de la liste des priorités mais ne sont pas pour autant moins importantes pour les agriculteurs. D'après les agriculteurs, les soins de santé, les écoles et les infrastructures continuent à être des sujets de préoccupation influençant les moyens de subsistance au sein de leurs communautés.

La logique d'impact du CPQP semble être correcte, en ce sens que la certification et les activités et intrants associés contribuent bel et bien aux résultats économiques. Elle part du principe qu'une amélioration des niveaux de connaissance conduit à une meilleure mise en œuvre des bonnes pratiques agricoles, une hausse de la productivité, des revenus nets plus élevés et de meilleurs niveaux de satisfaction en ce qui concerne les moyens de subsistance des agriculteurs. L'amélioration des niveaux de connaissance et de la tenue des registres entraîne une hausse de la productivité, des revenus nets et des moyens de subsistance. Aucun lien ne semble exister entre la mise en œuvre de BPA de manière générale ou la mise en œuvre de pratiques post-récolte et la qualité des fèves (indiquée par le taux de rejet). Cela peut être influencé par des facteurs externes, tels que la réforme institutionnelle du secteur du cacao en Côte d'Ivoire en 2012. De même, l'amélioration des niveaux de connaissance agit favorablement sur la mise en œuvre de BPA, ce qui vient confirmer la logique d'impact. Pour certaines pratiques agricoles spécifiques (gestion des déchets et des sols, protection de l'eau et de la biodiversité), ce n'était toutefois pas le cas. Pour veiller à ce que ces résultats soient atteints, en particulier par les derniers arrivants et éventuellement les nouveaux arrivants au programme qui présentent des caractéristiques légèrement différentes, il est recommandé d'adapter la manière dont le programme est mis en œuvre. Les résultats sociaux ne sont que partiellement atteints, les agriculteurs certifiés signalant des conditions de travail plus sûres et de meilleure qualité. Toutefois, face aux résultats obtenus en ce qui concerne l'inclusion d'un plus grand nombre de propriétaires de sexe féminin dans le programme et une production de cacao certifiée sans travail des enfants, il est clair que des actions supplémentaires sont nécessaires pour parler d'un impact significatif. Les résultats écologiques semblent également n'être que partiellement atteints: si l'utilisation de produits chimiques est conforme aux recommandations nationales, les indicateurs de réhabilitation et de régénération des exploitations agricoles – notamment l'accès à de jeunes plants améliorés et l'acquisition de compétences en matière de greffage – restent faibles. La logique du CPQP suppose également que les intrants vont conduire à une hausse de la productivité. Le nombre d'agriculteurs impliqués dans des interventions favorisant l'accès aux engrais (7 %), aux crédits (24 %), aux jeunes plants (11 %) et aux pesticides (36 %) étant moins élevés, des essais éventuels devant prouver la corrélation entre ces interventions et une hausse de la productivité ne seront possibles que lors d'une future évaluation des impacts.

Enseignements et recommandations

Le cacao est clairement une composante essentielle des moyens de subsistance des agriculteurs qui participent au programme CPQP, en tant que source de revenus unique ou principale pour la plupart d'entre eux. L'amélioration des revenus, des aspects sociaux et de l'environnement de ces producteurs de cacao, ne se limite cependant pas aux champs de cacao (ces agriculteurs assurant également la production d'autres cultures commerciales et de subsistance) et à la certification (qui a un objectif bien spécifique). Pour leur fournir des moyens de subsistance durables et diversifiés, il faut avoir une vision globale de l'interaction possible avec d'autres cultures de subsistance et commerciales capables de venir compléter les revenus du cacao. Pour améliorer véritablement les moyens de subsistance des agriculteurs, il faudrait probablement que le programme CPQP mette l'accent sur plus d'un produit. Concrètement, cela peut impliquer de tester de nouveaux modèles commerciaux diversifiés pour pouvoir persuader les producteurs de cacao et leurs enfants de continuer à cultiver et à transformer le cacao certifié. Il faudra peut-être pour cela faire évoluer les mentalités afin que le cacao certifié ne soit plus considéré que comme une des multiples composantes (même si elle est importante) des moyens de subsistance des agriculteurs, de leurs familles et de leurs travailleurs (hommes et femmes, jeunes et vieux). La mise en place de partenariats et dialogues continus est nécessaire, bon nombre de ces questions sortant des limites actuelles des activités et sphères d'influence des négociants et partenaires. Des efforts doivent être consentis pour garantir la clarté et la transparence des bénéfices

et des coûts de la certification pour toutes les parties prenantes ainsi que l'efficacité des procédures de certification (multiple). La certification ne répondant pas ou ne pouvant pas répondre de manière satisfaisante à tous les besoins des agriculteurs, des combinaisons d'activités, telles que celles utilisées dans le CPQP, s'avèrent jouer un rôle important pour convaincre les agriculteurs et les groupements de producteurs que le cacao durable attesté reste une solution de culture et de subsistance viable à long terme pour eux et pour leurs enfants.

Les suggestions faites pour l'orientation future du CPQP en Côte d'Ivoire sont les suivantes :

- Inclure les travailleurs et particulièrement les femmes et les jeunes en tant que groupes cibles dans les activités.
- Prendre d'autres mesures afin d'accroître la productivité et l'efficacité des agriculteurs et réfléchir sur la manière de favoriser des rémunérations du marché (pour une production durable) qui mettent davantage l'accent sur la rentabilité au niveau de l'agriculteur et du groupement de producteurs.
- Aborder les secteurs dans lesquels les connaissances des agriculteurs et la mise en œuvre de bonnes pratiques agricoles sont limitées ; et en particulier évaluer l'efficacité des techniques de formation utilisées au fil du temps avec les différents agriculteurs.
- Continuer à insister sur l'application du droit du travail afin que les pires formes de travail des enfants soient éliminées et que les droits des enfants et les droits des travailleurs soient respectés. Le soutien d'initiatives favorisant la scolarisation des enfants (par exemple, veillant à la présence d'écoles dans les communautés de producteurs de cacao) reste essentielle pour éliminer le travail des enfants.
- Il est également recommandé de solliciter, d'écouter et de prendre en compte les perceptions qu'ont les agriculteurs et les parties prenantes de leurs besoins (pesticides et engrais, jeunes plants, matériau végétal amélioré, crédit, assurance, formation commerciale) et d'envisager la possibilité d'intégrer leurs suggestions dans le programme CPQP et/ou dans les programmes de soutien des partenaires.

L'avenir

Même si ces résultats préliminaires suggèrent que le programme CPQP a contribué à améliorer les moyens de subsistance, les communautés et l'environnement des producteurs de cacao en Côte d'Ivoire, ils soulèvent également des questions. Le suivi et l'évaluation permettront de discuter de ces résultats avec les parties prenantes, de recueillir de nouvelles données dans certains domaines précis et de mieux comprendre les impacts de la production durable de cacao.

Les actions recommandées visent notamment à améliorer les méthodes et à changer les indicateurs utilisés pour évaluer les impacts et les résultats. La collecte de données pourrait gagner en efficacité et être rendue moins pesante pour les agriculteurs, par le biais d'une méthodologie de recherche reposant davantage sur la collaboration et en recourant dans une plus grande mesure aux données environnementales des négociants, des organismes de certification, des groupements de producteurs et d'autres parties prenantes. Les mécanismes de contrôle et les évaluations d'impact devraient dans le futur reconsidérer les méthodes utilisées et prêter attention à la représentativité de l'échantillon d'agriculteurs.

1 Introduction

1.1 Rationale

The Sustainable Trade Initiative (IDH) aims to accelerate and up-scale sustainable trade by building impact-oriented coalitions of multinationals, civil society organisations, governments and other stakeholders. Through co-funding and convening public and private interests, strengths and knowledge, IDH programmes aim to create shared value for all partners. The objective is to help make sustainability the new norm and contribute to achieving the Millennium Development Goals. The IDH Cocoa Productivity and Quality Programme (CPQP) is a four-year programme that will help catalyse large-scale positive impact within the sector by mainstreaming the results of the previous Cocoa Improvement Programme (CIP1), which ended on 31 December 2012. The aim is to assist large numbers of smallholder cocoa farmers to move out of poverty and make the transition to running viable businesses for sustainable cocoa production. The CPQP promotes a variety of tactics and tools to create change in cocoa production, focusing on four tools: good agricultural practices (GAPs), standards systems (certification), farmer aggregation and financing mechanisms. The 7 million euro CPQP aims to help to develop and provide match-funded capital through a competitive grant process that advances the cocoa market in the areas of quality, productivity, professionalisation of farmers and their organisations, total quality standard systems, financing, and coordination and alignment (IDH 2012).

The CIP1 was a public–private partnership 50% funded by IDH that ran from 2008 to December 2012. It convened and aligned parties accounting for approximately 30% of the chocolate market and focused on the largest producer countries: Côte d'Ivoire, Ghana, Indonesia, Nigeria, Cameroon and Ecuador. The CIP1 aimed to be a major force behind the up-scaling of certification, increased market demand for certified chocolate, the institutionalisation of sustainability in the sector, and the dissemination of innovative sustainability practices. A second tranche of public and private funding set up the Cocoa Productivity and Quality Programme (CPQP), a four-year programme that started in April 2011. The aim is to mainstream the results of the CIP1 and stimulate innovations on effective farmer support and improved production to catalyse large-scale positive impacts within the sector.

The CPQP aims to help to develop and provide co-funding for programmes that advance the cocoa market in quality, productivity, professionalisation of farmers and their organisations, total quality standard systems, financing, and coordination and alignment of private and public sector actors in sustainable cocoa production. The CPQP aims to train more than 50,000 farmers and certify over 30,000 farmers, to produce over 64,000 tonnes of certified cocoa and make UTZ Certified cocoa widely available on the international market. The CPQP brings together more partners to cover over 40% of the worldwide cocoa processing industry and 30% of worldwide chocolate manufacturing businesses. It involves local governments and other stakeholders. Alongside UTZ Certified and Solidaridad, participants include Ahold, ADM, Armajaro, Barry-Callebaut, BT Cocoa, Cargill, Continaf, Ecom, Ferrero, Friesland Campina, Mars, Heinz, ICCO, Nestlé, Swiss Contact, Oxfam Novib, Petra Foods (Delfi), UNDP, WCF and WWF.

After UTZ Certified commissioned WUR to perform this impact study, UTZ Certified and Solidaridad were partners in the CIP1 and in the CPQP. UTZ is a programme and label for sustainable farming worldwide. Sustainable farming aims to help farmers, workers and their families to fulfil their ambitions and contributes to safeguarding the earth's natural resources, now and in the future. UTZ's mission is to create a world where sustainable farming is the norm, and where farmers implement good agricultural practices and manage their farms profitably with respect for people and planet, where industry invests in and rewards sustainable production and consumers can enjoy and trust the products they buy.

In 2007, UTZ Certified launched its cocoa programme with founding members Cargill, Ecom, Heinz, Mars, Nestle and Ahold and the not-for-profit organisations Solidaridad, Oxfam Novib and WWF. The first pilots in Côte d'Ivoire started in 2008 (two projects with Cargill and two with Ecom). Ghana was the second country where the programme was implemented. In January 2008, a group of partners travelled to Côte d'Ivoire to understand the issues and the potential for and obstacles to certification. After extensive stakeholder consultation, the UTZ Certified Good Inside Code of Conduct for Cocoa was launched in June 2009 and the first producers in Cooperative Agricole de Fiédifoué (CAFD) and Coopaga were certified in August 2009. In November 2009 the first batch of UTZ Certified cocoa arrived in Amsterdam amidst much fanfare. By December 2009, Coopagro in Côte d'Ivoire was one of three more producers that became certified worldwide and 5,400 tons had been produced by UTZ Certified cocoa farmers. In January 2010, the Chain of Custody (CoC) and corresponding labelling was finalised and an interim traceability procedure installed. This was seen as essential for the success of UTZ Certified label in the market. Also in 2010 the first UTZ Certified chocolate products appeared on the market: Baronie Easter Eggs, 4-finger KitKat Australia, Cocio, AH chocolate bars and letters in two thirds of all Dutch supermarkets; commitments of Chocomel & Cécémel, Nidar, de Ruijter and Arla.

In 2011, Solidaridad and UTZ Certified commissioned LEI to evaluate their cocoa programme in Ghana (a baseline study, mid-term review and final evaluation). The baseline report was completed in April 2013. By June 2012, in Côte d'Ivoire UTZ had partnerships with eight traders (four of which are also partners in the CPQP). A total of 86 producer groups were certified, comprising 44,624 farmers and 128,582 tons of cocoa produced on a total area of 219,100 hectares; a further 103 producer groups were in the process of certification. These implementing partners have facilitated the training of producers and producer groups. The training focuses on good agricultural, social and environmental practices (GAPs) in line with UTZ Code of Conduct. Implementation of better and more sustainable practices is expected to lead to higher and long-term productivity, improved quality (better market access and prices), increased efficiency (lower costs per unit of produce), increased income (improved profitability) and improved social and environmental conditions. Training also includes organisational management and internal control systems (ICS), which are expected to lead to more effective farmer organisations with more effective input purchasing, cocoa marketing and better service delivery to cocoa farmers.

Following on from the study in Ghana, UTZ Certified and Solidaridad wanted to conduct a similar and comparable study in Côte d'Ivoire, with a broader scope in terms of the implementing partners and methods. IDH used this opportunity to collect additional data to also answer its research questions. As Ghana and Côte d'Ivoire are different in terms of the parties involved, the activities and the context, the theory of change, research questions and indicators were adjusted and influencing factors (such as the political situation and recent conflict) were taken into account. Also, to improve learning from the study, capture the initial results of the CIP1, enable triangulation and increase communication value, IDH, UTZ and Solidaridad wanted the Côte d'Ivoire study to use a mix of quantitative and qualitative methods.

1.2 Objectives and research questions

The objectives of the study were to:
1. Obtain information about the baseline situation of the CPQP in Côte d'Ivoire
2. Assess whether the activities/strategies lead to the desired outcomes (effectiveness)
3. Draw lessons learned so as to improve the quality of the programme.

The following three learning questions were proposed:
1. **Is the CPQP cocoa programme in Côte d'Ivoire inclusive? What are the characteristics of certified farmers?** Are certified farmers representative of Ivorian cocoa farm holders (in terms of incomes, gender, age, farm size and tenure and ethnic/migrant status)? Do knowledge and benefits also reach others working/helping on certified farms (spouses, workers, tenants, children, etc.)?

2. **How do certification, voluntary standards and the related activities of implementing partners** (Solidaridad, buyer-exporters, private training agencies, consultants and the national rural development agency) **influence knowledge** (of GAPs, social and environmental issues in line with the code of conduct) **and the related behaviour/practices of cocoa farmers in Côte d'Ivoire?** And what are the **results in economic, social and ecological terms?**
3. **What is the added value for farmers of going through certification processes and being certified?** What perceptions do farmers and stakeholders (groups, traders, traitants, exporters, trainers) have of the process and impacts of certification and training on their livelihoods (e.g. benefits in terms of improved wellbeing, increased professionalism, increased trust and communication between farmers and co-ops, how certification influences loyalty of members towards a group and willingness to reinvest in cocoa farming)? How do the training and certification interventions influence/strengthen each other?

These research questions also draw on IDH's impact logic (also known as the Theory of Change) for sustainable cocoa, shown in Figure 3.

1.3 Collaboration with UTZ Certified, Solidaridad and Cargill

One of IDH's core strategies is to work through coalitions to implement its mission. This study was conducted in collaboration with three of its partners: UTZ Certified, Solidaridad and Cargill.

Solidaridad has supported the development of UTZ certification since 2004.[1] UTZ and Solidaridad both started cocoa programmes in 2007. In West Africa, UTZ's cocoa programme has been implemented since 2008 with Solidaridad and Solidaridad's Regional Expertise Centre in West Africa; until 2012, the centre was known as West Africa Fair Fruit (WAFF). Solidaridad works closely with companies to help them make the transition to sustainable cocoa. Since 2007, its cocoa programme has focused on poverty, environmental degradation and social issues (such as child labour), and training, organising and empowering farmers in Côte d'Ivoire and other major cocoa production countries with partners Cargill, ECOM, Mars, Ahold, Nestlé, funded by organisations such as IDH, the Netherlands Ministry of Foreign Affairs and companies. In the next five years, the programme will be expanded to a minimum of 400,000 farmers, increasing the market share to 15%-20% of global cocoa production by training producers to increase productivity and improve farm management through good agricultural practices and organisational development, organising farmers and enabling access to finance and developing models for rehabilitation and intensification to increase productivity. Since 2008 Solidaridad has collaborated with Cargill on its sustainable cocoa programme in Côte d'Ivoire. LEI was commissioned to provide an assessment framework and baseline of the impact of cocoa farmer support activities by Cargill and Solidaridad in November 2012. UTZ Certified was also a member of the IDH Cocoa Improvement Programme 1 (CIP1); four companies implementing UTZ certification in Côte d'Ivoire are also CPQP partners (Cargill West Africa, Zamacom (Ecom), CEMOI and SACOM (Barry Callebaut).

LEI was commissioned to provide an assessment framework and baseline of the impact of cocoa farmer support activities by Cargill and Solidaridad in November 2012 and by UTZ in December 2012. IDH's assessment was commissioned in January 2013. It builds on the same methodology and data as for the Cargill and Solidaridad and UTZ studies. Due to the close relationships and interests of IDH, UTZ and Solidaridad in certified cocoa production in Côte d'Ivoire, the three organisations and LEI came to a framework for collaboration. The basis of this partnership consists of:

[1] http://www.solidaridad.nl/merken/utz-certified

- A common interest in demonstrating a positive impact of certified/sustainable cocoa at household level.
- By combining resources the organisations are able to capture a large survey base of respondents.
- The organisations are aligned on working with one methodology and one research consortium (led by LEI).
- The organisations acknowledge time constraints of wanting to deliver credible results as soon as possible.
- Recognition of the different role played by each organisation, resulting in different analysis and reporting needs.

IDH, UTZ and Solidaridad agreed to share the primary baseline data as the basis to answer the similar, but slightly different focus of the questions they each want to answer. Each of the three organisations would have its own report reflecting its own focus and interests. Figure 1 visualises the framework.

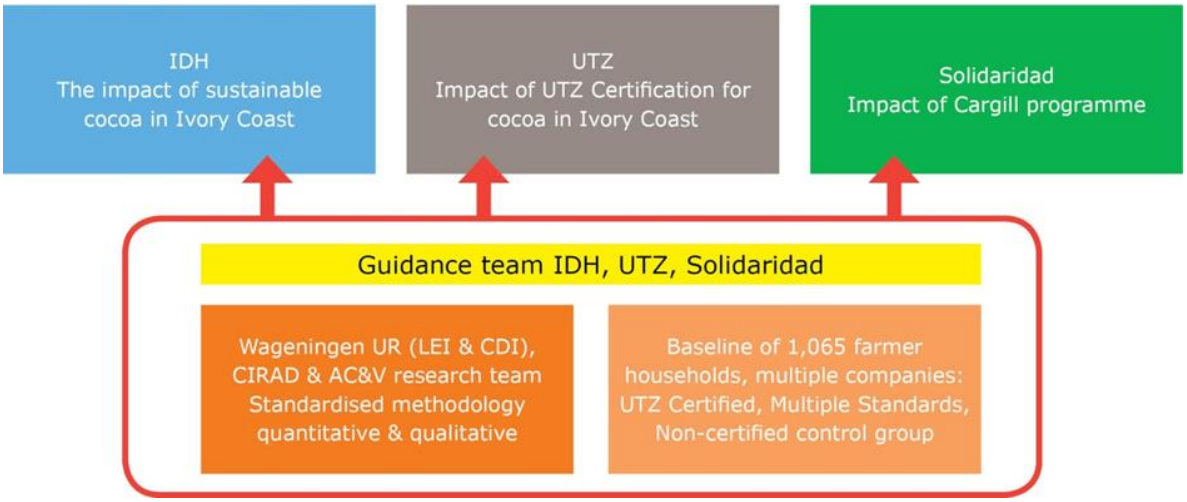

Figure 1 *Organisational framework for the joint impact study*

The guidance team for of this research consisted of representatives of IDH, UTZ Certified and Solidaridad. The team were responsible for ensuring the quality and alignment of the study, and overall coordination and final approval of the deliverables. They also provided secondary data, facilitated logistical arrangements during fieldwork and contacts with stakeholders, and reviewed progress and deliverables.

The study was led by LEI Wageningen UR led in partnership with the Centre for Development Innovation (CDI Wageningen UR), the French Centre de Coopération Internationale et Recherche Agronomique pour le Développement (CIRAD), and the Ivorian research organisation Agriculture et Cycle de Vie (A & CV).

1.4 Cocoa farming in Côte d'Ivoire

The cocoa sector in Côte d'Ivoire has a long and complex history. West Africa is the centre of world cocoa production and Côte d'Ivoire has been the world's largest cocoa exporter since the 1980s. It currently produces between 41% and 60% of world supply, amounting to 1,511–1,480 thousand tons annually in the last three years (ICCO 2013). This generates 15% of GDP and 30% of national export income. An estimated 600,000–900,000 farmers work with cocoa, with up to 6 million dependents. The majority of cocoa is produced on small farms of between 1.5 and 5 hectares, with different reports of average farm size ranging from 2.8 ha (Alonghi 2011) to 3.7 ha (KPMG 2012b). Farms generally have low and decreasing productivity rates (300-500 kg per ha) compared to other cocoa producing countries (Ruf 2007; Oxfam International 2009; KPMG 2012b).

Around 6% of the national territory is under cocoa production, the majority grown in very suitable growing areas – but not all (Läderach 2011). Expansion into unsuitable areas without fertilisers, inputs or adapted agricultural practices commonly results in low yields (Ruf and Agkpo 2008). Annual weather patterns and climatic have a major influence on yields (Zuidema et al. 2005; Ojo and Sadiq 2010). Climatic changes in the future are predicted to influence cocoa productivity as some areas become unsuitable (Lagunes and Sud-Comoe in Côte d'Ivoire), some areas remain suitable, but only if the farmers adapt to the new conditions and some areas where cocoa is not currently grown but which may become suitable in the future (Läderach 2011).

Within the global cocoa sector, complex labour issues have been prominent in the last decade. These issues are related to child labour (Krain et al. 2011), extended family labour migrant labour (Alongi 2011; Ton et al. 2008; Tulane University 2011). The sector was also affected by the Ivorian civil conflicts in 2002–07 and 2010–11, with cocoa sales contributing to finance the conflict (Global Witness 2007; Guesnet et al. 2009). Given this history, multinational corporations have made significant investments to secure cocoa output and ethical practices (Abbott et al. 2005). However, farm-gate prices in Côte d'Ivoire have been among the lowest in terms of $/ton of all major exporting countries (Abbott et al. 2005), typically less than 5% of cocoa bean equivalent price of chocolate paid by consumers.

Pisteurs (small, itinerant buyers or middlemen) have mark-ups of less than 0.%, traders of around 5% and exporters of around 20% (Abbott et al. 2005). Cocoa production has continued to rise despite low prices in the mid-2000s. With demand expanding, Ghanaian supply contracting (till recently) and Ghanaian farm-gate prices rising, Côte d'Ivoire led the way in filling the gap to become the world's major supplier of beans (Abbott et al. 2005) and increased by 112,000 tons in the period 2002/2003 to 2011/2012 (ICCO 2012 p.13). The value chain in Côte d'Ivoire is unique, with farmer sales at farm gate to *pisteurs* or cooperatives (*pisteurs* sell to *traitants* (traders)) (Abbott et al. 2005). Farmer groups are mainly cooperative structures, and traitant-led group structures have only just started to emerge.

The governance of cocoa production in Côte d'Ivoire has a similar history to that in Ghana, but its state-controlled governance system, where credit, pricing and export licensing were intimately linked, has always had more private partners. Until 1990, exports, market power and price setting were shared between exporters and the government (Ton et al. 2008). After 1999, a market-based corporate governance and price negotiation system was implemented following the breakdown of institutions as a result of failed cocoa production, and pressure from the World Bank and IMF structural adjustment process. Foreign companies used the room to increase investments and increase 'in-company' chain integration. Exporters (including major trading houses such as Cargill, Barry Callebaut, Olam and Armajaro) were then free to buy and sell based on the London market price. The fully liberalised system left farmers exposed to the international cocoa price set in London. The 2012 reforms of the rules governing trade are a result of this history and the renewed assertion of the role of the government, given some semblance of return to peace and state authority. The reforms, some of which are contentious, include a reserve fund, a single regulatory body, a guaranteed 50-60% benchmark price for farmers, export quality standards, and revised minimum export prices and transport and handling fees (CTA 2012).

The proportion of certified cocoa from Côte d'Ivoire in terms of world market production certified cocoa beans is high. In 2010, 26% of certified cocoa was Fairtrade certified. In 2009, 23% was Rainforest Alliance certified and 78% was UTZ Certified; in that year, a total of 103,696 tons was certified under the four schemes.(VOICE Network 2012). Organic certification had no market share in 2006 but is now active, although the proportion is not known. However, globally, only 55% of beans that are certified are sold as certified at retail level and 30% are sold through other sales channels (VOICE Network 2012).

2 Methodology

This chapter describes the methodology used. More information can be found in the apendices: Annex 2 for indicators, Annex 4 explains the statistical analyses, Annex 8 contains a detailed description of the methodology and Annex 13 describes the regression analyses methodology.

2.1 General approach

This report presents a combined baseline and initial impact assessment. A baseline study generally takes place before a programme is implemented. However, as no baseline was established prior to CIP starting in Côte d'Ivoire, and there was no UTZ Certification, this study aimed to provide a reference situation as of 2013 and to record the characteristics of farmers participating in the programme as well as those farmers not who are participating but who appear similar. Future impact assessments can use this baseline to compare progress on the environmental, social and economic indicators. This is a pragmatic approach to retrospectively provide a baseline and provide an initial assessment of the impacts of the programme.

The impact assessment framework is based on a comparative *difference in difference* approach. This prepares the ground for a baseline using four types of comparisons. The first looks at differences that may be due to external factors. Any such differences due to external factors (see Annex 8) can be seen by comparing indicators of farmers operating in comparable agro-economic circumstances who are not involved in the CPQP (a control group) with changes in indicators of the farmers participating in the CPQP (the intervention group). The second compares farmers located in different agro-ecological zones to determine the possible influence of soil and climate. The third focuses on changes in indicators over time to establish the effect of interventions such as certification and provision of inputs by comparing the differences between the indicators 'before' and 'after' the intervention(s). The fourth compares farmers who are not certified to those with single (UTZ Certified) or multiple certification (i.e. UTZ and Rainforest Alliance or Fairtrade).

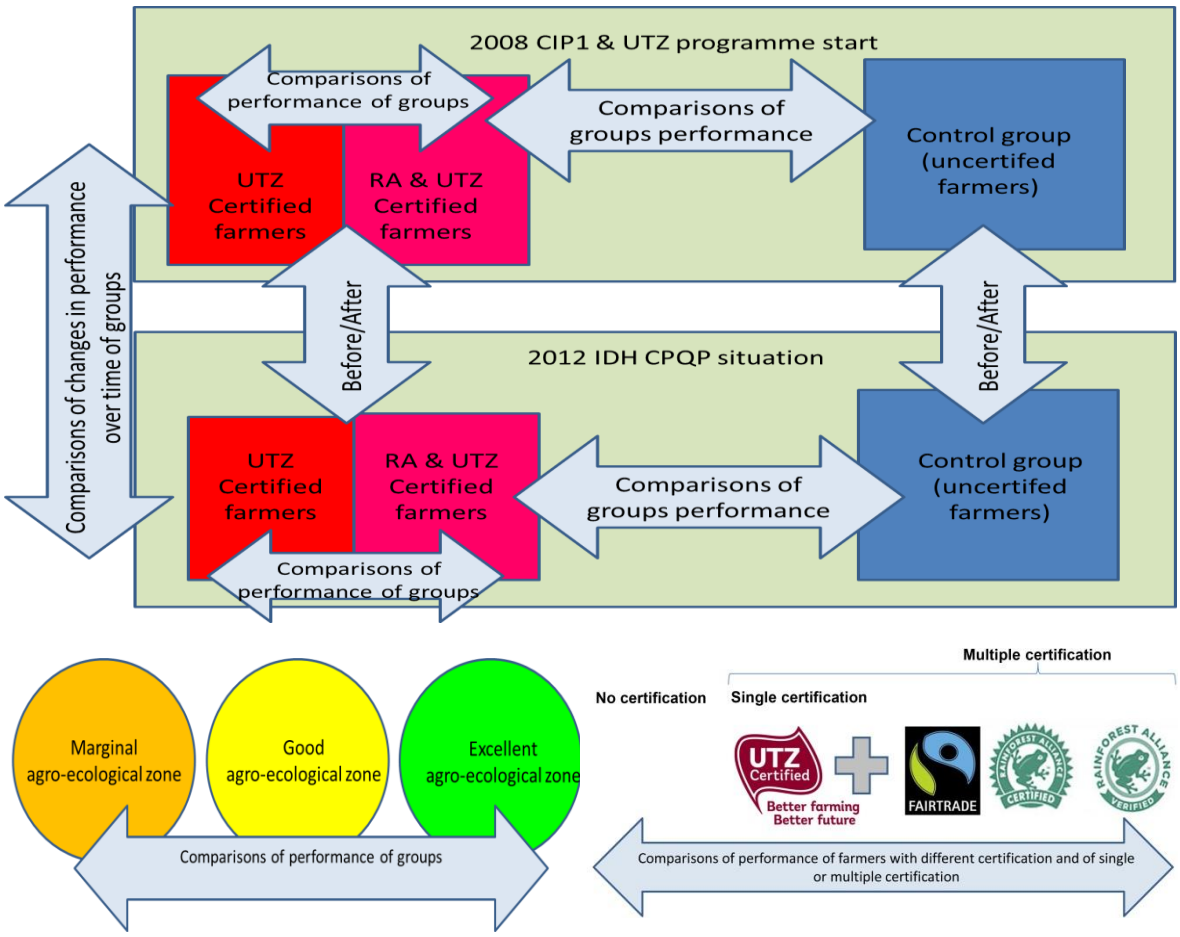

Figure 2 *Impact assessment methodology*

2.2 Scope of study

This study focused on IDH CPQP in Côte d'Ivoire, specifically concentrating on cocoa farmers who were certified or were in the process of becoming certified up till June 2013. The main focus was on UTZ Certified cocoa farmers, all of whom are members of a producer group,[2] mostly a cooperative. In June 2012, 51% of UTZ farmers were also Rainforest Alliance certified, allowing farmers with multiple certifications to be included in the study. As the majority of producer groups are linked to traders who have assisted producer group certification, the study also focused on the different activities conducted within the framework of certification and other services provided that may influence outcomes.

Ideally, baseline data should be collected before farmers actively participate in the CPQP to allow impacts to be assessed against a baseline. As no dedicated baseline data were collected prior to either the CIP or UTZ programme starting in 2008, a comparison between the before and the after certification situation is not possible. This study therefore provides a baseline and reflects the situation of farmers and producer groups in different phases of certification and of activities supported by the CPQP that commenced prior to CPQP funding. These differences made it necessary to consider how long farmers had been trained at the time of the survey, if they were certified and, if so, for how long. It is assumed that the different approaches used by traders to support producer group certification may result in different impacts for affili+ated farmers (once factors such as farm location in suitable or less suitable zones for growing cocoa, length of time certified and number of training are controlled

[2] An UTZ Certified cocoa producer sells their cocoa to a registered UTZ Certified buyer. They negotiate the contract details and explicitly agree at producer group level upon the premium that is paid per kilogram for UTZ Certified beans.

for). Thus, knowing how traders implement certification and the different types of delivery and implementation modes is an essential part of the research. Farmers and their cooperatives associated with different traders were therefore grouped separately. It is critical to acknowledge that external events and the activities undertaken by traders (and other organisations, including the government) towards individual farmers and cooperatives are expected to contribute to the impact of certification, therefore secondary data about such influences were collected. This also helps to provide a comparative baseline and triangulate findings.

After this study, it is understood that similar data may be collected for subsequent reviews. Only then can the impact of the CPQP programme be fully established by comparing changes in the selected indicators over the time period and between the control group and the CPQP group.

2.3 Impact logic

An impact logic (also known as a theory of change) is a tool to understand and visualise the rationale behind a programme, the causal relationships between a programme's activities and its intended outcomes. It indicates the impact that is and can be expected. IDH's theory of change, which was developed for the CIP1 and the CPQP, was used. The impact logics developed retrospectively with UTZ, Solidaridad and Cargill were also used to understand their interventions and the aims of those interventions. The logic depicts the entire cocoa programme and is not specific to Côte d'Ivoire. Impacts are also determined by external factors. However, external factors are not explicitly a part of nor are they displayed in the impact logic. Notable assumptions implicit in logic are specified in Annex 8. The expected outcomes and impacts are economic, social and ecological (see Annex 8).

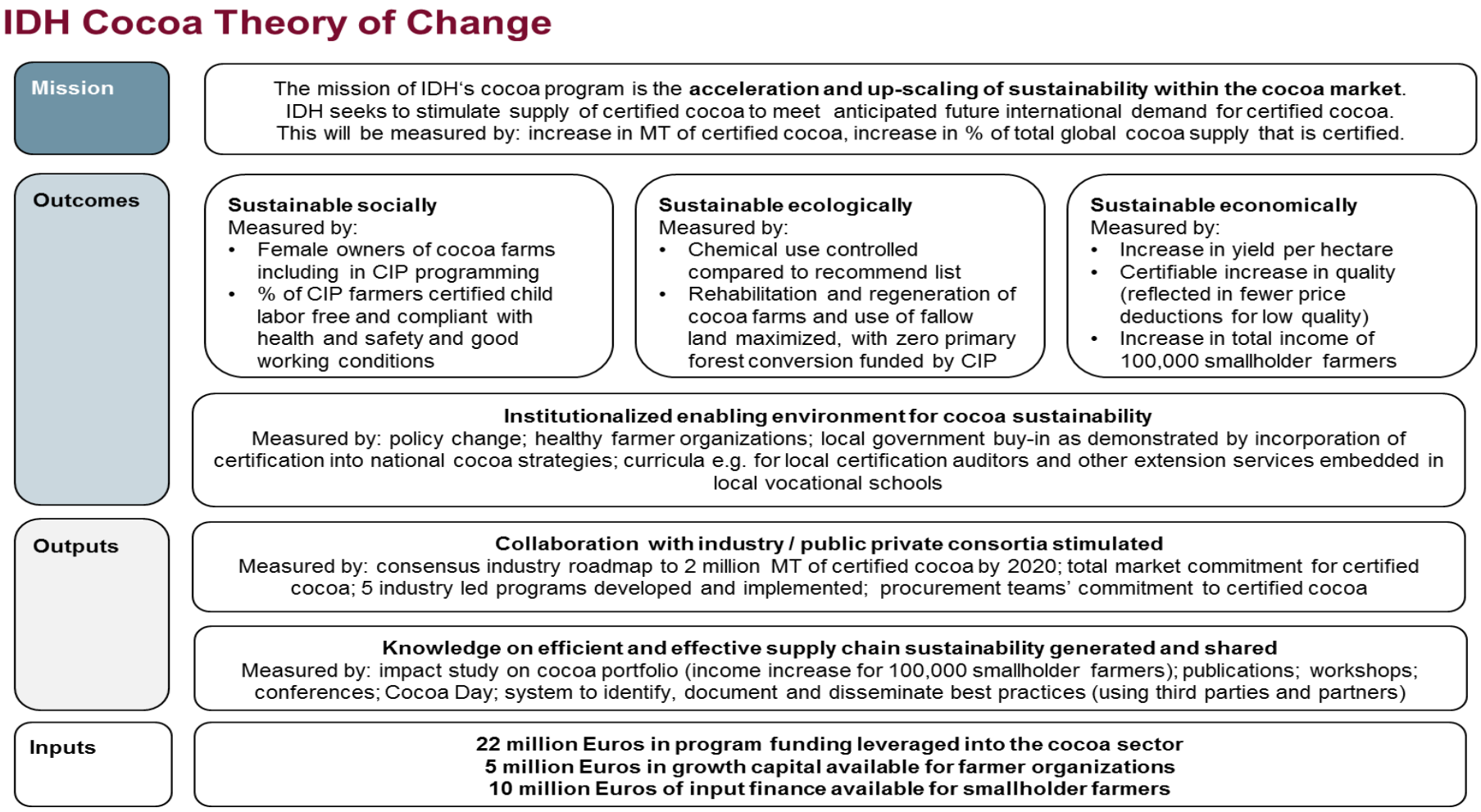

Figure 3 *IDH impact logic for cocoa.*

2.4 Indicators

To measure these expected outcomes, the 15 indicators shown in table 2 were developed on the basis of the impact logic. These broadly embrace the 29 indicators used by the CPQP, shown in Annex 2. Eight of the CPQP indicators could not be established, as they were provided too late on in the study design and required data collection methods other than those that had already been planned. Six of the CPQP indicators can be only partially measured.

Table 2
Impact indicators.

Social
1. Farmer characteristics
2. Programme inclusiveness
3. Livelihood and standard of living
4. Sustainable practices rewarded by the market
5. Stability of producer groups, services provided and access to market
6. Labour rights
7. Child labour and rights
8. Healthy and safe living and working conditions
Economic
9. Farm efficiency
10. Productivity
11. Quality
12. Profitability and long-term viability of farmers and groups
Ecologic
13. Soil and water quality
14. Waste management and reduction (related to cocoa production)
15. Protection restoration of natural habitats (on/near farm)

Annex 2 provides more detailed information on each indicator and how they are linked to the research questions, as well as the methods used to calculate and source data on the indicators. The indicators formed the basis of data collection, during which different methods were used to collect data about each indicator.

2.5 Methodological strengths, weaknesses and limitations

As the main primary data collection methods have strengths and weaknesses in terms of the validity of conclusions that can be drawn, four criteria were used to assess these (Ton et al. 2011). The methods proposed to countervail weaknesses are presented in Annex 8.

2.6 Sampling

A purposive, stratified sample of farmers were selected for data collection from farmers. The sample had to be representative of and as generalisable as possible for farmers in Côte d'Ivoire. The selection criteria for the sample were:

1. Farmers who are members of producer groups linked to traders and those with no links.
2. Farmers who are members of producer groups that are in different stages of certification and training.

3. Farmers who are members of producer groups located in three different agro-ecological zones[3] (shown in Figure 5).
4. Farmers in certified producer groups and uncertified farmers (control group).

Table 3 and Figure 4 show the distribution of the sample according to the above criteria. The sample size of least 60 farmers linked to each trader and in each agro-ecological zone was used to make the study statistically valid. Individual farmers were randomly selected using the random number generation technique. The approximate locations of the producer groups are shown in Figure 6.

Table 3
Overview of sampled producer groups and farmers.

Stakeholders	**Number of producer groups per agro-ecological zone**			**Total producer groups**	**%**
	Marginal	**Good**	**Excellent**		
CPQP producer groups	6	29	53	88	90.7
Control group producer groups	3	2	4	9	9.3
Total number producer groups	*7*	*29*	*55*	*97*	*100.0*
Trader	**Number of producer groups per agro-ecological zone**			**Total producer groups**	**%**
	Marginal	**Good**	**Excellent**		
ADM	0	1	1	2	2.1
Barry Callebaut	1	2	1	4	4.1
Cargill	3	19	38	60	61.0
Cemoi	0	1	1	2	2.1
Cocoaf Ivoire	0	2	7	9	9.3
No known trader	3	2	4	9	9.3
Natra	0	0	1	1	1.0
Olam	1	2	1	4	4.1
Zamacom	1	2	3	6	6.2
Total	*9*	*31*	*57*	*97*	*100.0*

Note that farmers and their cooperatives participating in other certification schemes either through programmes and activities with other traders was not a selection criteria, but was recognised as an external influence that may impact the results of the study. Questions were included in the producer questionnaire concerning multiple certification and associated activities, to allow this factor to be taken into account in comparisons where this was felt to be an issue (concerning knowledge and implementation of GAPs) and analyses. Individual farmers participating in the programme were randomly selected using the random number generation technique.

The sampling approach resulted in a comparable proportion of farmers located in the three agro-ecological zones. The proportion is shown in Figure 4 and is seen as similar enough to allow comparisons between the control group and CPQP participants on the basis of their location in different agro-ecological zones. A sample of at least 30 farmers linked to each trader was aimed for. Despite aiming to interview 40 farmers to allow for problems in the field, difficulties experienced by the field team and time and cost restraints meant that a smaller sample was obtained for one trader. However, the stratified sample is still seen as sufficiently robust to allow comparison between different groups of farmers. Although all farmers and stakeholders were asked the same questions, not all questions were relevant or applicable, and thus not all farmers could answer them. Where this is the case, the number of respondents is provided in the presentation of results.

[3] Using the classification of five zones developed by CIAT and partners (Läderach 2011) of the suitability for cocoa production, taking into account climate, soil and land cover.

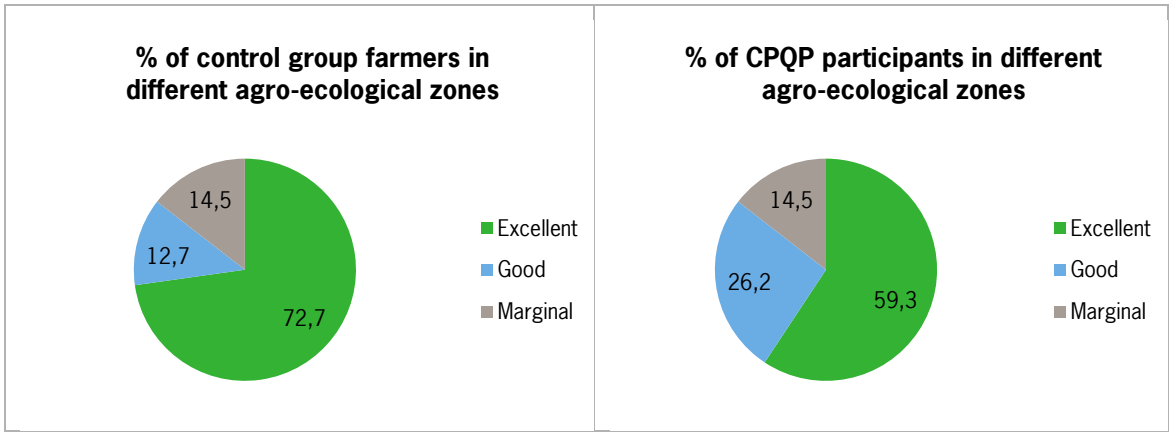

Figure 4 *Percentage of farmers participating in the CPQP and control group per agro-ecologica zone.*

The sampling procedure for control group farmers differed. The strategy used to select the cooperatives linked to different traders could not be used, as no central list of cooperatives and their certification status could be obtained from authorities. The control group was therefore selected using a snowball sampling strategy. The aim was to select farmers who were as comparable as possible to the CPQP certified beneficiaries (i.e. they are cocoa farmers in similar agro-ecological areas and are members of a cooperative, but are not UTZ certified). In each agro-ecological zone, cooperatives were identified that met the following criteria (which were intended to minimise spillover from the UTZ certification programme and related activities to the control group farmers):

1. Most villagers are involved in cocoa production
2. No UTZ certification programme has taken place in the community
3. The community is at least 10 kilometres from an UTZ Certified producer group.

It was verified that the control group cooperatives were not participating in the CPQP or UTZ Certification programme by cross-checking farmers' responses and consulting UTZ's record of cooperatives participating in the programme in Côte d'Ivoire. However, farmers may have participated in other certification schemes and programmes and related activities of traders. Questions to determine this were included in the producer questionnaire (see Annex 6).

To select farmers in the control communities as randomly as possible, enumerators either went to the producer group and randomly selected farmers for interview, or went into a community and asked to meet uncertified farmers in a producer group. The respondent was then asked to indicate another person to be interviewed (etc.). When the respondent could not suggest someone, or the indicated person was absent, the enumerator randomly found another farmer to interview in the same area.

A smaller, purposive sample of stakeholders were selected for more qualitative data collection. The selection criteria were:

1. Each trader participating in the CPQP.
2. The manager of at least one producer group linked to each trader
3. Service providers associated with each trader (where relevant)
4. Focus groups of farmers and villagers in community of at least one producer group linked to each trader
5. In-depth interviews with farmers experiencing major livelihood changes (positive or negative) due to certification in at least producer group linked to each trader.
6. School teachers, village chiefs and notables and local authorities in the communities of at least one producer group linked to each trader.
7. For change stories, farmers were purposively selected based on reports from producer group, training provider and/or other farmers of good experiences or very bad ones (poor example or negative experiences), and then approached by the team for interview.

Not all stakeholders were available at the time of the survey and thus fewer were interviewed than foreseen in the original proposal, particularly for the change stories. This means that qualitative data are illustrative but may not be representative of all stakeholders. Details on the stakeholders are presented in Table 4 and in Annex 3.

Table 4

Overview of qualitative stakeholders selection criteria and sample.

Stakeholder	Reason for selection	Number interviewed
Manager of at least one cooperative linked to each trader.	To provide in-depth qualitative perceptions of the programme, and triangulation of data provided by farmers.	6
Service providers associated with each trader (where relevant).	To provide in-depth qualitative perceptions of the programme, triangulation of data provided by farmers.	2
Focus groups of farmers and villagers in community of at least one cooperative linked to each trader.	To provide qualitative perceptions of community members about their experiences and direct and indirect impacts of the programme, and triangulate data provided by farmers and other stakeholders.	10 groups In total 121 persons including 25 women and 33 youths
In-depth interviews with farmers experiencing significant livelihood changes (positive or negative) due to certification in at least one cooperative linked to each trader.	To provide in-depth qualitative perceptions of the programme of significant change stories of good experiences or very bad ones (poor example or negative experiences).	2
School teachers, village chiefs and notables and local authorities in the communities of at least one cooperative linked to each trader.	To triangulate data provided by farmers, provide information on impacts in the wider community and impacts of the programme on school children and children's rights.	8
Traders participating in the UTZ programme.	To provide details of how the UTZ programme is implemented and associated services they provide, and their perceptions and supporting evidence of direct and impact impacts.	7 ADM, NATRA, Cocaf Ivoire (Noble), CEMOI, Olam (Outspan Ivoire), Zamacom, Barry Callebaut SACO, Cargill B.V.

The selection of the 99 farmers for measuring field size was according to their location in one of the three agro-ecological zones and their consent (see Figure 5 and 6).

Observations were made during all interviews. Farmers and stakeholders were photographed or videoed only if they had given their permission.

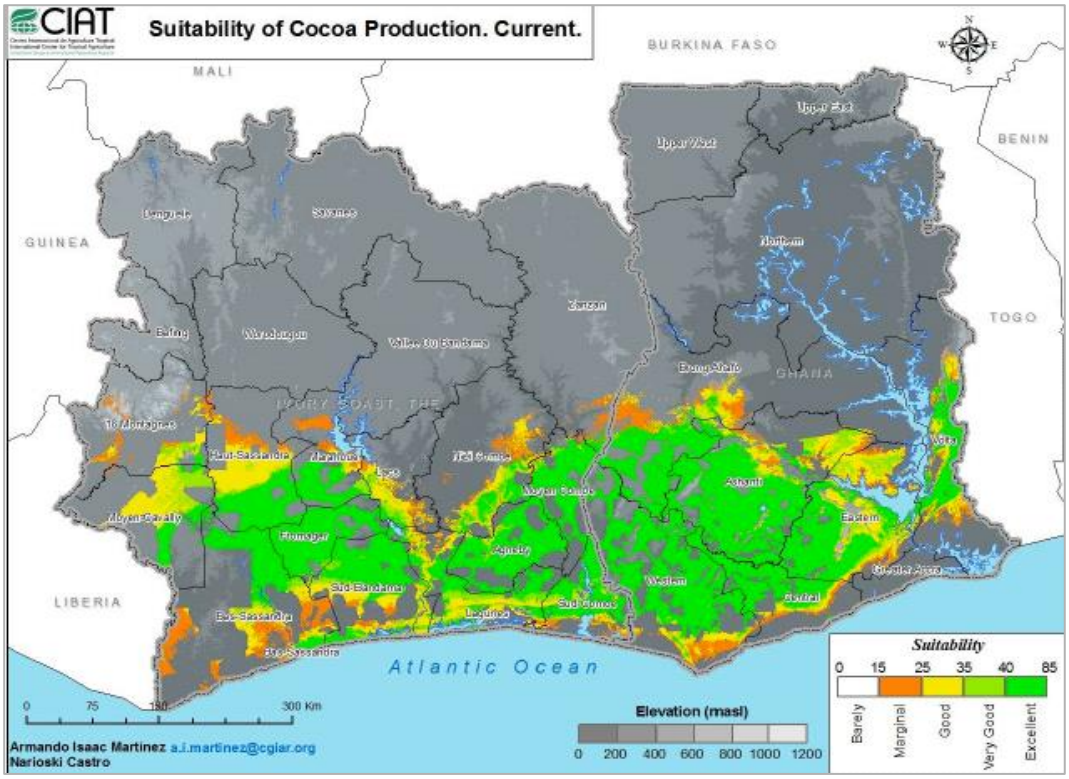

Figure 5 *Agro-ecological suitability for cocoa production in Ghana and Côte d'Ivoire Source (Läderach 2011).*

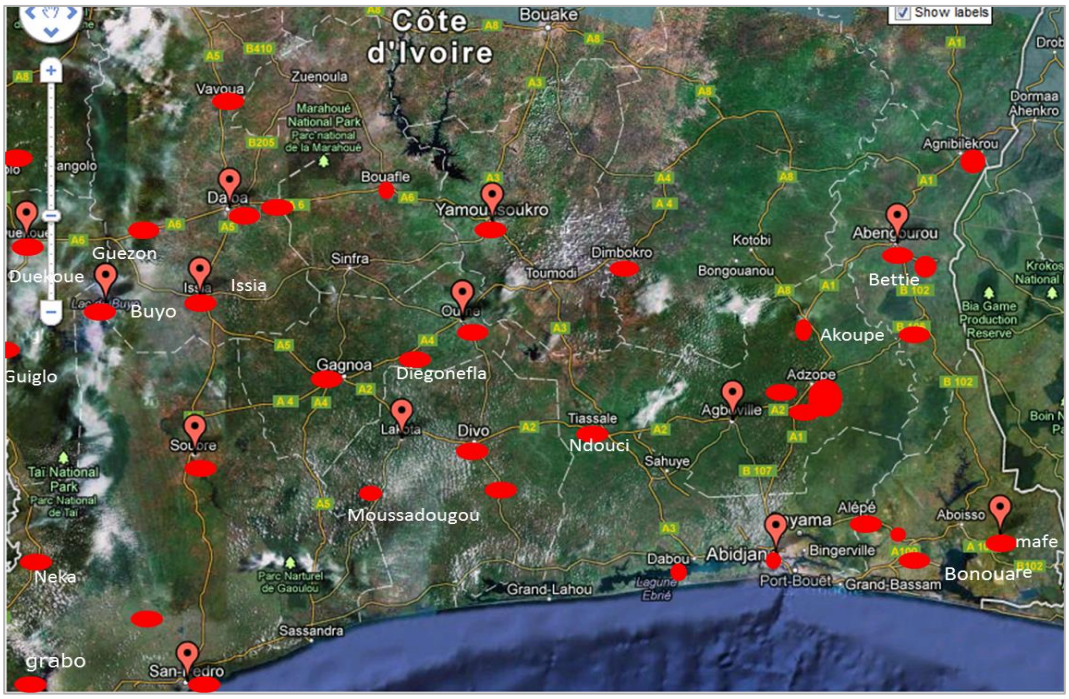

Figure 6 *Map of study locations.*

2.7 Data collection and analysis

The 15 environmental, economic and social indicators identified on the basis of the impact logics of IDH, UTZ, Cargill and Solidaridad were the main measures used to gather baseline data and measure the impact of the programme activities. Quantitative and qualitative data (i.e. farmers' and other stakeholders' perceptions of impacts) on these indicators were collected through interviews using structured questionnaires with farmers, and by means of the data made available by traders, UTZ Certified, ANADER and Solidaridad. In-depth interviews using structured questionnaires were conducted with farmers, farmer group managers, village chiefs, schoolteachers, groups of villagers, and support organisations. In addition, fields and villages were visited and observed, and 99 farms were measured using GPS. The vast majority of the data were collected in Côte d'Ivoire by nine enumerators guided by Roger Tanoh and Abel Galo of A & CV in Côte d'Ivoire in between November 2012 and July 2013. Additional phone interviews were conducted with traders in Abidjan and in the Netherlands by the WUR team. Secondary literature to provide benchmarks indicators was also collected (see Annex 10).

Data were analysed qualitatively and using a statistical program (the methods are further detailed in Annex 8). Descriptive statistics – such as the minimum and maximum values, mean, median and standard deviation, and correlations – are presented here. The terms are explained in Annex 4. Farmers were compared on key indicators such as knowledge of sustainable production, production and income through cross-tabulation, pairwise t-test and regression analysis (also explained in Annex 4). To account for both fixed and random effects that cause variations in knowledge and implementation scores, multilevel mixed-effect linear regression was used, with variables such as age, gender, and level of education used to estimate fixed effects. The full results are shown in Annex 13. A farmer's knowledge and implementation of good agricultural practices were established using a range of questions in the producer questionnaire on good agricultural practices, corresponding to the UTZ Code of Conduct. Responses were scored on a scale ranging from 0 (incorrect) to 1 (wholly correct). The higher the number, the more farmers know and the higher level of skills they possess.

Data from interviews were cross-checked with the literature and the results of the producer surveys. The preliminary results of the analysis were presented and validated at a workshop with representatives from UTZ, IDH and Solidaridad in Amsterdam in October 2013, and with seven representatives from trader companies, IDH, one service provider and five producer group managers at a one-day workshop in Abidjan in October 2013. External influences, anticipated impacts and lessons learned were also discussed in interactive working groups during the verification workshop.

3 CPQP, certification and related activities

3.1 Introduction

This section provides a description of the CPQP, certification and related activities implemented with producer groups and their farmers, and the numbers of farmers and producer groups participating in these activities. As UTZ certification is generally just one of many activities, some of which are implemented prior to and alongside certification, farmers were asked if they are certified or not and, if so, for how long, how long they had participated in which activities, and whether they are certified by Rainforest Alliance or FairTrade International (FLO). These data were used to attribute any differences in indicators to their certification status (and which certificate(s)) and to how long the farmers had been certified. The data were derived from the farmer and trader questionnaires and the literature.

3.2 CPQP activities in Côte d'Ivoire

Further to the general information provided in section 1.1, the CPQP promotes a variety of tactics and tools to create change in cocoa production, focusing on four tools: good agricultural practices (GAPs), standards systems, farmer aggregation, and financing mechanisms. The CPQP activities in Côte d'Ivoire focus on four traders (Cargill, Ecom, Barry Callebaut and CEMOI) and one processing company (Mars, enacted with their trader partners and in partnership with other organisations). The activities are detailed in Table 8. Most of the activities funded by the programme begun in mid-2012 and involve the up-scaling and out-scaling of current activities, as similar activities had been implemented prior to the support of IDH and the CPQP and certification has been on-going since 2008. For example, Mars and partners Cocoa Development Centres (CDC) and Cocoa Village Clinics (CVC) have been in operation since 2011 and CEMOI has used controlled, village-based fermentation centres since 2009.

3.3 UTZ Certification

The UTZ Certified Code of Conduct for Cocoa (UTZ Certified 2009b; UTZ Certified 2009c) provides a set of criteria for economically, socially and environmentally responsible production. The code sets standards and provides guidance and facilitation. It is based on ILO conventions and principles of good agricultural practices (GAPs). It covers production practices, GAPs related to cocoa farm establishment and rehabilitation, farm maintenance, soil management and fertilisation, integrated pest management and crop protection, and harvest and post-harvest product handling; the cocoa community's health and safety production practices and workers' rights; natural resources and biodiversity protection and maintenance. The code applies to organised groups of smallholder producers producing and selling cocoa.

Certification must be carried out by a certification body approved by UTZ Certified. A 'certificate holder' refers to the entity responsible for implementing and monitoring the requirements of the code. This can be a group of producers (organised in an association or cooperative) or another entity that buys the product from the producers and organises contracts and/or trains the producers according to the code. The certificate holder applies for group certification and is responsible for the management of an ICS. UTZ Certification requires that progress in meeting these criteria is demonstrated as part of a management cycle, internal control system and auditing. The standard allows a low level of entry by producer groups, as the number of minimum compliance requirements increases over a four-year period. Internal and external auditing of compliance with the criteria occurs at multiple levels, via

a web-based traceability system. An ICS is a documented system of quality management that manages aspects of the code and controls the producer's fulfilment of the code's requirements according to the internally defined procedures. The code speaks of 'producers', referring to persons who represent their farms towards the certificate holder and have responsibility for the products sold by the farm. UTZ Certification has been implemented in Côte d'Ivoire through partnerships with eight traders. These traders have partnerships with producer groups from which they purchase beans.

3.4 Rainforest Alliance certification

The Rainforest Alliance Certified™ seal demonstrates sustainable practices that conserve biodiversity and improve livelihoods on farms managed to the standards of the Sustainable Agriculture Network (SAN). Rainforest Alliance certification requires that cocoa farmers adhere to ten main principles of the SAN Standard dated July 2010 and the SAN Indicators for Sustainable Cocoa Production in Côte d'Ivoire 2009 (Sustainable Agriculture Network 2009). Certified farms are audited annually against the environmental, social and economic criteria in the SAN standard. These include having a management system (internal control system); ecosystem conservation; wildlife protection; good working conditions for all employees, as defined by such international bodies as the United Nations and the International Labour Organization; forced and child labour and all forms of discrimination and abuse are prohibited; occupational health and safety programmes to reduce the risk of accidents; being a good neighbour; eliminating chemical products that pose dangers to people and the environment; soil conservation and long-term improvement; and practising integrated waste management. Rainforest Alliance has been certifying cocoa farmers since 2006, first training them to conserve natural resources, increase productivity, and secure decent living and working conditions. It has implemented the certification programme together with traders and exporters. Around 80,000–85,000 cocoa farmers are now enrolled in the Rainforest Alliance certification programme in Côte d'Ivoire,[4] with farms covering over 410,000 hectares.[5] Farmers producing certified cocoas are paid a premium: they receive half and the other half is retained by the cooperative (based on an agreement between the farmer and cooperative, not fixed by Rainforest Alliance) which is used to provide services to its farmer members or for community facilities.

3.5 Activities related to certification

The activities involved in UTZ, Rainforest Alliance and Fair Trade certification are generally similar in terms of grouping producers, setting up and using internal control and traceability systems, auditing, and training of farmers and payment of a premium. They are all based on sustainability claims, using product labels as visible consumer communication tool. They use gradual, flexible compliance systems with defined minimum criteria to be met by farmers to substantiate these claims. They pay producers who are certified under the schemes prices that are comparably higher than those paid on the conventional world market. Minimum prices and premiums are fixed at a global level for Fairtrade products and negotiated on a generally higher level than for conventional products, with world market figures for organic cocoa publicly available. Rainforest Alliance and UTZ Certified operate with negotiable, non-fixed and not publicly available prices. Apart from their history, other major differences are in the focus of the content of the schemes (SAN 2010), although a high equivalence was found concerning the requirements of the standards regarding farming and environmental criteria in a comparison of UTZ Certified, Rainforest Alliance and Fair Trade Labelling International (Vogel and Schmitz-Hoffmann 2010).

Unique to the UTZ standard are requirements for actively involving external local stakeholders in environmental community-relevant issues, more specific criteria for good harvest and post-harvest practices; a hazard indication on all respective farming sites; an awareness and active communication

[4] http://www.kenyalondonnews.org/?p=3014
[5] http://thefrogblog.org/2013/10/24/a-behind-the-scenes-look-at-cocoa-farming-in-cote-divoire/

of re-entry times after agrochemical application; a lead farmer to be nominated for monitoring labour rights; the date of birth of workers to be implicitly documented; the specified treatment of sharecroppers according to local norms; a reporting mechanism run by group management to prevent the exploitation of children; and ICS and traceability criteria focusing on female attendance of training programmes, employees, duties and salaries at group level; documentation of revenues and payments to producers, transparent product pricing; recording complaints made within the group; regular meetings at group level to sensitise producers on child labour, HIV, hygiene, workers' rights and women's rights and improvements of literacy within the group.

Table 5 provides an overview of the number of interviewed farmers participating in certification programmes and the year in which they first became certified, and the total number of farmers interviewed participating in UTZ and RA certification 2008 to June 2012.

Table 5

Farmers' participation in certification activities.

Certification related to the CPQP	CPQP participants interviewed	Control group interviewed	Total
No certificate	98	144	242
Single certification (UTZ or RA)	467	43*	510
Multiple certification (UTZ and RA)	165	27*	192
Total number of respondents	730	214	944

Sources: Farmer interviews [1] UTZ (data only available until June 2012 for 85 producer groups).

Table 6

Farmers' participation in certification, training and other activities.

Type of activity	CPQP participants	Control group
Certification training	37%	27%
Farmer Field Schools (*Champs ecole*)	53%	30%
Field apprenticeship (*Champs d' apprentisage*)	46%	16%
Production or nursery programme	19%	15%
Community or social programme	19%	13%

Source: Farmers interviews. Multiple responses possible.

Table 5 and Table 6 show that farmers in the control group indicated that they were also certified for UTZ or Rainforest Alliance. This is apparent contradiction is attributed to three reasons. One is farmer error (as many farmers had difficulty in recollecting which organisations had provided training). Secondly, some farmers participated in training but subsequently did not become individually certified and thirdly their producer group did not become certified. This finding also highlights the difficulties in selecting control groups (addressed in the methodology chapter).

Table 7 provides an overview of different types of activities CPQP of participants that were supported by cocoa traders. All of the traders have their own corporate social responsibility programmes (summarised in Table 8), providing support and activities alongside and other than certification.

Table 7

Participation of CPQP participants in activities supported by traders.

Type of activity	Participation by CPQP participants
Certification support	94%
Cooperative capacity building	81%
Farmer training in the field	44%
Pesticide supply and treatment gangs	36%
Schools and literacy classes	28%
Access to credit and saving schemes	27%
Pre-finance and credit advances	24%
Pre-audits	16%
Cooperative management skills	13%
Seedling supply	11%
Nursery and training	10%
Education	10%
Demonstration and pilots	7%
Fertiliser	7%
Social training such as on HIV aids, gender, etc.	7%
Business training	6%
Fermentation	5%
Infrastructure e.g. sanitation	4%
Gender training	1%

Source: Information from cocoa traders.

An overview of activities implemented by international organisations, Ivorian government agencies, certification organisations, the private sector, research institutes, NGOs and partnerships relevant to the CPQP aims and activities is provided in Table 18 in Annex 15. Further details are provided by Hatløy (2012). This table highlights not only the many activities occurring, but the multiple partners and similarity between these activities and those implemented as part of certification. This makes it difficult to attribute changes in the indicators used in this study specifically to certification or to the CPQP.

Table 9 shows that the majority of producer groups affiliated to traders interviewed participated in certification and development activities. Compared to Table 6, these reflect that similar patterns with certification and activities focusing on farmer development being the most common activities. There are differences in the data presented in the two tables because not all farmers in a producer group necessarily participate in training, and conversely, farmers sometimes participate in activities organised by organisations and traders with which they are not specifically linked. Farmers were also often not aware which organisations had provided training and services, or named the service provider or trainer, rather than the financer. Interviewees also indicated that they were not always aware who was running or financing an activity, with some mentioning the trader, their service provider or the government. Interviewees asked family members or workers to attend training or participate in activities, especially *abunan* and *abusan* landowners.

Table 8

CPQP, trader certification and related activities.

Producer group capacity building & certification	Training & education	Farmer development					Financial support		Community development			Processing	Fermentation	CPQP
		Business skills	Demo plots	Inputs	Gifts	Nursery's & seedling supply	Credit	Advance purchase	Education	Infra Structure	Health			
Cargill West Africa														
Cocoa Sustainability Programme since 2003, Cargill Cocoa Promise since 2012 with in-house team														
Forming & capacity building of producer groups with Solidaridad since 2008. UTZ & RA Certified cooperatives. Collaborates with Mars[6], Nestle[7] and KRAFT[8].	Farmer training initiatives since 2003. Since 2009, 900 people trained in FFS field schools – since 2009, 900 people attended FFS, provided by ANADER Support via CPQP	Cooperative academy to commence in 2013 Also with support via CPQP	Since 2012 provide CDC & CVCs in collaboration with Mars, Solidaridad & ICRAF, in specific regions	Supply of crop protec-tion chemi-cals & training with Syngen-ta & ANADER, 500t of ferti-lisers dis-tributed with support from IDH CPQP in 2012	Provides t-shirts	Since 2009 300,000 improved seedlings distributed around Ganoua and Danoa since with CENERA & ANADER and support of via Nestle in 2006-2007 Support via CPQP to Mars			ICI programme in schools & with canteens	ICI programme to prevent child labour	40 Family Schools with CARE, IECD from 2009 to 2011.			CPQP since mid-2013

[6] http://responsiblecocoa.com/our-solutions/

[7] http://www.foodnavigator.com/Financial-Industry/Certified-sustainable-cocoa-source-from-Ivory-Coast-opens-up and http://www.fairlabor.org/blog/entry/nestle-gives-progress-update-consults-stakeholders

[8] http://www.greenbiz.com/news/2009/10/30/krafts-purchases-rainforest-alliance-certified-cocoa-increase-ten-fold-2012

Producer group capacity building &	Training & education	Farmer development			Financial support	Community development			Processing	Fermentation	CPQP
Zamacom (Ecom)											
Since at least 2008 in-house, agronomy team (Akwacao) with 30 people											
Since 2008 250 farmer leaders trained & equipped with transport and fuel, 24 producer groups certified RA and UTZ since 2008. Also purchase from 6 non-certified groups. Rabobank support[9].	Training programme for lead farmers who train farmers in FFS for 7 months with de 2 FFS per month and 40 farmers per CEP		Finances ''brigade phyto'' to treat trees in partnership with fertiliser distribution	Train families to manage nurseries. Support via CPQP to Mars	Support for savings schemes	Advance payments to purchase fertiliser.		School constructed 2008, but no teachers provided.			CPQP support since mid-2012
ADM											
SERAP: Encouraging Socially and Environmentally Responsible Agricultural Practices programme since 2001 and with Starbucks since 2004/2005. In-house team											
Since 2001 working with producer groups, 70 co-ops in programme by 2012. UTZ, RA and Fairtrade Certification. Collaborates with IECD, KIT, GIZ, ANADER. Also with KRAFT[10].	Since 2002 training on GAPs, labour practices, farm safety, and product quality. Participate in STCP	Nestle tree project since 2011. Since 2002 operational transparency training	Participating in IDH fertiliser programme in 2012	Nestle tree project since 2011. Participate in STCP.	Since 2005, provided tens of millions in revolving funds	Since 2005, $10 million in grower premiums, $4 million in seed money,	Partnership with co-ops & IECD on schooling programmes & canteen. Partner in ICI eliminate child and forced labour	OICI with support bore-holes, wells, medical centres, bridges	Since 2001 malaria & HIV/AIDS prevention program Collaboration in WCF Cocoa Livelihoods Programme.		

[9] https://www.rabobank.com/en/rabo_development/advisory_projects/Ivory_coast.html
[10] http://www.greenbiz.com/news/2009/10/30/krafts-purchases-rainforest-alliance-certified-cocoa-increase-ten-fold-2012

Producer group capacity building &	Training & education	Farmer development					Financial support	Community development			Processing	Fermentation	CPQP
OLAM													
Olam Livelihood Charters since 2010													
In 2010 started with 10 now have 20 UTZ Certified cooperatives. Also some RA certified.	60,400 farmers trained in GAPs & IPM via FFS. Traceable sustainability Training programme with Blommer & Costco.	9,900 farmers received Business Training	CDCs with Mars & ICRAFT	Supplied 25 t pesticides, 210 solar dryers & 1 cooperative store opened in 2012	T-shirts provided and Cooperative Award Scheme	via Nestle supported Cocoa Plan with Costco, UTZ & MARS distributed 1.3 million improved seedlings & shade trees since 2009 to 13,000 farmers, 44 cooperative nurseries.	$88.7 million 0% interest working capital to co-ops for crop purchase & $1.25m interest free loans	WCF & Echoes programme children & adult literacy classes, 250 family support scholarships awarded	1 water pump, 1 medical Laboratory, 4 Schools, 3 Health centres, 1 Maternity Unit $250,000 3 projects in 2011/12 and 8 in 2012/13	6,230 farmers trained re child labour & AIDS awareness			
Cocaf Ivoire (Noble)													
Since 2010 with in house team													
UTZ, RA and FairTrade certification of producer groups. Côte d'Ivoire Alliance of Farmers, Olam International and Blommer Chocolate (CIFOB) programme[11] since 2011 based on RA certification.	Training on GAPs					via Nestle, improved seedlings and trees since 2009				Social projects, Part of WCF Cocoa Livelihoods program			

[11] http://www.csrwire.com/press_releases/31579-Largest-Cocoa-Shipment-from-Africa-s-Ivory-Coast-Destined-for-Blommer-Chocolate

Producer group capacity building &	Training & education	Farmer development		Financial support	Community development		Processing	Fermentation	CPQP
CEMOI									
Since 2009 in-house and with consultants									
UTZ and RA Certification. Project for capacity building cooperatives supported by Rabobank. Grouping 11,500 farmers (CEMOI undated)	FFS and Ecole en Sale, with Likan Formation, Trust international, Korys Developpement durable (KDD) and ANADER		Provide and finance seedlings and setting up nurseries	Support 2 co-ops via Rabobank				15 fermentation centres (GIZ, RA, UTZ) in 22 co-ops since 2009	Support for up-scaling fermentation to through CPQP, also Blommer & PETRA
NATRA									
Since 2010 financial support to producer group									
Training on UTZ certification with ANADER. Pay and equip LF with transport for 6 months (75,000 CFAF a month). Follow up training by LF and FFS to verify GAPs.	Trained lead farmers, co-op heads & administrators (ADG) by ANADER using FFS and FS for each producer group.	Trained 8 phyto teams to treat farmers' fields			Fundación Amigó, NGO Doumé Centre educatio-nal project	SOS children's home Abobo, child labour campaign with Save the Children			

Producer group capacity building &	Training & education	Farmer development			Financial support		Community development			Processing	Fermentation	CPQP
Barry Callebaut (SACO)												
Quality Partner Programme (QPP) since 2010 with In-house team of 23 people												
Finance initial inspection and pre-audit by Ede Consulting. OCOA Raison, and for Bureau Veritas/IMO to conduct audits. Follow up and technical support by 28-person team of agro-technicians based in the zone with 8 Co-ops provide audit, training, maps. Started UTZ Certification with 7 co-ops and by 2011 54 co-ops (47 to 60 co-ops with 12,000 farmers RA[12] since 2005, 6 co-ops UTZ with 300 members) and 6 traitants UTZ Certified, 18,000 farmers by 2012. Also buy FLO-CERT cocoa.	Since 2010 6 producer groups work with FFS and ANADER youth training with AGE for 1 co-op), work with a group of innovative farmers, support for warehouse stock managers, provided management consultants, for auditing ad accounting	since 2008 business training & producer group management and assist with ICS. provided by NGO Socodevie to 90 co-ops	Provide phyto spraying team	Support for nurseries and replanting with selected cooperatives	Support for revolving funds with selected cooperatives	Prefinances 100% with 50 % paid by farmers & 50% by cooperative. Provide materials & transport means for cooperatives.	In partner ship with co-ops provided school kids centre, schools,	In partner ship with co-ops provided wells,	partners with co-ops for medical centres, vaccination camp aign, sports, co-finance sports events			CPQP since mid-2012 Also via support to partner Biopartenaire

Sources: Producer group and trader interviews, and company literature (Global Witness 2007; Rosenberg et al. 2009; ADM 2011; Blommer 2011; Cargill 2011; Cargill 2012a; Cargill 2012b; COSA 2012; NCA 2012; Paschall and Seville 2012; WCF and IDH 2012; NATRA 2013; Noble Group 2013a; Noble Group 2013b; Noble Group 2013c; Cargill undated-b; Cargill undated-a).

[12] http://worldcocoafoundation.org/barry-callebaut-pays-chf-2-8-million-in-premiums-to-cote-divoire-cooperatives-for-rainforest-alliance-certifiedtm-cocoa/

Table 9

Cooperative's participation in certification, training and other activities.

Type of activity	Certification		Farmer development								Inputs		Pre-finance & credit		Community development				Processing
	Pre-audits	Certification support	Producer group capacity building	Farmer training in-field. FFS, FS)	Gender training	Nursery & training	Management skills	Business training	Demonstration & pilots	Seedling Supply	Fertiliser	Pesticide supply, treatment gangs	Pre-finance advance	Access to credit/savings schemes	Education	Social training	Infras-tructure	Schools & literacy	Fermentation
% of 90 producer groups affiliated to traders	6%	88%	80%	27%	1%	8%	4%	4%	6%	10%	6%	20%	13%	16%	8%	6%	4%	13%	5%
% of 9 producer control groups		27%	46%			15%									13%				

4 Inclusiveness of CPQP and farmers' characteristics

4.1 Introduction

This section responds to the first research question. This examines whether the CPQP is inclusive and whether certified farmers are representative of Ivorian cocoa farmers, in terms of incomes, gender, age, farm size and tenure and ethnic or migrant status. To determine this, the characteristics of CPQP farmers are first presented. Inclusiveness is also determined by assessing whether knowledge and benefits gained through the programme reach others working on farms, such as spouses, workers, tenants, children, etc.

Box 1 Summary: Inclusiveness of the CPQP

The CPQP includes what appear to be typical Ivorian cocoa farmers in terms of their gender, age and farms: the vast majority are older males with old cocoa trees on small farms. However, women have not been focused upon specifically with 3% of CPQP respondents interviewed being female, despite being a target group. Farmers participating in the programme have higher production, production costs and quality, and similar incomes to the control group. As men typically own cocoa farms or have sharecropping arrangements, they are most likely to be registered as a member of a producer group. The CPQP therefore focuses mostly on male, cooperative members, which are not typical of Ivorian cocoa farmers.

Women are involved in half of the activities taking place on cocoa farms, as are youths. But due to the focus of certification based programmes on farmers registered with a producer group, women and youth workers on cocoa farms appear to have been only marginally included in the programme. UTZ, some traders and their partners in Côte d'Ivoire are aware of this issue and have started to address this by focussing more specifically on women in a number of training and empowerment activities on a small scale. As most farmers train others, including their wives, children and workers, knowledge relevant to certification and GAP is passed on, however the extent to which this is implemented however is not known.

4.2 Farmers' characteristics

The main characteristics of CPQP participants are presented in Table 10. Compared to the control group, farmers have a comparable number and size of cocoa farms. The vast majority are smallholder farmers. However, compared to farmers in the control group, CPQP participants have statistically significantly[13] older cocoa farms. Other statistically significant differences include higher levels of production, higher production costs, higher productivity, better quality and higher levels of knowledge of GAPs, and spending statistically significantly less on crop production products (shown in Table 14) and lower production costs (see Figure 54 and Figure 55). Net cocoa income, household income and income from other sources were all similar.

A small proportion of farmers (2%) had a net negative income from cocoa. These differences might be explained by the time delay between learning and implementing new practices, and then seeing increases in productivity (i.e. from replacing old trees and GAPs). Whilst these activities result in the more accurate application of inputs, and thus lower the costs of production inputs, total production

[13] See Annex 4 for explanation of statistical significance.

costs per kg increase as more time is spent on the farm and applying GAPs. Negative income may often not be apparent for farmers, as costs are incurred over the course of a year or more. Income, however, is generally received at the end of the harvest season(s).[14] Many farmers do not keep records of all production costs for all their fields and farms. This may also be the result of a selection bias whereby more advanced farmers and cooperatives are the first to be invited to join sustainability and certification programmes.

In the focus groups, 85% of the interviewees (men, women and youths) said that the higher income resulting from the higher production of cocoa means that there is now more money to spend on family needs. Youths interviewed stated that higher income has allowed more money to be spent on their education needs. There is no evidence of specific benefits accruing to (male or female) labourers.

Most women in Côte d'Ivoire, as in much of West Africa, are not land owners and thus do not have direct control of cash crops, including cocoa farms, and are not directly able to influence major household and economic decisions (Gray and Kevane 1999; Doss 2002; IIPRI 2002). The stakeholder surveys also confirmed that generally, Ivorian women do not hold land titles. Discussions in the verification meeting suggest that this is gradually changing. Although there is little literature on the specific situation in Côte d'Ivoire and more on West Africa, literature (Gray and Kevane 1999; Doss 2002), respondents and traders all indicated that there are fewer independent women also due to ethnic and cultural differences. Independent, female farm owners were more prevalent in the Sud-Comoé region near the Ghanaian border, where a number of all-female cooperatives are also active.

Demographic characteristics
Compared to benchmarks provided by other studies, similar patterns emerge in terms of basic demographic characteristics. Cocoa farmers were reported as being mostly older men with an average age of 49 (FSG 2009). The number of household members for which a farmer is responsible tallies with other studies (Ruf 2007). Compared to the control group, farmers participating in the programme are of a similar age and sex: the majority of both being male. Literature indicates that female farmers, however, have a lower average age (35) and tend to be household heads (UTZ Certified and Solidaridad 2009). Such differences can be explained by the traditionally large age differences between husbands and wives (leading to a high number of widows), male mortality from AIDS and war, and male urban migration. However, it is low compared to estimates.

Whilst the number of independent women cocoa farmers in Côte d'Ivoire is unknown, estimates indicate up to 20% of farmers may be female (International Institute of Tropical Agriculture 2006). Reports (UTZ Certified and Solidaridad 2009), focus group discussions and interviews, indicate that women in most cocoa growing households contribute to many aspects of crop production, particularly doing such work as field preparation, weeding, planting, transport from the field, drying and sorting. Keladoué (2010) indicates that female labourers provide between 48% and 69% of farm labour. According to Oxfam (2013), at least 180,000 small-scale cocoa farmers in Côte d'Ivoire are women, and many more work on cocoa farms as labourers. Women, however, are the 'invisible cocoa farmers' (UTZ Certified and Solidaridad 2009).

In focus group discussions, women indicated their lack of awareness of and involvement in support activities and certification. It is indicative that that 20% of the people participating in the focus group discussions were women. However, women do benefit from cocoa income or when income from cocoa increases. Among the wives of farmers participating in focus groups, about 65% indicated receiving a larger proportion of cocoa income and 4% had received land to grow cocoa. Some 10% of the women in focus groups reported not seeing any statistically significant change in their livelihoods since the inception of the UTZ programme, and about 25% of the women indicated that there were no community programmes in place to support income generation activities for them.

[14] Harvesting is conducted almost year round, but there are generally two peak times in the year with the main harvest at the end of the wet season, from January through March, although seasons can vary.

Few differences were noted between the ethnicity of farmers in the programme and the control group. Whilst farmers from many ethnic groups participate, Baoulé farmers dominate. This is similar to Ruf and colleague's (2013) study of Rainforest Alliance (RA) certified farmers, which found that, probably unknowingly, certification agencies articulate their activities towards the dominant social structures, which are ethnically influenced. The Baoulé dominate RA certification because they were the first to organise themselves into cooperatives. Farmers from Burkina Faso represent 23% of certified farmers.

Cooperative membership

Due to the study design, all surveyed farmers were members of cooperatives. This does not reflect the situation of the average cocoa farmer in Côte d'Ivoire. Current, accurate figures on the number of cooperatives and members are difficult to obtain, with official sources listing only 32 approved cooperatives in the 2013/2014 season.[15] It is estimated that around 30% of cocoa production originates from cooperatives.[16] The popularity of collective action has seen peaks and waves, related to encouragement and facilitation by the state, private sector and projects, and a general interest in cooperatives (Amoah 2009; Paschall and Seville 2012). With the current increasing popularity of different certification schemes and their approach of including cooperatives, certification has been a major driver behind the renewed formation of cooperatives. On average, farmers had belonged to a cooperative for 4.5 years and 75 % of all farmers had become a member since 2008.

Quotations 1 Inclusiveness

Female farmer, Duékoué: *Thanks to certification, my husband gives me more money.*

Male farmer, Daloa: *Yes, we share our gains with our wives. There are some farmers who have given a piece of their cocoa farm to their wives.*

Young farmer, Guitry*: I would like to give a piece of my farm to my wife but I cannot. I have only two hectares; if I give a share of it to her, I will not be able to fill my family needs.*

Male farmer Dagadji, San-Pedro: *Yes, I train my wife, as she is part of my labour force and certification requires training all the people who work on the farm.*

[15] http://www.conseilcafecacao.ci/index.php?option=com_content&view=article&id=78&Itemid=147.
[16] http://www.bloomberg.com/news/2013-10-24/ivory-coast-cocoa-cooperatives-delay-buying-on-funding-troubles.html.

Table 10

Key data on farm and farmer characteristics of CPQP participants.

Indicator	Unit of measurement	Results Mean	Median	Standard deviation	Minimum	Maximum	Number of respondents	Statistically significant difference [a] between CPQP participants and control group
Age	No. of years	46	45	11.76	20	83	708	0
Gender	% male	96%					725	Too few women for meaningful analysis
Number of persons the farmer takes care of	Number	13	11	10.14	0	170	715	0
Position in household	%	91% household head, 4%: wife, 2.2% other adult, 3.1% child					715	Not analysed
Particular position in community	%	Traditional authority 63%, religious leader 9%, family or clan head 1%, producer group 9%, lead farmer 4%, trader 1%, youth group leader 14%, School teacher 1%					176	Not analysed
Migrant status	%	10% first generation immigrants (92% Burkinabé, 8% Malian) 10% 2nd generation immigrants (92% Burkinabé, 8% Malian)					623	Not analysed
Ethnicity	% of ethnic groups	28 ethnic groups: of total Baoulé 46%, Attie 24%, Guéré 6%, Bété 5%, Senoufo 3%, others >1%					623	Not analysed
Membership producer group	Number	100%					725	0
Farm ownership	%	74% founder, 20% inherited, 6% manger, 1% other.					721	Not analysed
Knowledge levels	Score, scale 0-1	0.24	0.22	0.11	0.03	0.65	722	+
Implementation of GAPs	Score, scale 0-1	0.24	0.24	0.05	0.08	0.43	722	+
Number of cocoa farms	Number	1.16	1.00	0.48	1.00	5.00	717	0
Cocoa farm size (all farms)	Hectares (estimated by farmers & known measured)	5.34	4	4.61	0.5	39	717	0
Cocoa farm size (all farms)	Hectares (measured)	3.70	3.00	2.91	0.6	18.77	99	Not analysed
Age of main farm	No. of years since establishment	21	19	10.65	3	70	675	-
Cocoa production (main farm)	Kg	2,202	1,500	2,183	10.00	23126	678	+
Cocoa production (all farms)	Kg	2,326	1,500	2,959	0.00	39,500	725	+
Total labour costs*	CFAF per hectare	118,123	89,759	91,099	666	726,678	720	0
Total input costs	CFAF per hectare	39,152	11,891	39,000	0.00	230,000	725	0
Input costs (fertilisers)	CFAF per hectare	18,750	9,323	19,000	0.00	200,000	725	0
Input costs (pesticides)[a]	CFAF per hectare	16,017	4,015	16,000	0.00	83,000	725	0
Input costs (fungicides) [a]	CFAF per hectare	1,094	1,167	1,000	0.00	21,000	725	-
Input costs (herbicides) [a]	CFAF per hectare	3,201	2,107	3,000	0.00	30,500	725	-
Input costs (planting material) [a]	CFAF per hectare	91	978	0.00	0.00	15,000	725	0
Total production costs [c]	CFAF per hectare	157,275	91,554	128,341	35,303	766,678	720	+

Indicator	Unit of measurement	Results Mean	Median	Standard deviation	Minimum	Maximum	Number of respondents	Statistically
Total production costs per kilogram	CFAF per kg							+
Productivity (main farm)	Kg per hectare							+
Productivity (all farms)	Kg per hectare	453	377	379	0	4500	717	+
Cocoa farm efficiency	Economic input/output ratio	12.16	8.21	13.23	0.14	91.39	519	0
Gross income from cocoa (all farms)	CFAF per year	1,858,918	1,120,000	2,316,769	7250	28,637,500	521	0
Gross income (main farm)	CFAF per year	1,612,846	1,087,500	1,607,406	7250	13,875,600	520	0
Net cocoa income	CFAF per year	1,461,073	958,242	1,597,884	-195730	13,677,734	519	0
Gross income from other sources	CFAF per year	267,325	0	2,011,366	0	52,000,000	725	0
Gross total household income [d]	CFAF per year	2,345,894	1,499,300	3,654,155	300	64,800,000	566	0
Cocoa quality	% of farmers whose beans are rejected by producer group	2.1%					705	-
Farmer's reported satisfaction with livelihood	Farmer's reported perception							+

Notes: a Cost calculated based on costs for the main cocoa farm only. b Cost calculated based on costs for the main cocoa farm only. c Total production costs comprise labour costs and input costs. Where input costs were not provided these were calculated by median costs per cost type.d Based on farmers reported income net cocoa income and gross income from other sources. e Due to the large number of different community and household positions, migrant status and ethnicities, further analysis was not conducted as the small size of these different groups not allow provide sufficient statistical basis for meaningful analysis.. f The study design and sampling did not include farmers who are not members of cooperatives, as these were not felt as comparable with the UTZ programme farmers.

Key: + Significant positive difference, - Significant negative difference, 0 No significant difference.

4.3 Representativeness of CPQP participants

The goal of IDH is to reach farmers who can benefit from their programme. The theory of change underlying the programme implies that these may not the poorest farmers and may well be not representative of farmers in Côte d'Ivoire, as for example, lead farmers who were able to train and support others are targeted through UTZ Certification, and likewise, farmers organised into cooperatives were initially targeted by traders, as well as those willing to join cooperatives to benefit from the programme. It also aims to target female owners of cocoa farms.

Comparing farmers participating in the CPQP to the control group and to benchmarks in literature, and feedback from the validation workshop, it is concluded that the farmers in the sample are similar to the average farmer in the Ivorian cocoa sector in terms of age and farm size. The major difference is that all farmers are members of a producer group. This was to be expected because farmers who in the process of becoming UTZ Certified need to be a member of a producer group, and the control group was selected to mirror the target group. Another anomaly is that activities directly focussing on the certification programmes (and the majority of associated activities) have targeted registered producer group members who own or sharecrop farms. These are generally male. Female and younger labourers have had less opportunity to be included, as 97% of farmers interviewed were male. This means that the programme has inadvertently excluded women and youths, despite its aim to target female owners.

In Ghana, workers under different types of farm ownership experience the benefits of certification differently (de Jong 2012), and a similar situation is expected to exist in Côte d'Ivoire. Due to the design and target group of the study, workers were not interviewed.

UTZ, Solidaridad and Cargill have been aware of the gender issues in cocoa farming since 2009 (UTZ Certified and Solidaridad 2009), and a number of activities have been implemented. However, this does not yet appear to have resulted in up-scaling by implementing partners to include female and youth workers and farmers in certification and related activities. By focussing on producer groups, unorganised farmers are only able to structurally benefit from programme activities if they are organised. Whilst a producer group focussed strategy has been effective in reaching large numbers of farmers and aiding access to traders to both sell their produce and receive support services in the last five years, farmers' and producer groups' comments indicate that further support to strengthen and professionalise producer groups is essential to ensure that this strategy succeeds.

Some traders and partnerships such as the STCP (International Institute of Tropical Agriculture 2006), and Solidaridad in conjunction with Cargill, have addressed women's role on farms specifically (see Table 18). The number of such activities and women targeted are however small. They have targeted women and used innovative methods to train and empower them, which were reported as being appreciated by female farmers.

4.4 Extent that knowledge and benefits reach others on certified farms

Most UTZ programme participants (835) trained others after receiving training as part of the UTZ programme. About 30% trained their wives and 30% their children, 17% trained their workers and 5% trained other farmers, whilst 17% reported not training anyone. This finding indicates that despite the small proportion of women being directly involved in the UTZ certification programme, the programme has indirectly had a potential impact on more women, as lessons and training have been passed on. The extent to which women, workers and other farmers implement this training on certified and non-certified farms is not known, as these people were not interviewed.

Quotations 2 Engaging female cocoa farmers and workers

Cooperative manager, Guitry: *There are no community programmes addressing the improvement of women's wellbeing and empowerment. Only female certified farmers benefit from the services of the co-op in the same way as certified male farmers.*

Photo 1 *Women drying cocoa beans.*

5 Influence of certification and other activities on knowledge and practices of cocoa farmers

5.1 Introduction

This section responds to the second research question. It presents the findings on how **certification and other activities of implementing partners influence knowledge** (of GAPs, social and environmental issues in line with the code of conduct) **and related behaviour/practices of cocoa farmers in Côte d'Ivoire** and the **results of these in terms of a better life, income, crops and environment.**

In this chapter, information is presented on the baseline situation of the CPQP participants. This baseline generally concerns activities they have already participated in, as presented in Chapter 3. Information from quantitative and qualitative analyses that were based on the survey of 944 farmers and on interviews with 24 stakeholders and 10 focus groups is presented. The quantitative analyses provide an *indication of the status of participants and the potential impact of previous activities.* A proxy has been established by comparing differences in indicators with between CPQP farmers and the control group and between farmers with different certification status (non-certified, single certified, multiple certifications). It thus cannot be established whether the differences and correlations found are due to the implementation of the activities, other external factors or due to a selection of CPQP participants, highlighted in Chapter 4. The quantitative impact of the CPQP can be established using subsequent measurements in the future.

Box 2 A word of caution about attributing impacts to the CPQP

The multitude of prior and parallel activities that seek – directly and indirectly - to improve the crops, lives, incomes and environment of Ivorian cocoa farmers make it impossible at this baseline stage of the impact assessment to attribute impacts found to the CPQP, certification or other activities. Care therefore needs to be exercised in interpreting impacts and attributing causality. The CPQP impact logic also recognises that other projects, programmes and interventions may affect performance on key indicators and acknowledges that including certification related interventions and relevant knowledge and skills may have been acquired prior to participation in the CPQP. In subsequent impact assessments, causality can be better attributed now that this baseline has been established.

5.2 Impact on knowledge levels of good agricultural practices

This section responds to the second research question. It presents the findings on how the certification and related activities of implementing partners influence knowledge (of GAPs, social and environmental issues in line with the UTZ Code of Conduct) and the related behaviour/practices of cocoa farmers, and the results of these in terms of a better life, income, crops and environment.

Information from two types of analyses is assessed: the quantitative and qualitative analyses based on the survey with farmers, and quantitative and qualitative analyses based on interviews with stakeholders and focus groups. The quantitative analyses provide an indication of potential impact. As only one measurement has been undertaken, the evolution over time of the indicators cannot be reported upon. A proxy has been established by comparing differences in indicators with the control group of uncertified farmers and examining differences in indicators for farmers at different phases of

participation in the programme. Box 2 explains the difficulties in attributing the differences, correlations and trends over time found to the implementation of the programme.[17] The quantitative impact of the programme can be determined in future assessments.

Box 3 Summary: Contribution towards increased knowledge and practices of cocoa farmers

Measured using indicators about knowledge and implementation of good agricultural, social and environmental practices, overall knowledge and implementation of GAP, record keeping and biodiversity conservation practices is generally higher among farmers participating in the CPQP than farmers in the control group, who are not participating. It is not possible to attribute these to the programme or certification, as differences may be explained by a farmers' knowledge prior to joining the programme (which was not measured). CPQP farmers' knowledge was however low concerning methods for applying fertilisers, weeding, soil fertility and record keeping. The weakest areas of implementation of GAPs were on cocoa pod management, field management, soil and water conservation, inputs and fertiliser use, tree and vegetation management on farm, and on-farm waste management.

Knowledge levels were predicted in the impact logic to improve with training and increased participation in the CPQP. Even though the knowledge levels of CPQP farmers are higher than those of the control group, knowledge levels were relatively low, with maximum averages of 0.25 out of 1 (see Figure 10 and Figure 11), indicating that 25% of all questions on good agricultural practices and the UTZ Code of Conduct were answered correctly. Certified farmers have a higher knowledge level than non-certified farmers. Surprisingly, there was a negative association between knowledge and participation in farmer field schools and field apprenticeships, with participants having a lower knowledge level than non-participants. This finding is difficult to explain, but may be due to the farmers initially invited to participate in trader's programmes having high or higher levels of knowledge.[18]

Knowledge levels were also associated with other variables. Positive associations (shown in detail in Figure 80) were found between farm size and knowledge levels: the larger the main farm and the size of all farms, the higher the knowledge level. Farmers in the excellent agro-ecological zone have higher knowledge levels than farmers in good or marginal zones. These two findings may be explained as farmers have the possibility to apply their knowledge and benefit from slight efficiencies in scale and a more favourable environment for growing cocoa. Members of a producer group have higher knowledge scores than farmers who are not members. An explanation for this was provided in the stakeholder interviews, where farmers indicated that membership facilitates exchanges between members (see Figure 78).

Farmers' perceptions of the GAPs about which their knowledge had increased most were weeding (26% of farmers), pruning (26%), crop protection control (21%), phytosanitary harvesting techniques (16%) and fermentation and drying (11%) (shown in Figure 14). Producer group managers indicated that farmers face problems implement pruning according to GAPs and require follow-up training.

[17] Unanticipated impacts are presented in section 6.4.

[18] So-called low hanging fruit, where traders invited groups with which they already had good relationships and good experiences as the first to join their programmes, then expanding the programmes to other groups.

Quotations 3 Impacts on knowledge

Male farmer, Guitry: *Before, I produced between 500 and 800 kilos from two hectares; last season, I produced one tonne. With certification, we learned to love our plantations. Before, we hardly put our feet there. It was a job for labourers. Now we go more often.*

Male farmer, Diegonefla: *Yes, we have learned how to prune, to weed, to harvest in time, to have a good fermentation, to dry, to select... and the impact has been an increase in production and decrease in plant diseases.*

5.3 Impact on the application of good agricultural practices

CPQP participants and certified farmers implement GAPs better than farmers in the control group and farmers who are not certified, as shown in Figure 12 and Figure 13. However, as with knowledge levels, farmers' levels of implementation of GAPs are quite low with an average of 0.24 out of 1. Farmers with higher knowledge levels implement GAPs in a better way than farmers with lower knowledge levels. Other factors that have a positive relationship with the implementation of GAPs are UTZ certification, membership of a producer organisation, ownership status (managers implement GAPs better than other types of owners), and farmers in the excellent agro-ecological zone also implement GAPs in a better way than farmers in the other zones. More information is provided in Annex 12 on the implementation of the GAPs by programme participants.

Quotations 4 Implementation of knowledge of GAPs

Non-certified farmer, Guitry: *I am not yet certified but I copy what my neighbours who are certified do, as they apply good practices especially in terms of weeding.*

Producer group manager Guitry: *The internal inspection sheet allows us to evaluate what farmers have learned from training and sometimes we adjust and do additional specific training. The first year, 171 out of 250 farmers passed the evaluation; the second year, almost all of them passed. We have to follow them carefully as it is only after several visits that they implement GAPs, such as dosing the right density. We go smoothly since many of them are old.*

Box 4 Summary: Social impact

Programme participants have generally higher levels of satisfaction with their livelihoods. Overall, farmers were satisfied with the impact of certification and training on their livelihoods, in terms of increased production, increased revenue, and helping farmers to better cater for their family needs.

In 2012, the average price received by farmers for a kilogram of cocoa was 725 CFAF, with no differences between the farmers in the control and those in the CPQP. This amount did not differ between the different types of buyers. All certified farmers had received a premium, on average 50 CFAF a kg. The premium was stated to be the most important motivation for farmers to become certified and to sell to producer groups, in particular in the earlier stages of participation in the programme when productivity and quality increases have not yet materialised.

Farmers were between neutral and satisfied with the services delivered to them by their producer groups. However, 40% of farmers were not satisfied and proposed areas for improvement, particularly providing access to inputs and credit.

Generally, labour rights are not well respected by any of the farmers, although certified farmers have slightly better performance than non-certified farmers or farmers in the control group.

Farmers knowledge on correct child labour practices and rights is low, and children perform activities on certified farms that they should not be performing, albeit on a small scale.

CPQP participants and certified farmers had better knowledge and implementation scores than their counterparts on safe working conditions. However, their low knowledge and implementation levels about personal protective equipment indicate that improvements could be made.

5.4 Social impact

Livelihoods and standard of living

Certified farmers indicated that they are more satisfied with their livelihoods than non-programme participants and farmers who are not certified (Figure 15, Figure 16 and Figure 17). Interestingly, the median satisfaction level is higher than the mean, indicating that some farmers are very unsatisfied with their livelihood, which negatively influences the mean.

Satisfaction levels are influenced by several factors. Increasing knowledge levels, farm size and productivity are related to increasing satisfaction levels, and UTZ or RA certified farmers are more satisfied than non-certified farmers. Farmers in the excellent zone are generally more satisfied than farmers in the other zones, and farmers in good zones are generally less satisfied. Negative relationships have been found between the number of people in the household, participation in a certification programme or 'other' programme and satisfaction levels. Figure 15 shows that farmers participating in the CPQP have higher levels of satisfaction on a range of livelihood indicators compared to the control group. Future assessments will enable testing of whether this relationship can be attributed to previous support activities or other factors.

Overall, farmers were satisfied with the impact of certification and training on their livelihoods, in terms of increased production, increased revenue (thanks to the premium and to generally higher prices paid by traders with whom they are linked), and in turn higher spending capacity for family needs. They also indicated a positive outcome of increased collaboration among farmers. Farmers stated that they used higher cocoa incomes to pay for everyday needs for the family, for children's schooling and clothes, and to reinvest in cocoa farming, as shown in Figure 18.

Quotations 5 Livelihoods and standard of living

Young farmer, Anouanzè de Duékoué: *Our way of living has changed because we have changed the way we do many things. For instance, we do not use empty boxes of chemicals any longer. We do not spray in our fields anymore; it is now done by professionals.*

Male farmer, San-Pedro: *Before we treated ourselves, now it is the professional phyto sanitation service that treats our fields and so we are less exposed to illnesses.*

Male farmer, Daloa: *The cooperative gave us a machine to spray but they have taken it back. We do not know why because they have not told us. We share the pesticides but it is not sufficient. We three share 1 litre.*

Most of the farmers (82%) had experienced an improvement in their living conditions since their participation in a certification programme (see Figure 17), which shows that only a very few had experienced a negative change. About half of the farmers indicated that no change had been observed in the schooling situation for children (construction of schools, number of teachers, literacy programme), but a third of the farmers indicated a change (Figure 20).

With regard to access to healthcare, farmers experienced changes (shown in Figure 21 and Figure 43) similar to those in schooling: about half of the farmers said there had been no change, and one third indicated a positive change. More UT programme participants indicated that there had been no change in the healthcare situation than control group farmers, but fewer UTZ programme participants indicate not knowing an answer to the question. Programme participants more often indicated a positive change in access to inputs than control group farmers (Figure 22). Control group farmers indicated more frequently no change compared to two years ago.

Do you share benefits with others?
More than half of the farmers share their benefits with their family members (see Figure 65). Even though CPQP participants seem to share benefits more often with their family than control group farmers, the difference is not statistically significant. No other statistically significant differences between the groups were found.

The majority of farmers (92%) indicated a variety of positive changes noticed after certification, and 8% indicated no change. The most frequent response (33% of 474 certified farmers) was better farm management due to GAPs, 16% indicated they had used their increased income to construct a house or purchase a motorbike, 12% mentioned a better ability to plan and manage their incomes, 9% increased production, 9% increased income, and 4% a general increase in living standards and health. Others (all under 2%) mentioned increased money to spend on their children's education, access to inputs and a decrease in cocoa diseases.

Sustainable practices rewarded by the market
In 2012, the average price received by farmers for a kilogram of cocoa was 725 CFAF. This amount did not differ between the different types of buyers: producer groups, *pisteurs*, independent traders (*commercants*) and other buyers. This may be linked to the 2012 price reform. Most farmers in the focus groups indicated that they are satisfied with the result of the fixed price reform. Most farmers (70%) sold their cocoa to their producer group, 14% sold to pisteurs, and hardly any farmers (2%) sold direct to traders or to other buyers.

484 farmers reported having received a premium for their cocoa. Whilst all certified farmers reported receiving premiums, not all programme farmers had reached the stage of receiving payment and premium for certified beans. Most farmers (69%) reported receiving a premium of 50 CFAF per kg, 27% received a premium of 30, 35 or 40 CFAF. The reason for the differences in premiums is that producer groups pay out different levels of premium to their farmers, as some producer groups deduct an amount agreed with their members to finance producer group operations and community activities, such as schools, wells, roads, health centres, etc. Figure 24 shows the very small differences (2 CFAF) between the premiums received by farmers having one or two certificates. Although the premium is an incentive for farmers to become certified, it is a small part of the total price, representing 7% of the total kilogram price. The premium stated to be one of the most important motivations for farmers to become certified and to sell to producer groups (by 28% of farmers), in particular in the earlier stages of participation in the programme when productivity and quality increases have not yet materialised. Some traders and producer groups also indicated it was a major incentive, using it to focus attention on and celebrate certified farming and their trading relationship, for example during a ceremony to distribute the premium. However, over 90% of respondents in the focus groups perceived that the premium does not sufficiently cover their costs to produce certified beans, particularly costs for labour and the inputs required to obtain a certificate.

Quotations 6 Market rewards

Male farmer, Daloa: *The producer group pays cash, like the pisteurs, and on top it gives a premium, so we prefer to sell to the producer group.*

Male farmer, Fiédifouê: *It is thanks to the premium and inputs from the producer group that everybody wants to be certified.*

Male farmer, San Pedro: *We would like to sell to the producer group because we gain the premium and training – for example on the layout – and the distribution of inputs, of cars for transporting cocoa or sick people in the case of emergencies.*

Stable producer groups providing better and reliable social services

Farmers report feeling between 'neutral' and 'satisfied' with the services delivered by their producer groups, as shown in Figure 25, Figure 26 and Figure 27. There are no observable differences in the satisfaction level between CPQP participants and the control group. Certified farmers are more satisfied with the services provided by their producer group, but the difference is not statistically significant.

Quotations 7 Stability of producer groups, services provided and access to market

Manager producer group: *Yes, the farmers are listed according to their needs and the cooperative provides them with credit and working material, but it is not enough. We also act as intermediary and we stand guarantee when farmers want to access credit to buy phytosanitary products.*

Producer group manager: *They are satisfied ; they don't complain. The training helped to increase the production by 30 to 40%.*

Producer group manager: *Yes, the income has increased as the production increased because of the application of good agricultural practices*

In the focus groups, farmers stated they were generally satisfied with the services provided by their producer group. However, 40% of farmers interviewed in focus groups perceive that inputs (fertilisers and seedlings) are not provided soon enough or in sufficient quantity, and 30% lamented the lack of or insufficient access to credit. According to 25% of farmers, there is insufficient turnover in the management committee of their producer groups. Another concern is the limited support of the producer groups in stimulating children's education and providing health facilities (see Figure 16 and Figure 17).

Half of all farmers mentioned that they experienced benefits of group membership (Figure 17). The most frequently named were better relationships with their fellow farmers (55%), knowledge exchange between members (33%) and the benefits of problem solving during group meetings (20%). Only a small proportion (35 of all farmers interviewed) indicated that there are negative aspects to being a member of a producer group. Half of these farmers mentioned the costs and time involved in being a member of a group and 9% mentioned record keeping. 43% mentioned diverse issues such as rivalry between members and leaders; being unable to meet commitments to provide advance payments, credit and support; and poor management.

Producer groups are the main channel by which farmers participate in a certification programme and though which they become certified. Farmers indicated generally high levels of satisfaction with their producer groups as providers of services and marketers of their beans, as shown in Figure 26, Figure 27 and Figure 30. The vast majority (95%) of all farmers participating in a programme offered

by an exporter were satisfied with the certification programme, 2% were neutral and 3% did not know. Farmers reported being particularly happy with the access to information provided by their producer group, and the fact that the group sells their cocoa, particularly when they receive prompt payments from traders. Farmers were less satisfied with their access to fertilisers, insurance systems, planting material and credit.

94% of certification programme participants indicated that there are advantages to certification, but 61% also said that there are disadvantages. Almost all certified farmers (99%) indicated that certification has advantages, but 64% also mentioned that certification has disadvantages (shown in detail in Figure 33 and Figure 34). Farmers are very satisfied with access to information and the fact that the producer organisation sells their cocoa. Farmers were least satisfied with access to fertilisers, insurance systems, planting material and credit through the producer organisation.

Quotations 8 Producer group services

Male farmer, Duékoué: *We can have money at any moment to face our problems, even in the case of emergencies since we can access credits from the co-op before giving them our cocoa, for instance to pay school fees for my kids or when they are sick.*

Male farmer, Daloa: *We are not satisfied. The products provided are insufficient, there is no credit and even when there is, there are problems. They make many demands on us. They ask us to make written requests, but they never reply.*

Female farmer, Guitry: *No, we are not satisfied. The co-op has not done anything to improve health and education.*

Labour rights

Generally labour rights are not well respected by any of the farmers, although already certified and CPQP participants have slightly better performance than non-certified farmers or farmers in the control group. Whilst the majority of all farmers did not make formal contracts with their labourers, with no major difference between groups (see Figure 35), more certified and programme participants did make contracts, suggesting that lessons learnt from the Code of Conduct are being implemented. However, the general finding is in contrast to the UTZ Code of Conduct, which requires producers to interact with sharecroppers and workers according to local norms.

Overall, there are many challenges to be addressed with regard to labour rights issues; half of the farmers do not make formal contracts, and most of them do not know about labour rights legislation or register their farmers with CNPS (shown in Figure 36). Very few farmers register their labourers with the CNPS, with no difference between the groups. This is despite the certification requirements that state farmers must comply with national legislation and sector agreements. Between 10 and 20% of all farmers know about labour rights legislation (Figure 37). This is in contrast to the UTZ Code of Conduct, which requires the producer group to inform all producers about labour rights. CPQP participants and certified farmers have higher levels of knowledge than the control group and non-certified farmers. The same is true for farmers having access to organisations concerned with labour rights, as between 7 and 22% have ties to these organisation. CPQP participants and certified farmers are more likely to have links than control group farmers and non-certified farmers (Figure 38).

Respect for children's rights

According to certification requirements, children and minors (below 18) are allowed to perform light work only on family farms and only for a limited number of hours, as long as the work does not jeopardise their physical and mental wellbeing or interfere with their schooling, they do not conduct hazardous work in unhealthy situations, at night, or with dangerous substances or equipment, and are always accompanied by an adult relative.

Of the 720 programme farmers, 687 (95%) indicated that they know the minimum age at which children are allowed to do cocoa farming activities, but only 13% could state what the minimum age is. Most (83%) non-programme farmers indicated that they knew the minimum age, but when questioned further only 17% correctly stated the minimum age of 18 (Figure 39).

Farmers knowledge of which activities children are allowed to conduct in relation to cocoa production was relatively low. CPQP participants' level of knowledge of prohibited activities is low (0.35 out of 1), but it is statistically significantly higher than for non-programme participants (0.28). Certified farmers also have a higher level of knowledge of prohibited activities than non-certified farmers. CPQP farmers are assisted by children in activities (see Table 16 and Figure 39) that are seen as hazardous for children, although children spend a limited number of hours on these activities each year. On some activities children at CPQP farms spend more time than children of control group farmers, but also the opposite was also observed. Children spent on average 40–60 hours on cocoa farm activities in 2012. CPQP participants make statistically significantly more use of children (in terms of hours spent) than control group farmers, which may be because programme participants produce on average more cocoa than control group farmers. The median number of hours spent by children on the farm is zero, for all groups, indicating that at least half of all farmers were not assisted by their children in cocoa farming activities.

The teachers and school directors interviewed had very little or no knowledge of certification and traders' activities or of initiatives carried out aimed at stimulating children's education. 90% of respondents stated that there were no such initiatives in their school or village. It was difficult for teachers to distinguish between the children of certified and non-certified farmers, and thus to compare attendance rates. Teachers stated that in general dropout rates for boys are higher (5–8% higher) than for girls. School absences were noted as being due to sickness and were not reported to increase during cocoa harvesting seasons. The average distance between schools and farms is 4.5 km. The presence and distance from a household to school were seen as major determining factors of school attendance. This mirrors findings by other studies (Tulane University 2011, Nestle 2012). In the focus groups and observations, big differences were observed between producer groups and communities, with different interventions and activities enacted by traders and producer groups occurring that positively associated with respecting children's rights, such as sensitisation and awareness raising and the construction of schools or provision of school materials, but also a lack of these type of activities (details shown in Figure 40).

Quotations 9 Children's rights

Male farmer, Fiédifouê: *I take care of weeding my field. If it is too much, I call up to my brothers to help me or if I have money I call the youth in the village so that they can help me. Women do not weed. When we do pod breaking, women help us to put cocoa in the tracks, but children do not work, they just collect water for us.*

Farmer's wife: *The children help their mothers to cook for the workers.*

Producer group manager: *We have built a school, and offered a school kit to the most deserving children of our farmers.*

Producer group manager, Dioligbi: *No, we do not do any particular programme to stimulate access to schools. We do only verbal awareness raising.*

Healthy and safe living and working conditions

An analysis of crop protection products used indicated that none of the farmers applied crop protection products prohibited by the UTZ Code of Conduct or the Rainforest Alliance. Regarding the use of personal protective equipment (PPE), knowledge and implementation levels were higher for CPQP participants and certified farmers than for their counterparts, even though they still scored relatively low (0.33 out of 1 and 0.27 out of 1 respectively, as shown in Figure 41 and Figure 42). The reason

for this may be that farmers who are certified and part of CPQP are already more knowledgeable and already implement PPE practices in a better way than control group participants. Interestingly, there is a statistically significant negative relationship between knowledge of PPE and the use of PPE. It is unclear why this is the case.

Farmers indicated that a number of good agricultural practices had contributed to better working conditions; however, access to improved health care was not noted, as shown in Figure 43. About 30% of farmers had had an accident themselves or had seen someone else have an accident during cocoa production activities. One mortality was noted, during pruning. Statistically significantly more CPQP participants and certified farmers reported 'no accidents' compared to the control and uncertified groups (Figure 44).

Box 5 Summary: Economic impact

CPQP participants had significantly higher levels of productivity than control group farmers in 2012, with a mean of 467 kg/ha compared to 315 kg/ha for control group farmers, and certified farmers also generally had higher productivity than non-certified farmers. Productivity increases were mainly attributed by the farmers to GAP training. Up to 90% of farmers use credit, but indicated that credit was difficult to obtain, CPQP participants indicated a better access, mainly due to their producer group and participation in a certification programme. Up to 60% of farmers were able to purchase inputs, with certified farmers indicating they had better access. Cocoa quality was generally high, with programme participants having lower rates of rejection due to poor quality. CPQP participants and certified farmers have higher total production costs than control group and non-certified farmers, but their production costs per kilogram are significantly lower. These lower production costs per kilogram do not, however, translate into higher efficiency ratios, which do not differ between programme participants and the control group. On average, a farmer's net household income is 6.27 US$ per day. Whilst no statistically significant differences were found in the income of farmers participating in the CPQP compared to the control group, farmers with multiple certification earn a statistically significant higher income than non-certified farmers, suggesting that certification may positively impact incomes. Cocoa is however not seen as a viable option for the next generation of farmers. Farmers find it difficult to change from cocoa as their main means of earning income, resulting in half of the farmers feeling 'stuck in cocoa farming' with no or few other opportunities.

5.5 Economic impact

Credit

All farmers indicated that accessing credit was difficult. However, more CPQP participants indicated a positive change compared to the control group (Figure 45). With statistical significance, more programme participants indicate that the improvement was due to joining a producer group or because of participation in a certification programme compared to the control group. Although accessing credit was difficult, between 70 and 90% of the farmers had borrowed money in the last two years (Figure 46). Programme participants and certified farmers had had statistically significantly less credit than the control group. When they were asked what their priorities would be if they had access to additional financing, 90% replied that they would buy additional fertilisers and new varieties to rejuvenate their plots. This suggests that those participating in the programme are better able to manage their incomes, but whether this is linked to previous activities they have engaged in is not discernible. All farmers appear to have difficulties balancing income and expenditure over the year. Between 70 and 90% of the farmers had borrowed money in the last two years (Figure 46). Programme participants statistically significantly less often borrowed money than the control group.

Productivity

Productivity is defined as yield per hectare, based on farmers reports of their yields and their farm size. Programme participants had statistically significantly higher levels of productivity than control group farmers in 2012, with a mean of 453 kg/ha compared to 330 kg/ha for control group farmers (Figure 47). Certified farmers have a statistically significantly higher productivity (439 kg/ha) than non-certified farmers (311 kg/ha), as do farmers with multiple certifications (530 kg/ha) (Figure 48). These figures are comparable to some benchmark figures (see Box 6) but lower than the productivity

of other certified farmers. During focus groups, around 60% of farmers attributed productivity improvements to a certification programme, especially GAPs. It should be noted that productivity data is not accurate,[19] given that 73% of farmers under- or over-estimated their farm size (see Annex 9).

The regression analyses showed that multiple factors influence productivity levels. The age of the farmer and the farm size are negatively correlated with productivity: younger farmers generally have higher productivity levels than older farmers, and older farms generally have higher productivity levels than younger farms. Farmers who are RA or UTZ Certified, who are a member of a producer organisation or who created their cocoa farm generally have higher productivity levels than farmers who are not. Heirs to cocoa farms have lower productivity. The zone in which the farmer is situated also matters: farmers in the excellent zone have higher productivity levels than farmers in the other zones, as could be logically expected. A study of Rainforest Alliance certification confirms the difficulties of establishing relationships between certification and productivity, and was unable to demonstrate the impact of RA certification on productivity increases (N'Dao 2012).

Benchmark data on farm size differ widely, from an average of 3.0 ha (Hatløy et al. 2012), to 3.7 ha (KPMG 2012b) to 12.5 ha in 1985 (Benjamin and Deaton 1993). Productivity benchmarks - shown in Annex 10 - also vary widely. As farm size is the basis for calculating productivity per hectare, it is critical to know whether the benchmark data are based on estimated or measured farm size. However studies either do not state this or rely on farmers' estimations (KPMG (2012b). This is important as 30% of all farmers interviewed indicated that their fields had been measured, most often by the Ministry of Agriculture in relation to cadastral planning. Traders and producer group managers also confirmed that most farmers do not know their farm size. GPS measurements indicated that 26% of farmers had miscalculated their farm size, with on average a 7% over-estimation of field size. Also a very low proportion (2% of all farmers, i.e. 17 UTZ programme participants and 2 control group farmers) indicated they knew the number of cocoa and shade trees on their farms. This compounds difficulties in calculating productivity per tree and per hectare. It also raises questions about the comparability of these results to other studies. Comparing these productivity figures to other cocoa producing countries, the rates of 300 to 500 kg/per ha are low (Ruf 2007; Oxfam International 2009; KPMG 2012b).

Between 50 and 60% of the farmers indicated that they were able to purchase inputs when needed (Figure 49). A small number of farmers (24) receive 'free' inputs via spraying teams. Interviews with producer groups indicated this this service is generally paid for by the premium. Certified farmers indicated more often that they have access to inputs than non-certified farmers (Figure 51). Programme participants and certified farmers indicated that access to inputs through markets and cocoa buyers had improved more often than the control group and non-certified farmers (Figure 50).

Box 6 Cocoa productivity benchmark figures

620 kg/ha certified (N'Dao 2012)
576 kg/ha RA certified (RA 2013)
570 kg/ha non-certified (N'Dao 2012)
565 kg/ha (KPMG 2012)
450 kg/ha (HatlØy 2012)
352 kg/ha (Gockowski & Sonwa 2007)

[19] Both for this study given the tendency to over-estimate farm sizes and for other studies, as the extent to which productivity was calculated based on measured or perceived farm sizes is not specified in the studies used as benchmarks.

Quotations 10 Productivity

Male Farmer, Dioligbi: *I have half a hectare. At the small harvest I used to make only half a bag, while now I have almost two bags. I am also happy about the new techniques I have learned.*

Male farmer, Nizahon: *Thanks to the training, productivity has increased.*

Male farmer, Duékoué: *Production has increased from 1 to 3 bags per tree, or 1500 kilos per hectare.*

Producer group manager: *Productivity has increased from 350 to 700 kilos per hectare, mainly for those farmers who follow the recommendations of our trainers.*

Producer group manager: *The costs of the inputs has increased, but we could take credits which we can pay back over a period of 6 months.*

Improved farm efficiency

Farm efficiency measures the economic inputs compared to the output ratio and is calculated on the basis of gross income of main farm divided by total production costs main farm. The efficiency ratio indicates that investing one euro in cocoa production generates 12.2 euros. No statistically significant differences were found in efficiency ratios between CPQP and non-programme farmers or certified and non-certified farmers (Figure 51 and Figure 52). These figures show that the median values are lower than the average, indicating that that average efficiency ratios are influenced by a small number of farmers who have a very high efficiency level. The average therefore hides large differences between farmers in the programme. Certified farmers have slightly lower (but not statistically significant) efficiency ratios (i.e. indicating they are less efficient) than those not yet certified. This finding may be explained by certified farmers having higher production costs. No relationship was found between larger farm sizes and higher efficiency ratios, nor did RA certified farmers have higher efficiency ratios than other farmers. Surprisingly, farmers participating in field apprenticeship training have lower efficiency ratios on average than farmers who did not participate in such training. Explanations for efficiency rates may be due to a time delay, as changes in farming take time and this study is the first measurement. It may also be explained by certified farmers having higher production costs (see the section on profitability and viability).

Quality meets market demand

Cocoa quality was generally seen by farmers, co-ops and traders as very high, with only 2.1% of all farmers indicating that producer groups had rejected cocoa due to non-compliance with quality standards. Cocoa was rejected statistically significantly less from CPQP participants and certified farmers than from control group and non-certified farmers, which could be an effect of previous (certification) programme activities.

Three traders reported that bean quality had improved following certification. All traders reported that quality requirements (moisture content with maximum allowable mould level at 4% and maximum allowable moisture level at 8% at point of export) had been met. In 2011/12, maximum levels were 8 and 12%, respectively. Traders indicated they were surprised that this was met so easily, but that external influences (such as the favourable weather conditions in 2012/13) can have a strong influence and the market reform could have affected bean quality and size improvements. Farmers' and traders' anecdotal evidence for the mid-2013 harvest indicated that bean size was smaller. It is expected that the full impact of the 2012 cocoa market reform will only be fully apparent in future assessments. Studies (Ruf et al. 2013) indicate that after the reform of September 2012, farmers' immediate response was to sort and dry beans, led by the combination of a fixed price and state controls and as exporters no longer have the option of paying for higher cocoa quality and must 'take or reject'.

Quotations 11 Quality meets market demand

Male farmer, Dioligbi: *Since I started applying good agricultural practices – weeding and pruning – I have higher quality, I look better at my farm, and I know what is good and what is bad, and this gives me greater productivity. We adopt ourselves the best therapy for our fields.*

Manager producer group: *Quality has improved after starting of certification.*

Manager producer group, Dioligbi: *Quality has improved since the starting of certification. This year it has also improved thanks to the reform. All cocoa is clean this year and last year as well.*

5.6 Influence of certification on members' loyalty to their group and willingness to reinvest in cocoa farming

Prices in the study period hardly differed between the different buyers. Most farmers (70%) sold their cocoa to their producer group rather than to traitants or independent buyers (Figure 74). Their main reason for doing so is to obtain a certification premium (92%) (see Figure 75). Other advantages of being part of a producer group include higher fixed prices and prompt payment. Loyalty is influenced both by financial gains (28% of farmers sold to their producer group because of the premium) and by social capital, with 17% stating that the group atmosphere or cooperative spirit is important, and by the different services and support provided to farmers by their group.

Increased profitability and long-term viability of farmers and groups
Profitability was calculated based on reported total cocoa production costs[20] and costs per kilogram of cocoa. The total production cost influences net income; however, the variable of production cost per kilogram or hectare is more meaningful to compare farmers.

Quotations 12 Impacts on profitability

Male farmer DALOA: *There is an improvement in production level and an increase in social cohesion between the farmers. And there is the premium, which is the most interesting.*

Male farmer, Dioligbi: *The season was over and my children were surprised as there was still money. I explained to them that this is due to the certification.*

Male farmer Dioligbi: *I was paid at the beginning of January and I bought phytosanitary products. I also gave money to my children.*

Male farmer, San Pedro: *My profits increased and I paid the school fees for my children. When I experience difficult times, I use my extra income to buy fertilisers.*

CPQP participants and certified farmers have higher total production costs than control group and non-certified farmers (Figure 54 and Figure 55). The reasons underlying this were confirmed by farmers' qualitative responses in focus groups and change stories. They indicated that certification 'costs' them more, in terms of both their own and their hired labour. In general, farmers do not calculate their production costs or labour costs or keep track of the cost per kilogram of cocoa. Farmers tend not to calculate their own labour as a cost or the time spent attending training and producer group meetings.

[20] See Annex 8 for how costs were calculated.

However, using the measure of production costs per kilogram, which allows a better comparison, CPQP participants and certified farmers have statistically significantly lower production costs per kilogram than uncertified farmers. Whether this is a result of a certification programme or due to the selection of respondents will only be clear in subsequent evaluation. These lower production costs per kilogram do not, however, translate into higher efficiency ratios, as the efficiency ratios of certified farmers do not differ compared to non-certified farmers.

Net income from cocoa production is also a measure of viability and profitability. About 50% of farmers interviewed in focus groups say that income has increased since the start of certification. Cocoa farming remains their most important source of revenue. As shown in Figure 58, farmers earned a net income of on average about 1,500,000 CFAF in 2012 from their main cocoa farm (equivalent to 4,110 CFAF/6.27 US$ per day). CPQP participants do not earn a statistically significant higher net income than their counterparts, but farmers with multiple certifications earn a statistically significant higher income than non-certified farmers (Figure 59). A positive relationship was found between net income levels and farm size, the implementation of GAPs, productivity levels and the fact that a farmer is an heir to the cocoa farm. Older farmers and participants in field apprenticeship training generally have lower net incomes than younger farmers and farmers who did not participate in such training.

Diversification

Farmers tend to be dependent upon on cocoa for income generation: 79% have cocoa as their sole income source. The most important crops other than cocoa from which farmers earn their income are coffee and rubber, although not more than 21% of the farmers earn income from these crops (Figure 60). Control group farmers more often earn income from these crops and livestock rearing than CPQP participants. CPQP participants earn income more often from food products or kola nut production.

Even though relatively few farmers earn income from sources other than cocoa, the gross income earned from those activities can be relatively high, especially for rubber, coffee and palm oil (see Figure 61). For these crops, the mean gross income earned is much higher than the median, indicating that a few farmers earn a relatively high amount from such crops, although most farmers earn much less. As we do not know the production costs for the activities, we cannot make an estimate how much income from other sources contribute to net household income.

UTZ Certified farmers earn a statistically significantly higher gross household income (2,636,739 CFAF) than non-certified farmers (1,716,777 CFAF) and farmers who have multiple certifications (2,157 654 CFAF) (Figure 62). Farmers and producer group managers provided said that multiple certification incurs additional costs. Farmers in the CPQP (2,354,984 CFAF) do not have a statistically significantly higher gross total household incomes than the control group (2,174,637 CFAF) (Figure 63). Net household income was not calculated, as the income and costs from other activities were not known. Over 80% of farmers spent their income from cocoa production on medicines, school fees and food (Figure 64), and 64% reinvested in cocoa production. They spent the least of their cocoa revenues on hiring labour for activities other than cocoa production. There were few differences in spending patterns between the groups, although 10% more of the control group spent income on food than CPQP participants and 12% more CPQP participants spent revenues on hiring labourers for cocoa production. Over half of the farmers shared their revenue with family members (Figure 65). Programme participants shared benefits with family members and labourers significantly more often than control group farmers did.

The viability of cocoa farming in the future was measured by asking farmers about their perceptions. About two thirds stated that they do not want their children to be cocoa farmers in the future (Figure 66) and 71% of the 121 focus group respondents also did not want their children to become cocoa farmers. In focus groups, children stated that they would prefer to become teachers rather than cocoa farmers. Farmers' expectations of continuing in cocoa farming in the coming 5 to 10 years were very different: 70–75% expected to continue cocoa farming and 25–30% did not expect to (Figure 67).

The majority of farmers in the focus groups generally do not perceive cocoa as a viable business in the long run. Some farmers explained this by saying 'it is cocoa or nothing'. Such findings are attributed to the lack of other sources of cash income for most farmers, few other opportunities and generally the old age of farmers, whilst farmers hope that different opportunities will exist for their children. Around half of the farmers talked about diversifying into crops that provide more regular income and were seen as more profitable and less work, such as rubber. Some farmers said that rubber provides more opportunities; but most do not want their children to continue the 'struggle of cocoa farming'. Farmers noted that they had asked their producer groups to help diversify their sources of revenue. Farmers participating in the programme for longer had a more positive opinion about continuing in cocoa farming, just as farmers who have participated in UTZ certification the longest are more positive than later entrants, but this trend is not statistically significant.

Quotations 13 Long-term viability of cocoa farming

Male farmer, San Pedro: *Yes, I will continue investing in cocoa if I get extra finance to extend the hectares of cocoa and to buy fertiliser.*

Male farmer, San-Pedro: *With the new variety CNRA, the yield is improving.*

Male farmer, Bohoussoukro: *I can't expand my cocoa farm because there is no room, but even so, I don't want to because it's too tiring, I think I'll go into rubber.*

Male farmer, Daloa: *I won't continue with cocoa because we don't earn at the moment ; when I find a bit of land I will produce rubber.*

Male farmer, Gligbéadji; *I produce both rubber and cocoa because of the soil status ; it is good to diversify the crops in order to increase my income.*

Quotations 14 Long-term viability of farmers and groups

Female farmer, Dekoue: No, I don't want my children to be cocoa farmers, I want them to become civil servants, because they've been to school.

Male farmer, Guiglo: I'd like my son to be a cocoa farmer, I don't want him to be a slouch. I want him to take care of me when I'm old. He's already started planting some rubber.

Female farmer, Bohoussoukro: I'm not going to accept that he becomes a cocoa grower because there are no more fields available. I'd prefer him to learn another type of job, like tailoring, carpentry, hairdressing.

5.7 Ecological impact

Box 7 Summary: Ecological impact

A small proportion of farmers use crop protection products (17% used herbicides, 55% pesticides, 10% fungicides) and those used all comply with certification and Ivorian regulations, indicating the maintenance of soil and water quality. Less than 20% of farmers use compost from cocoa production waste or other sources, suggesting a low but positive impact on soil quality. The correct use of crop protection products was stated by farmers as one of the main environmental impacts that GAP had positively impacted for the on- and near-farm environment. Whilst programme participants and certified farmers have significantly more knowledge about water and soil conservation measures and the protection or restoration of natural habitats than their counterparts, their knowledge and implementation scores were low. Farmers also scored low on their knowledge and implementation of waste management and reduction practices, with very few differences between programme participants and the control group. Although up to 58% of farms had been cleared from primary forest, these were all before the 2008 as required by, for instance, the UTZ Code of Conduct. More control group farms had been cleared from forests. These results suggest that practices improving the environment – particularly soil and water quality and conservation – appear to have been implemented to a limited extent and may have had a limited impact to date. Field based monitoring is required to verify this.

Maintained and improved soil and water quality

To ascertain soil quality, farmers were asked about the GAPs that impact soil quality (such as how they implement clearing, pruning, mulching, composting, etc.) and related to water quality (clearing vegetation and chemical and waste handling near water courses) the type and quantity of agro chemicals used and their perceptions of soil quality. Farmers' use of compost is promoted by the UTZ Code of Conduct to improve soil fertility and was used as a positive indicator of improved soil quality.

Scrutiny of the crop protection products that farmers use (see Annex 11) revealed that they were not using any products on the UTZ list of prohibited products (UTZ Certified 2012a) or any of the products banned by the government Government of Cote d'Ivoire 2008). The proportion of farmers using different crop protection products is low: 17% used herbicides, 55% pesticides, 10% fungicides and 23% fertiliser and compost. Less than 20% of farmers use waste from cocoa production activities as compost. 12% more certified farmers than non-certified farmers use such waste as compost (Figure 81).

Quotations 15 Soil and water protection

Male farmer, Diegonefla: *Water and the soil is better protected. The waste is better managed. We have been reducing pesticide use because of improved management of our farms and training with advice obtained from the extension farmers.*

Producer group manager: *We have been advising the farmers to decrease pesticide use or even not use it anymore. In general, the agents of ANADER tell us that if we clean our fields three times, we won't have to use pesticides anymore.*

Most farmers stated that the practices they perceive as protecting the environment were waste management and better spraying and pruning (Figure 68). CPQP programme participants and UTZ Certified farmers have statistically significantly more knowledge of water conservation measures than their counterparts in the control group (Figure 69). No positive relationship was found between programme participation and farmers' knowledge of soil conservation (Figure 70). A statistically significant negative correlation was found between knowledge and implementation of water conservation practices; why this is the case, is not clear. No differences were found between CPQP and control group participants about knowledge levels and their implementation of soil conservation practices.

Protection or restoration of natural habitats

To ascertain the level of protection or restoration of natural habitats (biodiversity conservation), one of the subjects of the UTZ Code of Conduct, farmers were asked about their preferences for shade trees before and after certification, about the status of their farm prior to growing cocoa and land clearance for cocoa, the number of shade trees on their cocoa farms and the planting of shade trees. CPQP participants implement biodiversity conservation practices statistically significantly better than the control group, although their average score is low, at 0.17 (out of 1) (Figure 71).

Effective waste management and waste reduction

None of the farmers interviewed scored higher than 0.27 out of 1 for the implementation of waste management practices, and the average implementation level is very low (0.12) (Figure 72). No differences were found in the implementation levels between the groups. Producer group managers indicated that farmers face difficulties implementing the GAPs concerning waste management.

Protection or restoration of natural habitats on or near farms

Figure 73 shows that 40–58% of the cocoa farms were previously primary forest, and 25–33% were fallow. As most farms were on average created 21 years ago, the majority of the deforestation took place decades ago. The most recent farms were created before 2011 and did not originate from primary forest. Farmers in the control group cited more often that they had converted their fields from primary forest than CPQP participants. A study of Rainforest Alliance certification confirms the difficulties of establishing relationships between certification and ecological protection or improvement, and was unable to prove any impact of the certification on environmental protection (N'Dao 2012).

6 Added value of certification for cocoa farmers

6.1 Introduction

As standards are one of the four main tools used in the CPQP, this chapter responds to the third research question, presenting data on the added value for farmers of going through the certification process and being certified. It assesses farmers' and stakeholders' perceptions of the impacts of certification and training on their livelihoods in terms of improved wellbeing, professionalism, trust and communication between farmers and producer groups, how certification influences the loyalty of members towards a group and farmers' willingness to invest in cocoa farming. It also looks at how training and certification interventions influence and/or strengthen each other. It assesses farmers' and stakeholders' (groups, traders, traitants, exporters, trainers) perceptions of the process and impacts of certification and training on their livelihoods benefits in terms of improved wellbeing, professionalism, trust and communication between farmers and producer groups.

Box 8 Summary: The added value of certification for cocoa farmers

The certification premium – the market reward for sustainable, responsible production – is one of the most important motivations for farmers to become certified. The premium also gives a financial stimulus to farmers particularly in the earlier stages of participation in the programme when the expected productivity and quality increases have not yet become apparent. Farmers and farmer groups expressed concerns that, if payments of the premium were to be discontinued, one of the main added values of maintaining the certified status for them would disappear.

Farmers indicate that implementing the GAP taught by the programme leads to higher productivity and therefore a higher income. Furthermore, the added value of the programme over a programme focused only on trainings, is that farmers can access certification premiums and that producer groups provide services that farmers are satisfied with.

Certification influences trading practices to produce a range of positive outcomes. UTZ Certified farmers, as members of a producer group, have access to traders and tend to sell only to the traders who have provided them with support. For farmers, this adds value by responding to their major needs. For traders, this loyalty provides a secure source of certified, good quality bean supplies. These relationships help secure market access for farmers and their groups and increase access to the support services that aid production. They also allow access to other social and community activities, which are prioritised lower but are still seen as important by farmers.

Certification has supported and massively promoted collective action in the form of producer groups such as cooperatives. Farmers noted numerous benefits such as marketing their beans at a good price, access to information and training, providing a forum for exchange and building social capital. It has contributed to a perception by some farmers that cocoa is a viable cash crop. Certification has aided access to seedlings, crop protection products and credit. Activities associated with certification, often provided by traders, have also contributed to professionalize producer groups, by providing training, internal control systems, financial support and transport.

Certification has also had unintended consequences. It has added to farmers difficulties in managing large, seasonal cash flows. The payment and auditing process is perceived as vulnerable to corruption. The premium setting process is not transparent and appears unlinked to actual costs at farmer, producer group or trader level. Multiple certification is complex and has been difficult for some traders and producer groups to manage. Rapid up-scaling and out-scaling of certification related activities especially training, has related in perceptions of a variable quality lack of minimum standards, with possibly influences farmer's knowledge and practices.

6.2 Added value of training and certification

The added value of UTZ certification was examined by asking farmers about their perceptions of how certification influences trading and cooperative relations, and their level of satisfaction with their cooperatives, the services provided, and professionalism and trading patterns.

Certification influences the trading practices of farmers and producer groups
As the majority of producer groups are affiliated with traders, perceptions of the added value of certification in terms of the trading relationship is important. Interventions made as part of the certification programme appear to be a factor in the choice of to whom a producer group sells their members' beans, in combination with the price offered by traders. About 60% of farmers know to which trader their producer group sells.

Figure 74 shows that of those who know, mentioned that their producer group sells most often to Cargill. As 62% of producer groups in the sample are affiliated with the Cargill sustainability programme and Cargill is one of the largest traders in Côte d'Ivoire (Oxfam International 2009), this figure is not surprising. Four other exporters are mentioned by about 5% of the farmers. As 40% of the farmers do not know who their producer group sells to, it appears that producer organisations do not share information on who they sell cocoa to and why they select a specific buyer.

More than half of the farmers indicated that their producer organisation sells to a certain trader for specific reason (Figure 75). Most mention that this is due to traders offering training, the price paid or because inputs are provided. Qualitative responses from farmers mirror this, with loyalty to a trader (19%), price paid (10%), premiums (10%), provision of inputs (7%) and training (7%) among the most frequent responses.

Certification influences the formation and professionalisation of producer groups
The majority (75%) of producer groups have been formed as part of the programme activities since 2008. The formation and support of producer groups has been one of the major activities accompanying certification by the traders. Farmers were satisfied with the types and level of services provided by their group. They did, however, point to the need for their groups to be more transparent and accountable, particularly providing more information on prices and benefits, on how premiums are used by the group and the need to train managers.

Producer group capacity building has been one of the main activities conducted by traders in conjunction with certification programmes, with 80% of groups sampled having received support to professionalise, mainly training but also financial support to become legalised, and in terms of transport, equipment and traders paying the salaries of support staff (Table 5, Table 6 and Table 9).

The producer groups linked to traders in the CPQP appear to function relatively well, as 59–74% of farmers feel represented by their officials, experience that complaints lead to action and noted that officials are replaced when they do not function properly (Figure 30). Even though CPQP participants are relatively satisfied with the functioning of their producer group, about two thirds made suggestions for improvements. Similar observations were made in the focus groups and other stakeholder interviews. A third mentioned the need to improve transparency on information on prices and benefits; 20% indicated the need for information or more information on how the proportion of the premium retained by the group is used, and said that accountability should be improved and managers should be trained (see Figure 32).

Producer group managers indicated that training, the premium, better productivity and quality, access to lower cost inputs and credit were the main advantages of certification (Figure 34). Farmers reported advantages in terms of accessing finance, farm inputs, and monitoring and follow-up visits (Figure 77). Producer group managers also indicated that they are generally satisfied with certification but request that the level of the premium be increased. Other needs stated were:

1. More vehicles are required to transport beans.
2. Access to inputs has increased with certification but is still insufficient.
3. Services by producer groups: transport in the case of sickness, loans for healthcare, support in building schools.
4. Incentives for farmers to join co-ops: premium, prompt payment.
5. Incentives for producer groups to be certified: financial gains/training.
6. For all producer groups, revenue has increased thanks to the application ofGAPs; and as farmers have access to lower cost of inputs and credit.
7. Inspection is important to monitor the adoption of GAPs.
8. Successful farmers are those who diversify their sources of revenue.

Quotations 16 Sustainable practices rewarded by the market

Co-op manager: *Yes the co-op has a good image. The fields of our farmers are clean, the yields are high and the farmers are well trained. But it is difficult to transport cocoa from the fields to the to the cooperative buying centre because we have too few vehicles.*

Co-op manager: *The advantages are: higher quality, increase in volume, self-financing of the producer group, and improvement in living conditions. The programme gives me the opportunity to save money and time.*

Knowledge and implementation of GAPs increased

Sections 5.2 and 5.3 illustrate that in general, knowledge and the implementation of GAPs appear to contribute to positive impacts on crops, incomes, the environment and lives. However, not all knowledge acquired appears to have been implemented and in some areas, knowledge levels are either low or show little difference to those of farmers prior to certification or to those in the control group.

Box 9 Farmers' and stakeholders' perceptions of certification and training

The vast majority of farmers indicated their satisfaction with the programmes offered by traders and with certification. They did, however, state that there is room for improvement in making specific GAPs easier to implement and that they would value higher premiums, to compensate for what they see as additional work.

6.3 Farmers' and stakeholders' perceptions of the process and impacts of certification and training on their livelihoods

The majority (95%) of farmers reported being satisfied with the trader programme they participated in, 2% were neutral and 3% did not know. Most farmers were satisfied with the training offered (especially on GAPs) and the resulting quality and productivity increases; the opportunity to obtain a certification premium; because they could access inputs; and due to the creation of better and safer working conditions.

Almost all (97%) of the 665 farmers participating in the UTZ Certified programme indicated they were satisfied with the training on UTZ certification, whilst none were unsatisfied, 3% were neutral or did not know (see Figure 31). The majority (94%) of UTZ programme participants indicated that there are advantages to certification (see Figure 76). These included better knowledge of GAPs (40%) and the premium (29%). However, 61% also mentioned disadvantages. Most (40%) mentioned the time and

effort needed to implement the GAPs; other disadvantages include difficulties accessing (correct) inputs and implementing certain GAPs (such as composting, black pod removal, working without support from children), and the low premium.

6.4 Unanticipated impacts of certification and training

Farmers and stakeholders believe that certification and the related activities have contributed to a number of unanticipated effects. The following were mentioned by farmers and stakeholders in the focus groups and verification meeting:

1. A massive increase in the membership of producer groups, resulting in a revitalisation of the cooperative spirit and a focus on improving their institutions' functioning and services.
2. Perceived increase in farmer livelihoods in general.
3. Accompanying projects on rehabilitating farms have occurred with perceived long-term and far-reaching effects.
4. Increase in farmers' perception that cocoa farming is viable.
5. Introduction of GAPs.
6. Contribute towards reforms of the sector and the Coffee Cocoa Council.
7. Increase in phytosanitary controls and training.
8. Higher volume of certified product produced sooner than expected.
9. Certification has created employment with a whole 'industry' of supporting services and organisations, e.g. audits, service providers, NGOs, trainers, consultants and lead farmers.
10. Cocoa farming has increased in value and prestige and has become 'valued' again.

Negative, unanticipated impacts of the certification were also reported by farmers and stakeholders. These include:

1. Lack of understanding at producer group level about the division of premiums and costs of certification.
2. Market finds it difficult to absorb surplus certified beans that are not required/purchased by traders.
3. Premium payments lead to corruption, especially because they are large amounts,
4. Decrease in the quality of GAP training for farmers since 2008.
5. The creation of fictive cooperatives.
6. Insufficient technical expertise in consultants, cabinets and in government to up-scale the services provided as part of certification at same level.
7. Transparent system of setting premiums by traders.
8. Corruption in the auditing process (i.e. payments to obtain a positive audit result).
9. Difficulties for farmers to manage large sums of cash premiums paid out in one go.
10. Difficulties for both traders and producer groups in managing multiple systems of certification with similar but slightly different demands.
11. Wide range of different certification systems and interventions implemented by traders and cooperative but uncertainty about what works.

7 Conclusions

This section summarises the main conclusions from the preceding sections in order to answer the three main research questions.

1. Is the CPQP cocoa programme in Côte d'Ivoire inclusive? What are the characteristics of certified farmers?
2. How do certification, voluntary standards and the related activities of implementing partners influence knowledge and related behaviour/practices of cocoa farmers in Côte d'Ivoire?
3. What is the added value for farmers of going through certification processes and being certified?

The findings in relation to the first objective are detailed in Chapters 4–6. This chapter focuses on the second and third objectives. As explained in Chapter 1, the second objective was divided into three main research questions about the inclusiveness of the UTZ Certified cocoa programme in Côte d'Ivoire, about how certification and related activities have affected farmers' knowledge and implementation of good agricultural practices, social and environmental issues in line with the UTZ Certified Code of Conduct and concerning the added value of certification. These questions are reiterated and responded to below.

7.1 Inclusiveness of the CPQP and characteristics of certified farmers

The CPQP appears inclusive in reaching a large number of farmers through the activities of its partners, particularly certification, and through being involved in activities such as producer group development support, training and assistance to become certified. However, women are under-represented both as owners and particularly as workers. The proportion of female owners of cocoa farms included in CIP programmes is a specific desired outcome of the CPQP. A much smaller proportion of farmers have benefited from access to associated activities that improve crops – such as access to crop protection products, fertilisers and seedlings – and that improve lives, such as community and social programmes.

Women and youths have generally not been included in the partners' activities or certification. This is partly due to the nature of farm ownership in Côte d'Ivoire and farming customs. Generally, Ivorian and Burkinabe women work on cocoa farms but do not own them. As activities have targeted registered producer group members who own or sharecrop farms, female farmers and labourers have not been explicitly included in certification related activities, although this appears to be changing with a more recent focus on gender in the last year and several sector and country wide initiatives. Around a third have been included indirectly as their male counterparts have passed on training, but the extent to which the training is passed on is not known. In focus group discussions, women indicated their lack of awareness of and involvement in support activities and certification. Women do benefit from cocoa revenues: three quarters of the women in the focus group discussions reported receiving a higher proportion of cocoa income from their husbands when cocoa income increases.

7.2 The influence of certification on knowledge and practices

Certification appears to contribute to influencing the knowledge and implementation of good agricultural practices. However, the levels of knowledge and practices of programme participants were found to be relatively low, at around 24–25% of what could be expected of correct knowledge and/or implementation of the standards contained in the UTZ Code of Conduct. Particular areas where

knowledge and practices can be improved are environmental aspects, children's and labour rights, personal protective equipment, waste management and composting. Reasons suggested by stakeholders include the quality and quantity of training and trainers, particularly as certification has been up-scaled, and an insufficient adaptation to farmers' learning styles and preference for extension and field-based learning, rather than classrooms.

Farmers' knowledge levels were predicted in the impact logic to improve with training and increased participation in the UTZ Certification and Rainforest Alliance certification. This baseline indicates that knowledge and practices that could potentially be attributed to the certification programmes have been acquired, as farmers who had been certified for longer had higher knowledge scores. Programme participants and certified farmers have statistically significantly higher knowledge levels than farmers in the control group and non-certified farmers. However, farmers participating for longer in the programme did not have higher knowledge levels than those of later entrants. This may be because farmers have different levels of knowledge prior to joining the programme. However, the levels of knowledge and the practices of programme participants were found to be relatively low, at 25% of what could be expected of correct knowledge of the standards contained in the UTZ Code of Conduct. Surprisingly, there was a negative association between knowledge and participation in farmer field schools and field apprenticeships: programme participants have a lower knowledge level than non-participants. This finding is difficult to explain. Multiple certification was also found to affect knowledge levels. Farmers who were also Rainforest Alliance certified have higher knowledge levels than non-certified farmers. This is attributed to similar types of knowledge acquired and to repetition building farmers' knowledge.

Knowledge levels were also associated with other variables. Positive associations were found between farm size and knowledge levels: the larger the main farm and the size of all farms, the higher the knowledge level. Farmers in the excellent agro-ecological zone have higher knowledge levels than farmers in the good or marginal zones. These two findings may be explained by the fact that farmers have the possibility to apply knowledge and benefit from slight efficiencies in scale and a more favourable environment for growing cocoa. Members of a producer group have higher knowledge scores than farmers who are not members, which could be attributed to producer group membership facilitating exchanges between members or to the fact that knowledgeable farmers are likely to be members of a producer group .

The length of participation in the UTZ Certified programme is positively correlated with the overall implementation of GAPs, record keeping and biodiversity conservation practices. Whether these effects can be attributed to the UTZ certification programme or to other factors will only be apparent in subsequent assessments. UTZ programme participants and UTZ Certified farmers also performed better in implementing GAPs than farmers in the control group and farmers who are not UTZ Certified. However, as with knowledge levels, farmers' levels of implementation of GAPs are quite low, at 24% of what could be expected with full implementation, despite increasing with the length of participation. As the knowledge and implementation levels of farmers were not tested prior to their joining the programme, it is not possible to attribute changes only to certification and related activities.

7.3 The added value for farmers of certification

Certification appears to contribute to farmers' lives, incomes, crops and environment in different measures. This initial assessment indicates that most of the impacts of certification are felt economically and socially. This mirrors findings that Rainforest Alliance certified farmers in Côte d'Ivoire have positive impacts on producer group management, strengthen commercial relationships between cooperatives and parties, and have positive impacts on livelihoods by improving safety and sanitary conditions, cocoa prices, and health and education (N'Dao 2012). Farmers are generally satisfied with their lives and producer groups and the services they provide, as well as the traders they sell to.

Certification may have an impact on incomes. Certified farmers tend to produce more efficiently and have higher net cocoa-based incomes. Farmers indicated that implementing the GAPs, taught by the programme leads to higher productivity and therefore higher incomes. Certified farmers indeed had statistically significantly higher levels of productivity. CPQP and certified farmers have lower production costs, but statistically significantly lower production costs per kilogram than control group and uncertified farmers. These lower production costs per kilogram do not, however, translate into statistically significant[21] higher efficiency ratios. Certification and support activities have not reversed the trend of cocoa being seen as an uninteresting economic activity for farmers in the future. Many farmers are 'stuck in cocoa farming' and cannot easily change their means of earning an income and have no or few other opportunities. However, certification and related activities appear to be offering a ray of hope, focussing attention and revitalising the sector. Practices improving the environment, particularly soil and water quality and conservation, appear to have a limited impact to date.

Furthermore, an added value of the CPQP focussing on different social and economically sustainable outcomes is that farmers can access a wide range of services either through enhanced producer groups, or direct from service providers and traders who contribute to market rewards in the form of certification premiums.

The certification premium – the market reward for sustainable, responsible production – is one of the most important motivations for farmers to become certified. Although the premium is an incentive for farmers to become certified, particularly in the earlier stages of participation in the programme when the expected productivity and quality increases have not yet become apparent, it is small, representing only 7% of the total kilogram price. But the attention given to it, and as most producer groups pay out premiums separately from the main payment for beans, this focuses an inordinate amount of attention on the premium. Farmers and farmer groups expressed concerns that, if payments of the premium were to be discontinued, one of the main added values of maintaining the certified status for them would disappear.

Certification has supported and massively promoted collective action in the form of producer groups such as cooperatives. By organising farmers into producer groups and aiding their professionalisation, activities have been up- and out-scaled to over 44,000 farmers across the country. Activities associated with certification, often provided by traders, have also contributed to professionalising producer groups, by providing training, internal control systems, financial support and transport. UTZ Certified farmers, who are members of a producer group, have access to traders and tend to sell only to the traders who have provided them with support. For farmers, this adds value by responding to the major needs.

For traders, this loyalty provides a secure source of certified, good quality bean supplies. These relationships help secure market access for farmers and their groups, and increase access to support services that aid production. They also allow access to other social and community activities, which are prioritised lower but are still seen as priorities by farmers.

These partnerships appear critical channels that add value to certification for farmers. They may possibly enhance their effectiveness and efficiency, as duplications of effort are avoided. The perceived negative impact of multiple certification schemes for farmers, producer groups and traders is an example of where collaboration and partnerships could help minimise or mitigate negative impacts. The many different activities implemented by traders within the framework of or associated with certification shown in Chapter 3, highlight that certification has an added value not only for farmers but also for traders and for organisations running projects and programmes.

Certification has also had some unintended influences. It has added to farmers' difficulties in managing large, seasonal cash flows. The auditing process is perceived as open to corruption. The premium setting process is not transparent and appears unlinked to actual costs at farmer, producer

[21] See Annex 4

group or trader level. Multiple certification is complex and has been difficult for some traders and producer groups to manage. The rapid up-scaling and out-scaling of certification related activities, especially training, has resulted in perceptions of a variable quality and lack of minimum standards which possibly influences farmers' knowledge practices.

7.4 Was the impact logic correct?

Lessons learnt

The impact logic of the CPQP appears to be correct in assuming that certification and associated activities will lead to better economic outcomes because a higher level of knowledge is related to the improved implementation of good agricultural practices, higher productivity, higher net income and higher satisfaction levels with regard to farmer livelihoods.

Both higher knowledge levels and improved implementation of record keeping are positively related to increases in productivity, net income and livelihoods. There was no relationship found between the implementation of GAPs overall or the implementation of post-harvest practices and bean quality, indicated by the rate of rejection. This may be affected by external factors, such as the institutional reform of the cocoa sector by the Ivorian government in 2012. Overall, higher knowledge levels are positively related to improved implementation of GAPs, confirming the impact logic.

However, this was not the case for specific agricultural practices (waste management, and soil, water and biodiversity protection). To ensure that these outcomes are met, particularly with the later entrants and possible new entrants to the programme who are have slightly different characteristics, adjustments in how the programme is implemented are recommended. The social outcomes are only partially met, as certified farmers report better and safer working conditions. Further actions need to be taken to include female owners in the programme and to achieve certified child labour free cocoa farming. The ecological outcomes appear also to be only partially met: whilst chemical use complies with national recommendations indicators of farm rehabilitation and regeneration – such as access to improved seedlings and acquiring grafting skills – are low.

Both higher knowledge levels and improved implementation of record keeping are positively related to increases in productivity (Figure 7). There is no relationship between the implementation of GAPs (overall) or the implementation of post-harvest practices and bean quality, indicated by the rate of rejection. This may be affected by external factors, such as the recent reform, which included a requirement to meet higher bean quality standards. In the verification meeting, participants indicated that so far this requirement has been, apparently easily, met but that the 2013 mid-season harvest has not produced sufficient quality, due to unfavourable weather conditions.

The CPQP logic also assumes that inputs will result in higher productivity. As a smaller number of farmers have been involved in interventions to access to fertiliser (7%), credit (24%), seedlings (11%) and pesticides (36%), testing that higher productivity has resulted from these interventions will be only possible in a future impact evaluation.

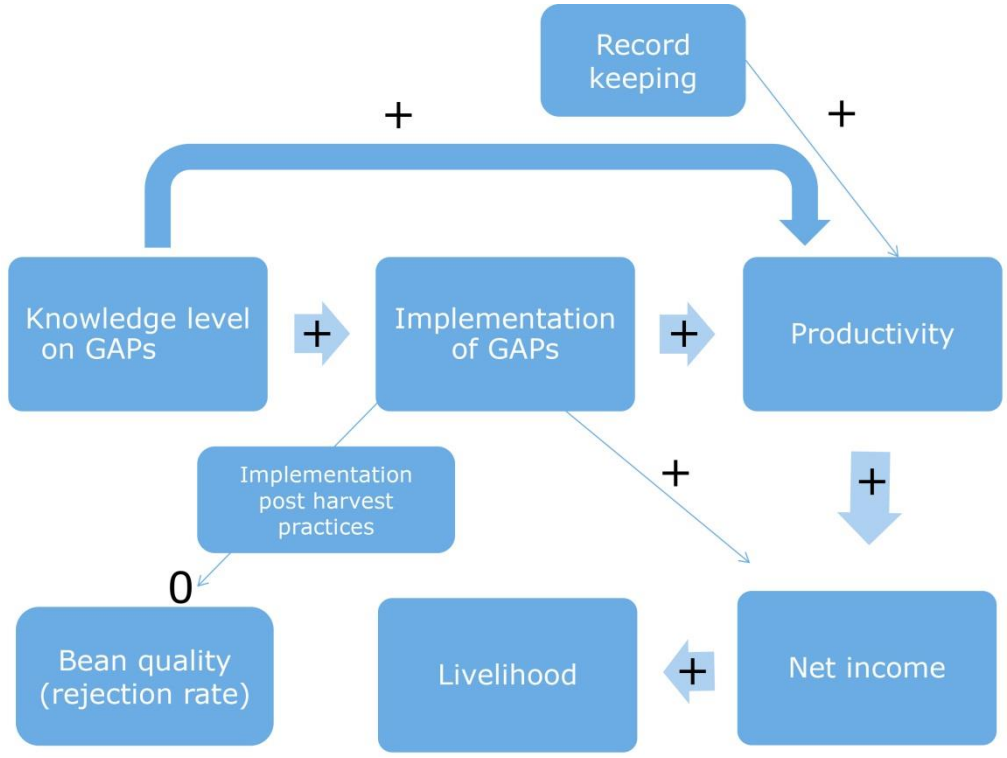

Figure 7 *Correlation between impact logic and outcomes.*

The impact logic (shown in Figure 3) assumes that training and adherence to the code of conduct will lead to better crops and better environment outcomes and knowledge is turned into practice. Figure 8 shows that overall, higher knowledge levels are positively related to improved implementation of GAPs, confirming the impact logic. However, for specific agricultural practices (waste management, soil management, water and biodiversity protection), this is not always the case. The correlations between the specific indicators suggest that there is a general relationship between knowledge of and implementation of GAPs.

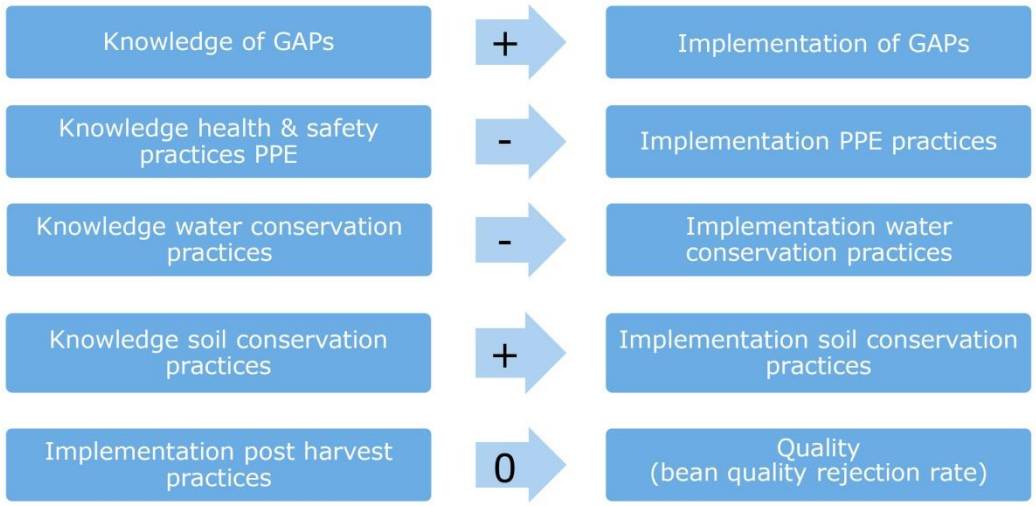

Figure 8 *Correlations between impact logic: knowledge and implementation of GAPs.*
Key: + significant positive correlation between indicators, ***-*** *significant negative correlation between indicators, 0 no significant correlation between indicators.*

Table 11 shows an overview of the impact indicators, with the results and conclustions summarised.

Table 11

Overview of impact indicators.

Conclusion	Results
How inclusive is the CPQP?	
	▪ All farmer groups which have been included in certification activities had received training.
The CPQP and certification has reached a large number of farmers	▪ Only a few farmers benefitted from crop protection products, fertilisers and seedlings, and community and social programmes.
Women and youths are underrepresented but are critical in current and future farming – making it crucial to involve them more	▪ Activities have been targeted to registered producer group members, which are typically male farm owners and share croppers. The vast majority of farmers were old males with old cocoa trees.
	▪ Farm workers, particularly women and youths, had less opportunity to be included in certification and support activities.
	▪ Partners have started focussing more on women in a number of training and empowerment activities on a small scale.
Social	
Certification may contribute to improved levels of knowledge and implementation of best practices.	▪ Although certified farmers had higher knowledge levels, in general, farmer's level of knowledge and implementation practices were relatively low, .
The frequency, quality and quantity of training and the competences of trainers can be improved. Farmers prefer extension and field-based learning over classrooms teaching	▪ programme participants and certified farmers have statistically significantly higher knowledge levels than non-certified farmers.
	▪ Higher knowledge levels are positively related to improved implementation of GAPs.
	▪ Knowledge and practices can be improved on: children's and labour rights, personal protective equipment, waste management and composting, weeding, record keeping, shade trees, soil conservation and field buffer zones, fertiliser and crop protection use, pruning, and disease management.
Respect for labour rights should be improved	▪ Generally labour rights are not well respected by any farmers, although certified and programme participants have better performance than non-certified farmers.
	▪ Whilst the majority of all farmers did not make formal contracts with their labourers, more certified and programme participants did make contracts, suggesting that lessons learnt in the Code of Conduct are being implemented.
	▪ There is limited awareness of workers' rights and less than 22% of farmers had contact with lead farmers on labour rights issues.
Respect for children's rights should be improved	▪ Only 13% of farmers could state the minimum age for children to work on cocoa farming activities.
	▪ Participants' knowledge of prohibited activities is low, but it is statistically significantly higher than for non-programme participants.
	▪ Programme participants and UTZ Certified farmers make statistically significantly more use of children (in terms of hours spent) than their counterparts.
	▪ Lack of teachers and of access to schools is a major bottleneck. This may be one cause of children working on farms.
Generally living and working conditions are safe, but could be improved in some areas	▪ Farmers indicated that a number of GAPs contributed to better working conditions, however access to improved health care is still poor.
	▪ About 30% of farmers have had an accident or seen someone else have an accident during cocoa production activities (UTZ Certified farmers had statistically significantly fewer accidents than non-certified farmers).
Economic	
Livelihoods seem to improve with participation in the programme	▪ Farmers were satisfied with the impact of certification and training on their livelihoods.
	▪ Farmers indicate that implementing the GAPs taught by the programme, led to higher productivity, quality and therefore income.
	▪ In turn, higher incomes led to a larger proportion of the cocoa income given to their spouses and being used to meet basic family needs, and children's education.
	▪ Farmers require more support on access to healthcare, schooling and infrastructure.

Conclusion	Results
Farmers have concerns over the long-term viability of cocoa farming and possible discontinuing the premium for certified cocoa.	▪ Cocoa farming is the only or the main source of cash income for most farmers.
	▪ Although most farmers intend to continue cocoa production over the next five years, they feel that cocoa farming in general is not an attractive source of income over the long term.
Deeper analysis is needed of financial and economic costs and benefits of certification and activities.	▪ Half of farmers feel 'stuck in cocoa farming' with no or few other opportunities. Some are switching to rubber and other crops that require less labour and allow for higher revenue.
Prioritise increasing the overall price and profit earned by farmers	▪ Most farmers interviewed in focus groups perceive that the premium does not sufficiently cover the costs of producing certified beans.
	▪ Farmers and farmer groups expressed concerns that, if payments of the premium were to be discontinued, one of the main added values of maintaining the certified status for them would disappear.
	▪ By revitalising the sector, certification can help make cocoa farming more sustainable.
	▪ Focus on increasing the overall price and profit earned by farmers on certified beans, rather than the premium, to benefit farmers in the short and long term.
Ecological	
Evidence on impacts on soil and water quality and conservation is weak	▪ A low proportion of farmers use crop protection products
	▪ Less than 20% of farmers use compost - from cocoa production waste or other sources, suggesting a low but positive impact on soil quality.
	▪ Programme participants and UTZ Certified farmers have low knowledge and implementation rates of water and soil conservation measures and the protection or restoration of natural habitats. However they perform better than non-certified farmers.
	▪ Certified farmers implement biodiversity conservation practices better than control group farmers.
Farmers indicate the programme leads to increased productivity and income and that the added value of a certification programme is access to premiums and services	▪ UTZ programme participants had higher levels of productivity, higher total production costs, but statistically significantly lower production costs per kilogram than uncertified farmers.
	▪ Farmers participating longest in the programme tend to produce more efficiently and have higher gross and net cocoa-based incomes than later entrants.
	▪ An added value of the programme is that farmers can access certification premiums and that producer groups provide services the farmers are satisfied with.
	▪ UTZ certification enables farmers to be reached by traders and organisations running projects and programmes. These relationships help secure market access for farmers and their groups and increase access to support services that aid production.
The programme contributed to professionalise producer groups	▪ Farmers noted numerous benefits of producer groups such as marketing their beans at a good price, allowing access to information and training, providing a forum for exchange and building social capital.
Producer group provision of some services can be improved	▪ However, 40% of farmers interviewed in focus groups perceive that inputs are not provided soon enough or in sufficient quantity, and 30% lament the lack or insufficient access to credit.
	▪ Farmers indicate their groups need to be more transparent and accountable, particularly providing information on prices and benefits and on how premiums are used by the group and that managers need to be trained.
	▪ Activities associated with certification, often provided by traders, (e.g. management training, models for internal control systems, financial support, equipment and transport) have contributed to professionalise producer groups.
	▪ Farmers think groups can further professionalise by enhancing service delivery with regard to access to fertilisers, credit and seedlings.
	▪ Farmers request more support to improve their families' livelihoods, and to manage and diversify their sources of revenue.
Challenges	
Certification produces unintended effects	▪ Certification has added to farmer's difficulties managing large, seasonal cash flows.
Partnerships are crucial to enhance transparency and efficiency in the certification process	▪ The auditing process is perceived as open to corruption. The premium setting process is seen as not transparent and does not appear to be linked to actual costs at farmer, producer group or trader level.

Conclusion	Results
Attribution of causality of CPQP and certification needs testing and further investigation	▪ Multiple certification is complex for farmers such that rationalisation and simplifications where possible could be cost effective .
	▪ Rapid up-scaling of certification and training may have led to recent training of lesser quality and intensity, resulting in less impact.
	▪ Partnerships with traders and NGOs and other certification agencies could help minimise or mitigate such impacts.
	▪ Prior and multiple interventions and external factors, make attribution to the CPQP at this stage difficult.

Key: **+** significant positive correlation between indicators, **-** significant negative correlation between indicators, **0** no significant correlation between indicators.

8 Lessons learnt

This section summarises the main conclusions from the preceding sections. Preliminary evidence suggests that in the last five years, the CPQP has contributed to improving the livelihoods of cocoa farmers, their communities and their environment. Farmers and their cooperatives generally perceived support activities as effective, relevant and adequate. However, the extent will only be apparent in subsequent assessments. The contribution of the support activities is difficult to separate from interventions prior to the programme and from parallel interventions. This assessment was conducted to meet three objectives:

1. To obtain information about the baseline situation of the CPQP
2. To assess whether the activities/strategies lead to the desired outcomes (effectiveness)
3. To draw lessons learned so as to improve the quality of the programme.

And to answer three main questions:

1. Is the CPQP cocoa programme in Côte d'Ivoire inclusive? What are the characteristics of certified farmers?
2. How do certification, voluntary standards and the related activities of implementing partners influence knowledge and the related behaviour/practices of cocoa farmers in Côte d'Ivoire?
3. What is the added value for farmers of going through certification processes and being certified?

The findings in relation to the first objective have been detailed in Chapters 3–6. This chapter focuses on the second and third objectives. As explained in Chapter 1, the second objective was divided into three main research questions about the inclusiveness of the CPQP in Côte d'Ivoire, the inclusiveness of the CPQP, about how activities have affected farmers' knowledge and implementation of good agricultural practices, social and environmental issues and the added value of certification. These questions are reiterated and answered below. The recommendations are based on the interpretation of the research team from the data gathered. Recommendations provided by the stakeholders are shown in Box 10.

8.1 Is the CPQP in Côte d'Ivoire inclusive?

Lessons learnt

The CPQP has been inclusive in reaching all targeted farmers, but women are under-represented. All the targeted farmers have been involved in activities such as cooperative development support, training and assistance to become certified. A much smaller proportion of farmers have benefited from access to associated activities that improve both crops – such as access to crop protection products, fertilisers and seedlings – and lives, such as community and social programmes.

Recommendations

Include workers and particularly women and youths in certification and GAP focussed activities

Given the aging farmer population, pessimism about the future of cocoa farming, the characteristics of both certified farmers and those who work on their farms, and how tenure is commonly organised in Côte d'Ivoire, a change in inclusion strategy is recommended. A targeted and much broader inclusion of female farmers and workers in certification activities could enable higher levels of implementation of rights, as well as of good agricultural practices and adherence to the UTZ Code of Conduct. The women farmers' groups, nurseries and learning groups, supported by traders such as Cargill and CEMOI and their partners, provide possible role models. They also provide opportunities for exchanges between women's groups about which activities and methods work best specifically targeting women.

8.2 How do certification and the related activities of partners influence knowledge and the related behaviour/practices of cocoa farmers in Côte d'Ivoire?

Lessons learnt

Certification appears to contribute to influencing the knowledge and implementation of good agricultural practices. However, levels of knowledge and practices of programme participants were relatively low compared to what could be expected of correct knowledge of the standards contained in the UTZ Code of Conduct. Knowledge levels of other standards were not measured, as these are not a focus of the CPQP. Particular areas where knowledge and practices can be improved are environmental aspects, children's and labour rights, personal protective equipment, waste management and composting. Stakeholders suggest focusing on the quality and quantity of training and trainers, more adaptation to farmers preferred learning styles of extension and field-based learning.

Recommendations

Address areas of low knowledge and implementation of good agricultural practices

Ensuring that training results in the desired knowledge and that is translated into practice is critical. Although the certified and programme participants have a higher level of knowledge than the control groups, the similar levels of knowledge between farmers participating in different phases indicates that knowledge does not appear to increase over time. This is contrary to what could be logically expected. This indicates there are possible issues to be addressed concerning how training is provided. The main areas of low knowledge and implementation levels to focus on include:

- Children's rights and labour rights
- Weeding
- Record keeping
- Shade trees, soil
- Conservation and field buffer zones
- Fertiliser and crop protection use
- Pruning
- Waste management
- Disease management.

Stakeholders suggested that improvements could be made in the frequency, quality and quantity of training and the competences of trainers, particularly as certification has been up-scaled. Training could be better adapted to farmers' learning styles, with extension and field-based learning preferred over classroom teaching. A critical evaluation of the methods, intensity and frequency of training for farmers at different stages of certification and participation in the programme is strongly recommended.

Lessons learnt

CPQP support for UTZ Certification and sustainability related activities appears to contribute to improving farmer's lives, incomes, crops and environment. This initial assessment indicates that most impacts measureable to date have been felt on livelihoods, incomes and productivity.

Recommendations

Address productivity and efficiency

Despite positive preliminary results on some indicators, many farmers indicated that although they intend to continue producing cocoa as long as it is profitable, they do not see it as a viable future commodity for their children. To meet this challenge and maintain high-quality production and sustainable livelihoods, farmers' and their producer groups' recommendations and our conclusions based on the study findings, are used to make recommendations on how activities could be adjusted and improved to meet objectives.

Because of prior interventions regarding productivity and income, the multiple interventions and many external factors, it is difficult to attribute productivity and efficiency changes to the CPQP or to any one certification scheme. Further investigation is needed, with other types of measures used to assess indicators. This finding mirrors N'dao's (2012) study of Rainforest Alliance certification, which was unable to prove that certification had had any impact on productivity increases.

Farmers' knowledge needs to be supplemented with better and more targeted systems to increase productivity in order to increase incomes and profits. Farmers and their producer groups need a better understanding of their cost and benefit streams over time of participating in certification schemes, given the signals and perceptions of farmers and producer groups about the costs of certification costs. This reflects the results of other studies (KPMG 2012a). It implies that:

- It is crucial to increase productivity and monitor progress to make cocoa farming more attractive for farmers. The GAPs upon which UTZ Certification is based provide a good basis for helping to improve agricultural education and adopting integrated farming systems, sustainable intensification and renewing trees to increase productivity and incomes. These activities are sufficiently complementary to be implemented in tandem with training and implementation of basic GAPs, demonstrated by such activities being implemented on a project scale in Côte d'Ivoire. The knowledge and implementation scores indicate that despite many farmers being trained in GAPs they do not implement them, partly because cocoa production is not sufficiently profitable.
- Up-scaling support to farmers to access disease-resistant tree varieties and associated farming methods to improve soil fertility and reduce pest and diseases, could help to achieve higher productivity.
- Supporting access to appropriate, affordable inputs on a much wider scale, by working with partners to provide access to credit and beans for inputs.
- Increased and more regular in-field extension services, with farmer field schools to embed knowledge and to ensure that the knowledge is translated into practice.
- Training in improved cultivation techniques, particularly regular on-farm training followed up via farmers' groups. Certification and training have not bridged this gap to date, but other support programmes have tentatively stepped in here. Certification provides a good channel to address this collectively through continuing support, to make farmer groups responsive and proactive towards their members' needs. Membership of a farmer group is crucial, since farmer groups are pivotal in providing services to their members. As the profile of the most recent participants is changing, support activities need to adapt to farmers with larger farms in less productive regions who are less accustomed to working in groups.
- Refocus training and regular on-farm follow-ups to areas where poorer implementation scores are apparent, particularly shade trees, fertiliser application, weeding methods, soil fertility improvements and record keeping. This implies creatively tackling record keeping in the context of low levels of literacy. Continue with the farmer field schools and apprenticeship with a higher quality and regular training input; take cocoa as part of the whole farmer system approach.
- Support and promotion of cocoa as a family business and as part of diversified agricultural systems, to enable farmers to spread risks and obtain more regular income streams from different cash and food crops.
- With some adjustments and improvements, these initial impact and baseline results hint that the UTZ Certification appears to have potential to have a positive impact on all the four themes aimed for. On-going monitoring of impacts is essential if the sustainability of activities is to be ensured and enhanced.

Address profitability

Because both farmers and their trees are old and have low (and very likely declining) rates of productivity, and around half of farmers have no other incomes sources but cocoa, today's cocoa farmers do not see cocoa farming as a viable option for the next generation. Other crops and activities are seen as more profitable, easier, less risky and providing more regular income streams. This combination of factors may lead to decreasing production and incomes within a decade. Support activities appear to contribute to prosperity, and the premium is valued – particularly in the first years of certification – but the baseline evidence suggests that payback takes time. Although traders bear many of the upfront costs of becoming certified, there is a need to close this gap to keep cocoa farming attractive. This means increasing investment and ensuring that partnerships can continue to support farmers, providing alternatives to create more diversified farms, and professionalising those farmers with potential. This will involve changing farmer and producer group mind-sets from donor-driven to business-driven and rolling out broad entrepreneurial support for those that demonstrate interest. In particular, it is crucial to:

- Support farmers and their workers – both male and female – to have sustainable, diversified livelihoods from other subsistence and cash crops that complement cocoa, and to test new business models, such as intensification and contract farming. This means engaging women farm labourers to participate and working with women to explore how they can be empowered to have more say in proportion with the effort they put into cocoa farming
- Continue working with the private sector, civil society partners and the government, to ensure viable livelihoods for farmers and their children and effective partnerships.
- Maintain and increase the certification premium to enable certification to be fully covered for farmers and for farmer groups in the future. In parallel, ways to increase the kilogram price for farmers could be even more beneficial in increasing farmers' additional income.
- Support to cut the costs that are associated with activities related to multiple certification schemes – for example, audit and record keeping costs for farmers and farmer groups.
- Long-term strengthening and accompaniment of farmer group, especially those newly formed, to keep them well-managed and continuing to meet their members' needs by providing effective, efficient, inclusive, professional services.
- Training farmers to manage revenues and to farm more professionally.
- Strengthen the business case for young entrepreneurs to farm cocoa, including diversification of products and improvement in farm management.
- Support pre-financing by farmer groups for cocoa purchases and/or support for farmer groups and families to obtain credit.

Continued focus on addressing rights

Despite the training and awareness programmes, gaps still exist between practices and the rights of the workers and children. Support activities that focus on the viability of cocoa farming in the long term need to ensure that children learn the art of cocoa farming safely and responsibly.

- Gaps and risks for the entire supply chain concern child labour, working conditions and labour rights. Continuing actions are needed to ensure that the rights of children and workers are universally known and respected.
- This could include support for the provision of schools and day care, and continued training and awareness raising about child labour and labour rights issues. As these problems are rooted in a combination of factors, continued partnerships, including with the government, are ways to work towards solutions.
- Change the focus of training and regular on-farm follow-ups to areas where poorer knowledge and implementation scores are apparent for labour rights and children's work.
- Monitoring and noncompliance-reporting mechanisms, as well as follow-up actions, can support this.
- A more targeted and much broader inclusion of female farmers and workers in support activities could enable higher levels of implementation of rights, as well as of good agricultural practices. The women farmers' groups, nurseries and learning groups – supported by Cargill and Solidaridad and by other organisations – provide possible role models and opportunities for exchanges on which activities and methods work best.

Partnerships to ensure transparency and dialogue and efficiency
Partnerships have been important in bringing in different and relevant expertise to meet the diverse needs of the many farmers participating in the programme. Dialogue and harmonisation are essential, with direct and indirect impacts considered prior to engaging partnerships and implementing diverse support activities. A concerted dialogue – such as though platforms with other traders – with the government, development agencies, civil society and NGOs is needed to address issues outside of IDH, certification standards and other partners' spheres of influence. Transparency in the programme and in processes is important, given that corruption in auditing and the premium setting process are highlighted as issues.

Address ecological improvement
This study shows that the main activity that aims to have environment impacts is certification. Levels of knowledge and implementation of practices that will enhance environmental protection and restoration are, however low, although they appear to increase the longer farmers participate in certification schemes. However, both the findings from this study with its focus on UTZ certification, and N'dao's (2012) study of Rainforest Alliance certification, are unable to prove the causality and impact of GAPs included in certification standards on the environmental performance indicators. Long-term field measures are needed to establish impact and determine causality, given the high possibility that other external factors affect many of the environmental indicators.

Address market rewards
The timescales of investment and benefit flows associated with switching to sustainable production systems are only beginning to be understood. At the moment, the costs of sustainable, certified production for farmers and producer groups do not appear to be fully rewarded by the market or perceived as such by farmers. This is a burden they can ill afford.

- Farmers and farmer groups need to be more aware and engaged in the debate about the equitable distribution of costs and benefits though the supply chain, and about the timescales of the anticipated flows of costs and benefits prior to engaging in activities. To date, costs are not well understood, particularly at farmer and producer group level, and appear largely underestimated or focused on net income rather than gross profitability. This is partly because different parties in certification bear different costs, and farmers and producer groups are not aware of the full costs of certification. Working with producer groups and farmers to calculate the costs and flows of benefits over time is strongly recommended to allow all parties to make more informed decisions.
- The continued stimulation of demand for sustainable cocoa and the willingness to pay for its costs is essential to create truly sustainable supply chains and to secure demand.
- Market rewards for sustainable production also need to consider what is sustainable from the farmers' perspective and not only from the perspectives of the industry and certification schemes. There may be alternative paths to reward farmers for sustainable farming practices that also make cocoa farming more attractive, also to address farmers' problems of minimising the risks attached to a globally traded cash crop.
- It is essential to continue to stimulate demand for sustainable cocoa and the willingness to pay for its costs to create truly sustainable supply chains and to secure demand.

8.3 What is the added value for farmers of going through the certification processes and being certified?

Lessons learnt
Certification has provided a means to rapidly up-scale sustainable cocoa production and allow farmers to access certified markets where they can benefit from premium prices that reward sustainable production. Certification has promoted producer associations that farmers perceive as providing a range of benefits.

- By organising farmers into cooperatives and aiding their professionalisation, activities have been up-scaled to over 44,000 UTZ Certified farmers and increased to an unknown number of Rainforest Alliance certified farmers across the country.[22] Partnerships thus appear critical channels that add value to certification for farmers. They may possibly enhance their effectiveness and efficiency, as duplications of effort are avoided. The perceived negative impact of multiple certification schemes for farmers, cooperatives and traders is an example of where collaboration and partnerships could help minimise or mitigate negative impacts. The many different activities implemented by traders in the framework of the CPQP, certification and associated activities (see Tables 8 and 9 in Chapter 3), highlight that certification has an added value not only for farmers but also for traders and for organisations that run projects and programmes.
- The premium price received by farmers for certified cocoa is perceived by farmers as one of the important added values of certification. It is an important motivation for farmers to become certified. Although the premium is an incentive for farmers to join certification, particularly in the earlier stages of participation in the programme when the expected productivity and quality increases have not yet become apparent, it is small, representing 7% of the total kilogram price. A high level of attention is given to the premium, due to most cooperatives paying it out separately from the main payment for beans. The premium is also used as means to create loyalty and recognition between farmers, their cooperatives and traders. Farmers and cooperatives expressed concerns that if payments of the premium were to be discontinued, one of the main added values of maintaining the certified status would disappear.
- Certification influences trading practices to produce a range of positive outcomes. UTZ Certified farmers, as members of a cooperative, have access to traders and tend to sell only to the traders who have provided them with support. For traders, this loyalty provides a secure source of certified, good quality bean supplies. These relationships help secure market access for farmers and their cooperatives and increase access to support services that aid production. They also allow access to other social and community activities, which have lower priority but are still seen as important by farmers.
- Certification has supported and promoted collective action in the form of cooperatives. Farmers note numerous benefits of collective action, such as marketing their beans at a good price, access to information and training, providing a forum for exchange and building social capital. It has contributed to some farmers believing that cocoa is a viable cash crop. Certification has aided access to seedlings, crop protection products and credit. Activities associated with certification, often provided by traders, have also contributed to professionalise cooperatives, by providing training, internal control systems, financial support and transport.
- Certification has also had some unintended consequences. It has added to farmers' difficulties in managing large, seasonal cash flows. The auditing process is perceived as open to corruption. The premium setting process is not transparent and appears unlinked to actual costs at farmer, cooperative or trader level. Multiple certification is complex and has been difficult for some traders and cooperatives to manage. The rapid up-scaling of certification related activities (especially training) has led some partners and cooperatives to believe that the quality of training (and possibly its impacts) has varied due to a lack of minimum quality standards.

[22] The COSA (2012) summary indicates an increase of Rainforest Alliance farmers worldwide, but does not specify how many are located in Côte d'Ivoire.

Box 10 Stakeholders' recommendations

Although more than half of the cocoa farmers indicated that they intend to continue producing cocoa as long as it is profitable, they do not see it as a viable future commodity for their children. To meet this challenge, maintain good quality production and sustainable livelihoods, farmers and their producer groups, traders, school masters, local chiefs and organisations delivering services to farmers made the following recommendations:

Content of certification and interventions

1. Increase the number and build the capacity of trainers of trainers, lead farmers and farmer field schools and increase their presence in the field, especially providing regular on-farm extension services, training and follow up.
2. Include programmes to help farmers to diversify crops in order to manage and spread risks, to have sustainable, diversified livelihoods from other subsistence and cash-crops complementing cocoa.
3. Include access to credits and phytosanitary inputs (fertiliser and crop protection) as part of GAPs for farmers and producer groups.
4. Provide training on managing revenues and farming more professionally
5. Provide training on improved cultivation techniques
6. Support to replace old trees, introduce seedling businesses and improve farm soil fertility.
7. Continue with the support to obtain competitively priced inputs and planting materials
8. Continue with support to producer groups to enable them to provide services such as inputs to members
9. Strengthening and professionalising producer groups and producer group managers.
10. Facilitate access to financial institutions for producer groups to aid better management of premiums and revenues.
11. Further or continued support to producer groups to provide services to their community (water, health care and education etc.)

Certification

1. Support the introduction of more good quality, trained and competitively priced service providers (auditors, trainers and capacity builders) for certification.
2. Revise the UTZ Certified Code of Conduct to make it more applicable to the Ivorian context and take account of farmers' needs and actual practices, such as farm management and child labour use.
3. Work towards harmonising the many current certification initiatives to recommend a minimum level of quality and frequency of training and certification activities, especially for follow-up and extension training.
4. Stimulate women farmers and workers participation in producer groups
5. Stimulate activities supporting young farmers and women's empowerment
6. Strengthen the business case for young entrepreneurs to farm cocoa
7. Conduct an evaluation of the process of certification and what is most effective.
8. Create an organisation or institution for follow up, monitoring and evaluation – especially of audits – to maintain creditability and reduce corruption. A mix of surprise and planned audits are seen as effective in providing real evaluations of performance.

Market reward for certification

1. Maintain and increase the value of the premium for farmers.
2. If there are plans to reduce or stop premium payments to farmers, instead convert it social actions (schools, health centres, roads).

Harmonisation and partnerships

1. Involve the state more in certification, particularly government agents (FDFP) in training programmes.
2. Involve, communicate and coordinate interventions with other actors active in the cocoa sector whom have an influence farmer's livelihoods (chiefs, school teachers, elites, NGOs, consultants and service providers, the state etc.)
3. Attract other companies and organisations to invest in cocoa production areas.

8.4 Recommendations to improve future assessments

It is often difficult to assess livelihoods and natural resources as the situation in the field often differs from what was expected (Angelsen et al. 2011). To improve the design of future impact assessments as well as the data quality and collection methods, the following recommendations (which are based on the experiences described under 'Methodology' in Chapter 2 and Annex 8) should be considered:

Recommendations on research design

- Taking the time to design the study, in particular the impact logic in collaboration with UTZ, has been crucial. The multiple methods used, including verification with stakeholders, enabled information to be gathered on stakeholders' perceptions of benefits and challenges, and the outcomes and impacts of UTZ certification in the cocoa chain. The quality of the results depends on

the combination of the design, timing, tools chosen and used and the capacities of the research team. The capacities of the client to steer, clarify, deliver data and input also affect the result. Finally, the context of the sector and in the country has an influence.

- The impact logic (theory of change) proved an essential tool to define and clarify assumptions, and predict unintended effects and external influences. It is recommended that the impact logic should be reviewed at least every two years in order to reflect changes in the operation and aims of the UTZ Certification programme.
- Allocating a longer time period to discuss and budget the design and allowing the research questions to determine the method, and not vice versa, is important. With hindsight, data on productivity and environmental indicators could have been more effectively gathered using different methods (structural in-field observations on implementation of practices, measurements of yields and productivity, farmer logbooks for costs and incomes; audit, ICS and cooperative records; environmental monitoring, satellite images). These methods, however, have cost and time implications.
- Combining the requirements of several clients (IDH, UTZ, Cargill/Solidaridad) turned out to be an efficient and cost-effective way of implementing the research, as it created economies of scale and enabled a large sample to be interviewed. In hindsight, logistical problems and delays in obtaining data and accessing certain cooperatives had major repercussions for the time scale of data collection, and caused delays in deliverables for all parties. It is recommended to carefully consider the number of partnerships and implications for logistics of future studies' planning and deliverables.
- The general feeling among participants was that the validation workshop successfully achieved its aims. Future studies are recommended to follow a similar approach, but to include other stakeholders – such as farm workers and government representatives – and more service providers, women and youths.

Recommendations on research methods

- The difficulties in confirming the status of cooperatives and their affiliations with traders indicates that more time should be taken to verify this in conjunction with UTZ, cooperatives and traders prior to interviews in the field.
- The male and female enumerators, their language skills, experience in the sector and training resulted in a very low rejection rate of interviews, with only one respondent refusing an interview.
- It is recommended to use the mix of one-on-one producer interviews and focus groups, and other stakeholder interviews as the mix allowed more sensitive data to be verified and triangulated.
- The use of most significant change story-telling accompanied by photos and video was not successful in providing a large amount of qualitative and visual data due to the inexperience of the team with this method. If future teams undergo the relevant training, this could be a useful method to provide contextual and qualitatively rich data.
- The GPS-based field measurements enabled the validation of farm sizes and confirmed that significant over- and under-estimates of farm size by farmers occurs. It is recommended to continue measuring a sample and to work more closely with traders and ANADER, who are conducting a similar exercise, to obtain better insights into farmer productivity.
- Data entry and checking should be done directly after the interviews and preferably by the enumerators with a supervisor. Future assessments should consider possibilities to enter data directly into an intermediate database (i.e. tablet-based and possibly online) before transferring to a statistical software package, to save time and minimise errors.
- If a larger amount of qualitative data is collected in future assessments, the use of specialist data analysis programmes may be effective to code and analyse data. Due to the modest quantity of qualitative data collected, the use of specific qualitative data analysis software was not considered to be efficient. The use of Excel and Stata programmes to process quantitative data is recommended, and will allow current and future datasets to be easily combined.
- This study provides a baseline assessment and coordinated data on certification activities during and prior to the programme period. It is recommended that these data be streamlined and included in the UTZ Certified monitoring and evaluation system, to facilitate data collection of key impact assessment indicators to be systematically and regularly gathered and analysed.

- To interview the same farmers in subsequent monitoring and impact assessments, traders, cooperatives and farmers need to be warned in advance to ensure their presence on their farm/in the community on the day of the survey. This holds true especially for owners, who may not necessarily be present on-farm.
- The current study was based on periodic and one-off 'snapshot' data. By collecting longitudinal data, data from a specific period can be better placed in context. For example, on-going monitoring of a selected number of individuals and stakeholders could provide detailed histories of the impacts of interventions and provides stories with a 'face', and using farmer logbooks could provide more accurate data on livelihood impacts. A panel of farmer and worker households could provide systematised gathering of perceptions. The rapid improvement in access to the internet and phone networks and their decreasing cost in Côte d'Ivoire mean that methods using mobile and internet-based data collection may be possible for some technology literate farmers and workers. Adjustments to the audit and ICS may allow a limited amount of additional data to be periodically collected.

Recommendations on the representativeness of the sample

- Explicit efforts were made to interview women and youths during the stakeholder interviews. However, the nature of the programme such that the focus is on certified farmers led to only a small number of interviews with female farmers. It is recommended to include an additional target group of workers to measure inclusiveness. A small, specific study would also enable a baseline to be set that could complement the current study and allow a comprehensive mid-term impact evaluation. These experiences suggest that future assessments should more systematically survey women and young male workers on cocoa farms. The sampled population of certified farmers is believed to be not representative of those working on cocoa farms, with a much higher proportion of older men than indicated in the literature, by stakeholders and in the verification meeting. In future monitoring and impact studies, it is recommended to sample both certified farmers and their farm workers, and to include workers as a separate group of stakeholders, as outcomes and impacts are believed to be different for farmers and different types of workers, as indicated by a study in Ghana (de Jong 2012).

Recommendations on data presentation

- Although a large number of images were collected by the enumerators and study team, providing images of impacts and activities, many are not of professional quality and provide a one-off snapshot in time. A professional photographer and/or film team would provide images of a higher quality to support the impact assessment and over time and during different stages of certification and the study, such as the verification meeting. The visualisation of impacts through photo stories and accompanying storytelling by stakeholders could also enhance data presentation.

Recommendations on indicators

- Whether the observed improvements will continue needs to be verified in future assessments. Continued monitoring of the fifteen indicators can help better understand how activities are leading to outcomes and impacts. For future assessments, different questions may be asked, calling into question whether the same indicators should be used or different indicators are needed. The time and effort required to collect data on the large number of indicators and the limited effectiveness of some indicators suggest that a smaller number of key indicators for regular monitoring and follow-up assessment should be selected. The length of the survey could then also be shortened.
- The indicators the research team believe most useful were (1) farmer characteristics, (2) farm efficiency, (3) productivity, (5) profitability, (6) livelihood perceptions and needs, (7) labour rights, (8) child labour, (9) working conditions, (11) inclusiveness, (14) cooperative services and (15) sustainable practices and market rewards. For indicators 4 and 5, more accurate production costs (based on data recorded by farmers) and measured farm sizes are needed. For indicators 7, 8 and 9, would be enhanced were it combined with audit results and unannounced audits. It may be possible to use data produced by other government and NGFO initiatives monitoring child labour. For indicator 11 (inclusiveness), better comparative data on the average Ivorian cocoa farmer and worker would make the use of this indicator more robust, as would explicit targeting of specific groups by the programme partners. Indicator 14 should be always complemented with cooperative interviews to provide both sides of the story.

- In retrospect, the following indicators were not so useful. Indicator 4 (on quality) is obsolete due to the government reforms, which now set quality standards. If quality is to remain an indicator, it should be measured by comparing traders' data on rejections and quality, and cooperatives' data. The environmental indicators (13, 14 and 15) could be measured using field-based data using different methods. For instance, GIS and satellite images of deforestation satellite to provide more meaningful evidence of impacts.
- Other tools could be used to gather both quantitative and qualitative data on indicators and using other sources such as UTZ Certified ICs and audits, cooperatives and traders. This requires making agreements about data sharing and confidentiality, and the use and publication of such results.

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Annex 1 Work Plan

Approach

The methodology will build upon that developed for the UTZ Ghana cocoa baseline assessment, but will be enriched with more qualitative methods, revised indicators, pathways and outcomes, and improved reporting format. Maintaining this method allows comparability between countries. The process of conducting the assessment is conducted in the 10 main steps described below.

Activity 1: Review Theory of Change and indicators
The team will first refine the research questions, developing upon the research questions stated in the discussions. LEI will have a separate session with the IDH cocoa team to get a full understanding of the theory of change of the IDH CPQP programme.

Research questions
The following specific learning questions are proposed.

1. **How do the certification and related activities of the Voluntary Standards and implementing partners**[23] (Solidaridad, buyer-exporters, private training agencies, consultants and the national rural development agency) **influence knowledge** (of GAPs, social and environmental issues in line with the code of conduct) **and related behaviour/practices of cocoa farmers in Côte d'Ivoire?** and what are the **results of these in terms of people, planet and profit**?

2. **Is the CPQP cocoa programme in Côte d'Ivoire inclusive? What are the characteristics of certified farmers?** Are certified farmers representative of Ivorian cocoa farm holders? (in terms of incomes, gender, age, farm size and tenure and ethnic/migrant status)? Do knowledge and benefits also reach others working/helping on certified farms (spouses, workers, tenants, children etc.?)

3. **What is the added value of going through certification processes and being certified for farmers?** What perceptions do farmers and stakeholders (groups, traders, traitants, exporters, trainers) have of the process and impacts of certification and training on their livelihoods (e.g. Benefits in terms of improved wellbeing, increased professionalism, increased trust and communication between farmers and co-ops, how certification influences loyalty of members towards a group and willingness to reinvest in cocoa farming) ? How do the interventions of training and certification influence/strengthen each other?

These research questions are based on the IDH Theory of Change for sustainable cocoa in Côte d'Ivoire (see separate document) and impact logic. Notable assumptions made by IDH underlying its intervention logic include:
- The main impact of certification and training is at a farmer, household level (Note that (individual farmer certification has not yet occurred in Côte d'Ivoire and certification is on a group level. Certified groups are currently mostly organised as cooperatives, but Certification of traitants/pisteurs is occurring and is increasingly foreseen in future).
- Certification provides in many- but not all cases - a price premium and direct economic benefit &I improved market access

[23] Within the Utz programme two types of training are conducted: 1. Training of master trainers on the Code of Conduct requirements by UTZ to its partners (co-ops, consultants, exporters, NGOs) 2. Technical training by service providers (training of trainers) to lead farmers, FFS, etc.

- The direct economic benefit occurs mainly at certificate holder/group level. The premium and how it is spent should be clearly communicated to individual producers. The premium should be invested or distributed in a way that benefits all certified producers (in cash or in kind).
- The certification process (including implementation of the code requirements, training, creating and strengthening of farmer groups, setting up an ICS) provide indirect benefits by enabling farmers to gain additional economic benefits (increased yields, better quality, efficient use of inputs, better management practices) and social benefits (increased negotiating power, access to inputs and services). These social and economic benefits lead to improved profitability (income) and contribute to long-term economic viability and resiliency of farms.
- Inspections and peer pressure contribute to implementation of sustainable practices as learned in the training.
- Professional farm management and risk management contributes to improved farm resilience (reduced vulnerability for shocks)
- Whilst group certification requires a registered group (with a functioning ICS), standards like UTZ set no requirements for their democratic structure. Groups can be self-initiated associations/cooperatives or externally initiated e.g. traders, traitants, NGOs etc. IDH, UTZ and Solidaridad are in the process of understanding what form of organisation is most beneficial for farmers, but does assume that stronger groups creating stable and secure trade conditions and acting in the interest of its members are the most important conditions for groups to benefit farmers. IDH does however assume that groups have a value (i.e. access to trainings, inputs, markets), yet the experience is that that not everyone is or can be part of a good functioning group.
- The phasing of activities to certify and then maintain certification and also the fact that different practices lead to results at different moments means that different incentives and impacts on farmers will occur at the different stages and thus farmers at different stages in a certification programme (e.g. amount of training received, amount of time in the programme, year of certification) will experience different impacts. This is not only related to the increased number of criteria but also to how long farmers are participating in the programme (e.g. different practices have different effects on productivity; some take more time)
- The criteria in the programmes like UTZ and RA lead to planting of shade trees (towards correct shade levels), more vegetation on farms and borders of water ways and less deforestation and encroachment in protected areas.
- Shade trees (and especially diverse and indigenous shade trees), as well as increased vegetation on farms, reduced encroachment and deforestation, and protection of water streams contribute to protection of natural habitats and biodiversity conservation,
- IPM and controlled and informed use of crop protection products also contributes to improved biodiversity conservation
- The correct amount of shade trees (shade levels) also contributes to a reduced risk of pest problems (contributing to reduce pesticide use) and to improved organic matter/soil structure and soil fertility.

Secondly, the Theory of Change (ToC) and indicators for Côte d'Ivoire will be further developed. This will use insights from IDH's general (ToC), the ToC and indicators from the Ghana study, and the Solidaridad/Cargill TOC and indicators, and a ½ day meeting with IDH cocoa programme staff (to be defined). This will be discussed and presented to IDH and partners. From the TOC indicators will be developed that form the basis for creating the questionnaire and data collection tools. These will be aligned with Cargill and Ghana study where possible. For each indicator it will be decided how data will be collected (source and quantitative or qualitative method). This activity will be financed by the Top Sector project. IDHs refinements relating to access and use of farm inputs will be incorporated.

Activity 2: Revise tools and methodology

The methodology builds on the Ghana study and takes into account the same DAC principles for reliability, usefulness and independence, statistical, construct, external and internal validity (causality). As IDH requires that the findings of the research should contribute to internal and external communication purposes and provide more qualitative ''stories'', the main change from the methodology used in Ghana is the addition of qualitative data collection techniques. Also the length of the questionnaire will be reduced, the research questions more focused and adaptations concerning the sampling, learning from the Ghana study, will be taken into account.

Scope

The total number of respondents will be in total is 1,065 – this includes farmers and all the other stakeholder interviews supported by the IDH, UTZ and Solidaridad-Cargill budgets. Of the farmer population about 51% are working with multiple standards, in the current sampling 30% is multiple standard and the control groups are 'un-touched' by any form of certification. With the additional add-on of IDH (all the other traders, including Cemoi and ADM) to the UTZ and Solidaridad components we have a sufficiently large sample (60) of farmers and stakeholders linked to all the traders active in CdI.

Ideally, baseline data had been collected before farmers actively participate in the cocoa programme to allow impacts to be assessed against a baseline. Since the CPQP Côte d'Ivoire programme is still relatively recent and there is no baseline study, a comparison of the start and end situation, or the before and after certification situation is not possible. However by comparing the indicators at farmer and group level, insights can be gained into the impacts of the different certification approaches used by buyers/traders and pisteurs. These can also be compared with the indicators for uncertified farmers, to provide an indication of initial impacts and achievements. It is assumed that the different approaches used by traders and pisteurs may result in different impacts for affiliated farmers (once factors such as farm location in suitable or less suitable zones, length of time certified and number of training are controlled for). Thus, knowing how the different traders implement certification and the different types of delivery and implementation modes is an essential part of the research. This impact assessment will reflect the situation from the programme initiation in 2009 and farmers and groups in different phases of certification. The differences make it necessary to consider how long a farmer has been trained at the time of conducting the survey, if they are certified and for how long. The use of qualitative methods addresses some of the limitations by allowing farmers, cooperatives/groups and stakeholders recall and perceptions of impact to be gathered and helps triangulate the quantitative data. This study will therefore provide baseline which can be used for future impact assessment and allows before and after assessment of impact. The case and desk study activities of the Top Sector project also seek to find other data which can provide a comparative baseline and further help triangulate findings.

After this study, it is understood that similar data will be collected for a midterm (after 1,5 - 2 years) and final assessment (after 3 to 4 years). The impact of the CPQP programme can only then be fully established using the changes observed in the selected indicators over the time period and changes observed in the selected indicators between the treatment and comparison groups.

Sample

The impact assessment will use a Difference in Difference approach. This combines two types of comparisons. The first comparison focuses on the change in the longitudinal data on farmers to establish the effect of the intervention through the difference between the 'before' and 'after' intervention situations. A second comparison accounts for external factors that influence the performance of participating farmers. For this the change in the indicators assessed between a 'treatment' (certified) and a ''comparison'' or ''control'' (uncertified) group are compared. Farmers in the treatment group may be certified (or working towards certification) as a group and have links with buyers (or not). Within a group, farmers can be in different stages of training and certification. Farmers in the comparison group are not certified at the time of interview (and may become certified, by UTZ, RA or other programmes in the future), but operate in comparable agro-economic circumstances. Since external factors (agro-ecological suitability of the area for cocoa farming, farm size, ownership, levels of conflict, other certifications) may determine the change in the indicators for farmers that produce under the same circumstances but were not involved in certification, this comparison group aims to account for the influence of external factors.

Taking into account the Ghana impact assessment experience, LEI proposes to select a stratified sample of UTZ Certified groups in Côte d'Ivoire. The sample aims to be representative (and generalisable) as possible for producer groups in Côte d'Ivoire[24]. Factors we think are important to take into account in selecting the sample of cocoa farmers are:

i. Trader to which the farmers linked (Note: Cargill groups and farmers will be covered by the Solidaridad-Cargill study and so this study will only concern other traders: at least Barry Callebaut and then a number of the other trades, and groups not linked to traders)
ii. Service provider used to train the farmers (ANADER, Akwacao, in house or cabinets such as KDD and Trust Consulting)
iii. Type of certificate holder (coop/traitant/pisteur)
iv. Size of the group (large/small)
v. Location of the group (related to agro-ecological zones and their suitability for cocoa farming[25] and therefore expected yields), thus samples will be selected from the ''excellent'' zones and from the marginal zones (notably the far western area and Bas Sassania area).
vi. Timescale in certification process; including groups soon to be certified, early groups from 2009 and recently certified groups. This variable allows a comparison and baseline setting for future assessments.
vii. Other certifications (as 51% of groups have multiple certifications, it is important to take into account the number of certifications per farmer/co-op and which was first).
viii. A control, ''non-treated'' group of un-certified farmers will be interviewed. The costs for this will be covered by the Top Sector Project. This control group is particular to this assessment and may not be relevant in future assessments, as farmers in the control group may at any point in time become (multiple) certified, requiring the new individuals to be included into future control ''non-treated'' groups.
ix. Other factors (e.g. other support (e.g. philanthropic and social projects e.g. Cargill's Family Field Schools and social programme), areas where conflict has had more impact, problem cases etc.).

The final sample and factors to be taken into account will be determined in this phase, drawing on information supplied by IDH, UTZ, Solidaridad and partners.

Given this large number of criteria, the sample will not be random, but the selection of cooperatives, communities and then individual farmers will be randomly selected using the random number generation technique (outlined in the Ghana study). A sample of at least 60 farmers linked to each ''trader'' is needed to make the study statistically valid. The exact number will be established in this activity and will also be dependent upon the budget available. Data collected via the qualitative and quantitative methods will aid triangulation; to check whether these enforce or contradict each other.

A smaller, purposive sample of farmers will be selected for qualitative data collection. The selection criteria for the sample will be that male and female farmers, length of time they have been participating in the programme, farm size (small and large farms), certified and uncertified, and those linked to traders and serviced provided and with no links, length of certification, level of external support and farmer diversification). The number of interviews that can be conducted within the budget and timescale will be confirmed during this activity.

The sampling procedure for control group farmers differs. A control group was to be established for each region (excellent and marginal cocoa farming regions) to enable comparisons between the control and treatment groups in each region. Sampling control group farmers is expected to also be difficult in Côte d'Ivoire, as in Ghana, as there was no list readily available with all cocoa farmers in each of the study. Thus, we will ask IDH, UTZ, Solidaridad, WAFF to help pick out control group communities on the basis of the following criteria:

[24] Note that this sample may not be representative of Ivorian cocoa farmers however, for which a much wider range of interviews would be necessary than resources allow.
[25] Propose to use the classification of suitability developed by CIAT (see Annex 1).

1. Most villagers are involved in cocoa production
2. No training / certification has taken place for UTZ in the community
3. No training / certification has taken place for other certifications in the community (Rainforest Alliance, Fair Trade / FLO).
4. The community is at least 10 kilometres from a project community.

To select the farmers in the control communities as randomly as possible, two strategies are proposed. One is that enumerators go to the community and try to gather a group of farmers through UTZ, Solidaridad, a trader or support organisations operating in the community. From this group, farmers are randomly selected for interview. The second strategy is snowball sampling where enumerators arrive in a selected community and find a cocoa farmer to be interviewed. This respondent indicates another person to be interviewed (etcetera). When the respondent does not know a person, or the indicated person is not present, the enumerator would randomly find a new farmer to be interviewed.

A selection of stakeholders will also be interviewed. This will include group (cooperatives/associations) managers, school teachers, village chiefs and notables and local authorities. The exact number will be worked out in this phase and will be determined by the budget and time available and is estimated to be around per 10 trader plus interviews with the traders and their training service providers associated with certification, estimated around 30. This means the total number of stakeholder interviews is between 110 to 120.

An **inception report** will be produced which includes the ToC and context, methodology, indicators, research questions- submitted for approval prior to fieldwork, and a draft table of contents for the final report and format for the executive summary for comments and approval.

Activity 3: Kick off and Training enumerators Côte d'Ivoire
To prepare the enumerators for data gathering, a four day training will be organised. This will focus on introducing the survey team (enumerators and supervisors) to project, cross checking local names and terminologies used by cocoa farmers with terms used by the study team, discuss and refine the questionnaire by interpreting questions/items into Ivorian French and maybe local languages (e.g. Baule) in which the interview will be conducted. Training in the methodological approaches such as SSI, Most Significant Change stories, Focus group discussions, transects will be conducted. The process of local language translation and role plays by enumerators will also assist in modifying the questionnaire and techniques to be used to make them appropriate. The revised questionnaire can then be tested in a nearby cocoa growing community by all enumerators and supervisor, discussed and revised based on feedback.

During this kick off phase, meetings will also be held with IDH, Solidaridad, UTZ, WAFF and other stakeholders (e.g. traders such as Cargill) to assist in clarifying and verifying the Theory of Change, the context, the sample and provide knowledge on the training and interventions made by traders and their support organisations or NGOs to achieve certification.

Activity 4: Data collection Côte d'Ivoire
The main bulk of data will be collected by enumerators from our local partner, A.C. et Vie, by visiting individual farmers with the questionnaire and photographic equipment. Besides the questionnaires, data on certification and internal control systems (ICS) and other related activities e.g. (e.g. GAPs, social and philanthropic programmes, training) will be collected from associations/cooperatives. Introductions to the unions will be assisted by introduction and contacts given by UTZ, WAFF, Solidaridad and the traders with which the selected sample of groups are associated. Learning from experiences in Ghana and other studies, the farmer interviews will aim to be 45 to 60 minutes long.

Data collection methods
Two main complementary methods will be used to collect data from farmers.

Quantitative primary data will be collected using a structured questionnaire. This is based on the questionnaire developed in the Ghana study which will be revised to take into account the changes

from the ToC and indicators from Activity 1. This will be translated into French. A semi-structured interview guide will be used to collected data from groups (e.g. cooperative managers), licensed buyers and traders.
Secondary data provided by the Top Sector Project literature review. Farmer households are often subject to evaluation studies and surveys, a number of which have occurred recently. To avoid over-researching and to decrease the burden on farmers, this study seeks to make use as much as possible of existing datasets i.e. databases at cooperative level and at the level of the traders (i.e. bean quality data, volumes, certified versus non-certified volumes, suppliers etc.). These will be obtained from the work of the Top Sector study.

Qualitative techniques will be used with a selected sample of groups or cooperatives and farmers to conduct semi structured interviews and story-telling. This technique will be used to triangulate some of the results of the quantitative analysis and get a better in depth understanding, reconstruct baseline data, get information on more sensitive topics (e.g. child labour) or from vulnerable groups, and a better understanding of contextual factors and unintended effects. This will be done a participatory way by organising workshops with the target groups (taking into account gender, farm sizes, level of intervention and previous support etc.). These will be supported with photographs[26].

Qualitative interviews will be conducted with selected individual farmers after the quantitative interview. For the group oriented methods qualitative data will be conducted at appropriate times of the day (probably early late afternoon/ evening or early morning) in the selected locations.

If UTZ or Solidaridad hire a professional film crew/photographer, the team will collaborate with them. For example, conducting joint fieldwork such that interviews and focus groups can be filmed, and indicating the farmers and associations which may be suitable for recording success stories and significant changes.

Activity 5 and 6: Data entry and Data analysis
The quantitative survey data will be entered into an Excel database created by LEI by the A.C. et Vie team, then checked, cleaned and exported to the statistical programme STATA for analysis. For the indicators, descriptive statistics such as the mean, median and standard deviation will be calculated, with maximum and minimum values when relevant. Key indicators of certified and control groups will be compared taking into account cocoa farming region and farmer characteristics using cross-tabulation, pairwise t-test and regression analysis. Certified groups can be compared according to length of time of certification and types of certification interventions and pathways. Other relevant comparisons will be assessed during this phase and draw on experiences from the qualitative fieldwork, meetings with partners at the kick off period in Côte d'Ivoire and from Theory of Change process.

The qualitative data will be analysed and the most significant change stories distilled (e.g. reporting lessons learned on the process that led to specific quantitative outcome) using the relevant qualitative indicators. The qualitative information will be cross checked with the results of the quantitative surveys to ensure consistency of outcomes. This allows the results of be triangulated. The qualitative analysis will complement quantitative data by providing lessons learned of successful (or problematic) farmers. As illustrated in the research questions, the qualitative analysis will help understand the perception of farmers about certification programmes in dimensions such as wellbeing, bargaining power, professionalism, trust, attitude towards cocoa farming (exact variables will be based on indicators from the ToC). In addition this technique can help capture unintended impacts and how external factors affect farmers' performance. It also helps identifying how certification is valued by farmers and groups, their needs and constraints related to the implementation of certification and training Storylines will be developed which provide examples of the farmers corresponding to the main selection criteria (male/female, large/small, certified/noncertified, good cocoa farming conditions/poor, high external support/no support). Written, qualitative responses which help explain the research

[26] The local research team will make photos and images for the report.

questions will also be provided. These will be supported by quotations. The results of the Top Sector Desk Study of literature and Case Studies will be used to assess whether the research results in this study reflect the general situation of Ivorian cocoa farmers.

Activity 7: Preliminary report
After the first data are analysed a draft report will be written presenting the main qualitative and quantitative results of the research for the verification workshop in February 2013.

Activity 8: Results verification workshop in Côte d'Ivoire
The main results of the preliminary findings will be presented to invited stakeholders in a verification workshop in Côte d'Ivoire for learning and feedback. These stakeholders may include WAFF, Solidaridad, IDH, UTZ, traders and NGOs implementing the projects, cooperative managers, extension agents, auditors, project farmers, CIRAD, relevant development/support organisations (e.g. GIZ), government agencies, local and traditional authorities and research institutes. Suggestions will be gathered from the Guidance team. Based on the discussions in the validation workshop, as well as feedback, the analyses will be adapted and explanations given about the results. If possible, the timing of the workshop will coincide with any other events to maximise participation and decrease costs.

Activity 9: Reporting
After all data has been collected and analysed, and feedback from the verification workshop, a first draft of the report will be provided for review by the Guidance team. The final, concise (less than 50 pages, excluding appendices) report incorporating feedback and comments from the guidance team will be provided in English in Microsoft Word. It will be drawn up according to the approved table of contents as part of the inception phase and fit for external purposes. It will contain an executive summary in English and in French and respond to the research questions and sub-questions. Photos will be included in the report and the unedited photos will provided with an explanation of their content.

Activity 10: Presentation
A presentation of all the deliverables will be made at a meeting with UTZ, Solidaridad and IDH in the Netherlands for learning and reflection.

Limitations of the approach
The budget and timescale proposed in the ToR do not allow major changes to be made to the methodology to respond to recommendations made in the Ghana study. This means that changes in the methodology to address the recommendations and provides limited opportunity to use methods other than a one-off questionnaire (with its inherent problems of relying on poor recordkeeping, short term memory recall, no measurement of farm size, recollection error and interpretation bias). Alternative methods would involve longitudinal studies requiring visits to the farm and/or groups over a longer period of time (e.g. one year) to obtain more reliable data.

Results

1. Baseline data
2. Increased knowledge of the indicative impact, based on qualitative and quantitative research, of the IDH CPQP programme for sustainable cocoa in Côte d'Ivoire
3. Perceptions of farmers and stakeholders on the impact of Certification
4. Images, quotations and sounds of the perception of farmers and stakeholders on the impact on the impact of certification.

The deliverables

The project will lead to the following deliverables, delivered according to the schedule in the time plan:

1. Provision of the **visual documentary materials** (pictures with explanatory titles).
2. The database (after cleaning) in Excel or Stata (to be agreed).
3. An **inception report**, which including the ToC and context, methodology, indicators, research questions- submitted for approval prior to fieldwork, and a draft table of contents for the final report and format for the executive summary for comments and approval.
4. A **verification workshop** of the preliminary findings with IDH, Solidaridad, UTZ, farmers and stakeholders in Côte d'Ivoire for learning and feedback.
5. A draft report for review, followed by a concise **final report** incorporating feedback provided within the agreed timescale (< 50 pages, excluding appendices) provided in Microsoft Word, fit for external purposes:
6. In English, according to the approved table of contents as part of the inception phase.
7. Executive summary in English and in French.
8. The research questions and sub-questions will each be answered.
9. **Presentation** of the final report and documents to IDH, Solidaridad and UTZ (and other partners as they see necessary) in the Netherlands for learning and reflection.

Annex 2 Indicators

Study impact indicators

Research questions Outcome	Link to IDH CPQP indicator	Outcome	Indicators	Question numbers Producer questionnaire (other questionnaires used(in red)	Remark/ Comment	Issues for data analysis	Source/methods to obtain data
1, 2, 3	1.1.11.1.2 1.1.3 1.1.4 2.1.1 3.1.2.3.1.3	Farmer Characteristics	1.0 Name & telephone	6	General demographic and farm data –	Indicators as variables to compare certified and non-certified farmers. Compare length time certified, training and other interventions, ethnicity, migration and effect of land ownership/tenure 1.11: Analyse tenure system in Côte d'Ivoire 1.12: Farmers reports on farm size cross check co-ops and baseline data, traders & GPS	Farmers Producer group manager GPS measures
			1.1 Age	7			
			1.2 Gender	3			
			1.3 Participation in a project/sustainability programme (certification, community based, productivity, farmer /field schools etc.) (specify)	16, 44			
			1.4 Length time certified	16			
			1.5 participation in other certification programmes, length time	16, 21 *Producer group*			
			1.6 Nationality	11			
			1.7 Native (ethnic group) of area	9, 11			
			1.8 Position in household & societal status	10, 13			
			1.9 Number of children	14			
			1.10 Number & type of training & support interventions	38, 39			
			1.11 Farm tenure/ownership sharecropping/worker status	13, 15, 16			
			1.12 farm size (measured or not?)	16, *GPS measures*			
			1.13 % contribution of cocoa to household income (gender differentiated)	49, 50			
			1.14 Other sources of income (gender differentiated	50			
			1.15 No of years cocoa farming	16			
			1.16 Number of cocoa trees on all farms	16			
			1.17 Location (village/region)	4, 5			
			1.18 Member coop(s)	9			
1, 3		Farm efficiency	Input/output ratio (agronomic/economic)	29, 30, 36, 37	Cocoa farm efficiency, not all farming activities		Farmers Co-op manager Service providers
			tree density in practice (vs. prescribed)	16, 82			
			defined (trained) spraying team with a manager competent on dosages	*Producer group*			

1, 3	1.2.3 1.2.4	Increased productivity	3.1 Yield per tree and acre	16, 77, 69, 70	Cocoa farm productivity only	Compare to other baseline data	Farmers Producer group manager Village chiefs Local authorities Service providers Focus group
			3.2 Annual production (last year's harvest)	16			
			3.3 Production and practice change since certification/participation in the programme	17 18, 19, 20, 26, 70 100,101, 102, 103, 104			
			3.4 Change in inputs, seedling distribution, planting and maintenance and input access	33, 34			
			3.5 Proportion (%) sold to certified buyer(s)	18			
			3.6 Influence climatic factors or other external factors (Political, economic, social)	26 *Focus group*			
1, 3	1.2.5	Quality meets market demand	4.1 Bean rejection rate	24 *Trader*	(Proxy)	Triangulation data from farmer - producer group	Farmers Coop Traders/exporters
			4.2 Rate that requires re-drying	25			
			4.3 Post-harvest practices	77, 78, 79, 80, 110			
2, 3	3.2.2	Increased profitability and long-term viability of farmers and groups	5.1 Increased income Change in price, Frequency of payment, Part of the premium directly to the producer in cash	17 41, 42	How do farmers make decisions and why do they take decisions the way they do		Farmers Producer group
			5.2 Record keeping/Use of records and other information (e.g. provided by group/ICS) for decision making	62			
			5.3 Knowledge: Is market information used for/in decision making?	*Producer group*			
			5.4 What and how is premium distributed (individual and group level)	41, 42			
			5.5 How is premium spent/invested?	51, 58			
1, 2 3		Improved livelihoods	6.1 Perceived changes in livelihood (specify…) Presence of schools or numbers of teachers or child attendance or literacy programme. access to healthcare or presence of medical staff or number of clinics or pesticide sprayers health checks or first aid training Access to markets, credits / banks, other products (seeds etc.) access to decision-making groups (co-ops, associations, etc.)	53, 54, 55, 56, 57, 59	Livelihood is defined by: natural resources, technologies, skills, knowledge and capacity, health, access to education, sources of credit, or networks of social support.		Farmers Coop Focus group Traders/exporters Village chiefs Local authorities School masters
			6.2 Perceived changes in needs (income, food, water, status, health, education, other)	60			
1, 2, 3	4.1.1	Respect for labour rights	7.1 Knowledge: (certified vs. non-certified farmers) & if member of association previously? Why/not??	9, 53, 63, 64		Additional 7.3: Check national laws	Farmer Coop Focus group (Labourers / women)
			7.2 Extent forced labour, discrimination & contracts Wage levels paid for hired labour and differences	94, 95			
			7.3 Knowledge of national laws on wages, hours worked	95			
			7.4 Contacts with local community representative for labour rights	98			

1, 3	1.2.6 4.1.1	Respect for Child labour	8.1 Activities of children on cocoa farm (labour)	29	Assessing role of children in cocoa farming only (no other farming activities)		Farmers School teachers Producer group manager Focus group (youth / children)
			8.2 Knowledge: activities on cocoa farm that can be executed by children?	44, 46, 97, 111			
			8.3 Extent of farmer's children's attendance at school	55, 59 *School master*			
1, 3	4.1.1	Healthy and safe living and working conditions	9.1 Number of injuries during cocoa farming (hired labour, family labour, communal labour): cuts that need stiches and fractures	37, 92, 99	Assumes training leads to safer practises and decreases number of accidents, if accidents occur, should be treated properly		Farmer Producer group manager Service providers Focus group Trader
			9.3 Use of protective clothing	36, 37, 92, 108 *observation*			
			9.4 Impact of community development/social projects	*Focus group, observation*			
1, 3	1.2.11.2.2 4.1.1	Maintained & improved quality of water and soil	10.1 Implementation of practices (pruning, mulching, fertiliser use etc.)	100,101, 102, 103, 104 71, 72, 76, 77, 78, 79, 80, 81 *observation*	Proxy indicators (water: water streams protected by vegetation, no spraying next to stream, pollution by chemical waste) Soil: correct fertilisers used, organic fertiliser, soil organic matter		Farmer Q Focus group Traders/Traitants ANADER
			10.2 Use of inputs: agrochemicals, quality and type	73, 74, 75 *observation*			
			10.3 Protection & quality of water	86, 87 *observation*			
			10.4 perception soil quality	85			
1, 3	4.1.1	Effective waste management & reduction	11.1 Implementation: if waste & how agrochemicals & leftovers handled?	88, 89 , 90, 91, 93		(cocoa production related)	Farmer Q Focus group
			11.2 Is compost used? Or sold?	31, 32 *observation*			
1, 3	4.1.1	Protection restoration of natural habitats/biodiversity	12.1 Number of shade trees on cocoa farm practice planting shade trees pre-certification	16, 81, 82, 83, 84 *observation*		(on/near farm)	Farmers Q Producer group (audits)Traders Traitants, ANADER
			12.2 Preference shade tree (native) pre/post certification	84			
			12.3 Land clearance for cocoa (pre/post cert)	28, 16 *observation*			
2	1.1.1	Inclusive programme	13.1 Demographic information of questioned farmers vs. 'general' cocoa farmers in Côte d'Ivoire.	3, 4 ,5, 7, 9, 10, 11, 12 ,13 ,14			Focus group Village chiefs Coop
			13.2 Percentage of lead farmers, internal inspectors, executives, gender, youth in samples	43, 7, 3			
1, 3	2.1.4 2.2.1	Stable producer groups providing better and reliable services	14.1 Participation in group, number of years	9	Compared UTZ Certified and non-UTZ farmers	Compare certified and non-certified Compare farmers with multiple Cargill projects with those only via certification	Farmers Q Producer group Focus group Trader Traitant
			14.2 number of participating members	*Producer group*			
			14.3 Membership growth?	*Producer group*			
			14.4 Perception usefulness of the group	61, 62, 63, 64, 65, 66			
			14.5 Perception benefits/services of the group				
			14.6 Perception improvements possible	8			

			14.7 perception transparency of ICS	62,65, 66	Compare length time of Cargill projects interventions & certification and reported impacts Triangulation perceptions of farmers, co-ops and traders	
			14.9 Does group facilitate access to inputs?	33, 34, 51 *Focus group*		
			14.10 Does the group facilitate sales?	*Producer group*, 35		
			14.11 (Sustainability of the group) ' perception of existence after certification'	*Producer group*		
			14.12 extent price/market information provided to farmers	62		
			14.13 member of other groups and sales to other groups/*traiteurs*, why?	20		
			14.14 Selling beans to others (traitants, buyers)? (loyalty)	18,19,20		
			14.15 (Likert) Perception if group well-managed/ financially healthy?	66		
			14.16 proportion payment to farmers on time	62		
			14.17 Perception of communication with members	62		
			14.18 Perception level of capacities	62		
			14.19 Perception level of bargaining power with traders/traitants	59, 62, 66,		
			14.20 Perception effect of training, support and interventions	45 *Trader*		
			14.21 how do interventions impact loyalty, what are the benefits gained and how they are perceived ?	23		
2, 3	2.1.5 2.2.2	Sustainable practises rewarded by the market	15.1 Better price / premium	47 *Trader*	Compare UTZ, & non-certified. Price in future difficult to use as indicator given context IC and reforms, can use for past analysisAnalysis to qualitative indicators	Farmers Q Coop Focus group Trader Traitant Local authorities
			15.2 Long-term buying commitments	*Focus*		
			15.3 More potential buyers	*Focus*		
			15.4 Less time needed before a buyer shows up?	*Focus*		
			5.5 Receive additional inputs, or external support? From who? level & type of services, inputs/support	21 *Trader*		
			15.6 Do you want your children to become cocoa farmers?	67, *Focus*		
			15.7 Do you plan to continue cocoa farming/intensify/diversify? (5 yr. timescale)	68		
			15.8 Factors determining becoming and/or staying certified?	62, 63, 64, 65, 66 *Focus*		
	3.1.1		Partners involved in cocoa sector		Literature review	

CPQP Indicators not addressed by the study

2.1.1 No. of private institutions offering business services to groups/organisations – only for sample
2.1.2 No. of producer groups/organisations supported and functional– only for UTZ programme
2.1.3 No. of business partners committed to integrating sustainability into their value chains
2.2.1 Sales of certified cocoa from producer groups/organisations as a percentage of total authorised sales on certificate – only for farmer level, not producer group level
2.2.2 Volume (mt) of certified cocoa purchased by CPQP programme partners
1.2.3 Purchases (%) of certified cocoa, as a percentage of total cocoa purchases made by CPQP programme partners
1.2.4 Additional jobs created in targeted cocoa sector value chain
3.1.1 No. of non-private partners involved in the programme – only for cocoa sector in Côte d'Ivoire in general – and for selected traders - not specifically for the programme
3.1.2 No. of institutions/entities trained
3.1.3 No. of extension officers trained in producing countries – only for sample
3.2.1 No. of local CPQP programme partner implementation structures operational.
3.2.2 No. of trained extension officers sharing knowledge in workshops with global cocoa stakeholders – only for sample
4.2.1 No. of best practices shared in sector (through websites, events, etc.)
4.2.2 No. of regional cocoa forums established and recognised by the sector

Table 12

Details of indicator measurements

Indicators	Indicator measurement
Gross income from cocoa	Yearly production of all cocoa farms multiplied by the average price per kg for cocoa paid to farmers
Labour costs of cocoa production	All reported hours spent on cocoa production activities multiplied by the price of labour (2000 CFAF per day). Family labour costs are calculated using the same price as for hired labour. Not included are costs and time spent by farmers on training, communal 'shared' labour gangs, as lead farmers, on internal control systems and on auditing. Farmers indicating zero labour costs were not included in the calculations (n= xx)
Input costs of cocoa production	Number of times a product is applied multiplied by unit multiplied by price per unit of input (fertilisers and crop protection products such as fungicide and pesticide) Time (opportunity costs) to become UTZ Certified and investing in PPE has not been taken into account in cost calculations
Total cocoa production costs	Labour + input costs. Not included are costs of equipment and personal protective equipment, costs (in kind) of spraying gangs or communal 'shared' labour. Time (opportunity costs) to become UTZ Certified and investing in PPE has not been taken into account in cost calculations
Net income from cocoa	Yearly production of cocoa from the main farm, minus total production costs for the main farm
Cocoa production efficiency	Economic and agronomic input/output ratio
Productivity	Yield per tree per hectare. Based on farmers report of their farm size. An alternative productivity result is based on the margin of error (70% of farm sizes were estimated, with on average farm size 7% over estimated)
Knowledge of good agricultural practices (cocoa)	Farmers were asked 12 multiple choice questions on good agricultural practices. Correctly answered questions correspond to the requirements of the UTZ Code of Conduct. The more correct answers a farmer, the higher the score for the individual question. For each question a score was derived on a scale between 1 and 10. The overall knowledge score was measured as an average of all scores for the individual scores.
Implementation of good agricultural practices (cocoa)	Farmers were asked 24 multiple choice questions on good agricultural practices. Correctly answered questions correspond to the requirements of the UTZ Code of Conduct. The answers were score related to the correctness of the answer. For each question a score was derived for each farmer on a scale between 1 and 10. The overall score for the implementation of good agricultural practices was measured as an average of all scores for the individual scores.
Satisfaction with livelihood	Farmer perception, 5-point Likert scale
Changes in needs (income, food, water, status, health, education, other)	Farmer perception based on open questions with qualitative answers possible.
Satisfaction with services of producer group	Farmer perception, 3-point Likert scale
Satisfaction with interventions of traders programmes	Farmer perception, 3-point Likert scale and open question

*Indicators addressed by the stakeholder questionnaires .P**Impact on livelihoods:***

- Perceived benefits by farmers and other stakeholders of UTZ certification (income, training, participation in producer groups, certification and related services).
- Evolution of farmers' and other stakeholders' incentives, needs, and challenges at different stages of the programme.
- Perceived changes in access to inputs (fertilisers, financing, becoming more creditworthy)
- Perceived impact of the programmes on food security, child labour, education, health, safety and how increased income is used
- Inclusiveness (are benefits reaching other member of the family?)
- Unintended impacts and understanding of how external factors affect farmers' performance. (e.g. assessment of quality of road infrastructure, quality of village health services and school attendance ratios, impact of cocoa reform).

Farming practices

- Impact on knowledge and use of GAPs
- Impact on quality, efficiency, business performance (market reward)
- Perception of farmers and other actors of cocoa productivity increase / decrease due to inputs

Organisational capacity

- Perception on professionalisation, bargaining power, ownership of the programme and interactions with government

Trust and communication flow

- Perception of farmers' loyalty to producer group or to trader
- Perception of farmers satisfaction with producer group services, benefits of being a producer group member, how premiums are distributed and invested

Attitude toward cocoa farming and risk

- Perception of farmers and other stakeholders of the opportunities for the future of the sector (e.g. will future generations continue cocoa farming?)

IDH CPQP Indicators

Number	Progress indicators (output)	Baseline	Overall Programme Target (2012-15)	Year Target (2012)	Cumulative progress (2012-15)	Definition of Indicator	Means of Verification
1	Result Area 1. Tangible improvements in ecology socio-economic conditions of production						
1.1	Progress indicators (output)	Baseline	Overall Programme)	Year Target (2012)	Cumulative progress (2012-15)	Definition of Indicator	Means of Verification
1.1.1	No. of producers trained in (GAP, GSP, GEP, GBP, and/or ICS and certification) modules - Men - Women					Producers represent only 1 member per household. Each household is required to select only 1 member to attend all the training modules. To consider a producer trained, he must have an attendance rate of at least ≥ 75% in at least one (1) training module, with a minimum of at least five (5) full days of training attended Training modules are: Good Agricultural Practices (GAP), Good Social Practices (GSP), Good Environmental Practices (GEP), or Good Business Practices (GBP), and/or ICS and certification modules.	Registration and tracking of attendance in training modules Attendance lists Certificates of attendance
1.1.2	No. of full training days attended by producers in GAP, GSP, GEP, GBP, and/or ICS and certification modules. - Men - Women					No.. of training full days attended by producers, divided by Male and Female in the following training modules: - GAP - GSP - GEP - GBP - ICS/Certification	Registration and tracking of attendance in training modules. Attendance lists. Certificates of attendance
1.1.3	No. of producers certified					Producers (individual cocoa farmer/household) apply and comply with industry recognised certification standards and are audited by independent/external auditors	ICS reports External certification audit report Certificates
1.1.4	Area (ha) certified					Number of hectares of all producers certified by industry recognised certification standards and are audited by independent/external auditors	ICS reports - External certification audit report - Certificates

Number	Progress indicators (output)	Baseline	Overall Programme Target (2012-15)	Year Target (2012)	Cumulative progress (2012-15)	Definition of Indicator	Means of Verification
1.2.1	Area (ha) of cocoa trees rehabilitated - rehabilitated - replanting - regenerated					Number of hectares of cocoa trees rehabilitated/regenerated through replanting, or successful side- and/or chuppon grafting. Assumption for calculation: 1 hectare = 800 trees. Replanted: No. of ha where seedlings are planted as replacements for old trees Rehabilitated: No. of ha where old trees have had side or chuppon grafting conducted to improve productivity Regenerated: No. of ha where cocoa GAP has been successfully applied to improve productivity, this includes: 1. Pruning conducted 2. Fertiliser applied 3. Regular harvesting 4. Sanitation practices applied	- Budwood distribution lists - Seedlings produced/distributed - Farmer records - Spot checks for a random stratified sample of producers (programme monitoring) for replanting, rehabilitation, and using GAP criteria questionnaires for regenerated areas.
1.2.2	Average volume (kg/ha) of fertiliser used per hectare of land - Compost - Organic Fertiliser - Inorganic Fertiliser					The Average volume (kg/ha) of compost, organic and/or inorganic fertiliser applied by producers per hectare of their cocoa producing areas. - Compost (Kg/Ha) - Organic Fertiliser ((Kg/Ha) - Inorganic Fertilisers (Kg/Ha)	- Fertiliser distribution lists - Farmer records - Spot checks for a random stratified sample of producers (programme monitoring)
1.2.3	Volume (mt) of cocoa produced - certified - non-certified					- MT of cocoa produced by all producers certified by industry recognised certification standards - MT of cocoa produced by all producers from non-certified areas	- Producer farm monitoring data - Spot checks for a random stratified sample of producers (programme monitoring) - ICS reports - Certificates - Trader and exporter data
1.2.4	Average yield (kg/ha/year) per hectare per year					Annual average calculation of kilograms of dried cocoa beans per hectare produced	- The starting yields for each producer is collected at the time they join the programme (baseline) - ICS data - Spot checks for a random stratified

Number	Progress indicators (output)	Baseline	Overall Programme Target (2012-15)	Year Target (2012)	Cumulative progress (2012-15)	Definition of Indicator	Means of Verification
							sample of producers (programme monitoring)
							- Trader/Exporter collection data from producers - Government data
1.2.5	Average humidity rate (%) that complies to industry recognised quality standards					The percentage of average annual production that complies with industry recognised standards. Country:_____ Standard:_____ E.g. Country: Indonesia Standard: SNI (Indonesian National Quality Standard 23.23/2008)	- The starting quality level of cocoa for each producer is collected at the time they join the programme (baseline) - Spot checks for a random stratified sample of producers (programme monitoring) - Trader/Exporter collection data at the buying point or from producers - Government data
1.2.6	School attendance rate (%) in the community					Percentage of target communities' children who attend school on a regular basis	- Government data
2.1.1	No. of private institutions offering business services to groups/organisations					The number of private institutions offering business services to producer groups/organisations - E.g. Banks providing financial products and/or credit, microfinance institutions providing micro-loans, NGOs providing support through training, inputs, finances etc., Business Development Service providers supplying training and advisory support, input suppliers providing inputs and training on use of inputs.	- Cooperation Agreements or Memorandum of Understanding between private institutions and government - Contracts
2.1.2	No. of producer groups/organisations supported and functional					The number of producer groups/organisations that have been established, trained, and/or supported by the programme. Functional groups have an elected management board with planned or ongoing activities and, where possible, legal identity approved by the respective government.	- Government documents (for legal identity, where possible) - Programme monitoring data

Number	Progress indicators (output)	Baseline	Overall Programme Target (2012-15)	Year Target (2012)	Cumulative progress (2012-15)	Definition of Indicator	Means of Verification
						Definitions: Established: this includes technical assistance for start-up, development and management of groups, and/or provision of inputs and/or equipment. Trained: As per training criteria for 1.1.1. Supported: this includes technical assistance for group management and/or provision of inputs and/or equipment.	
2.1.3	No. of business partners committed to integrating sustainability into their value chains					Value chain business partners of the CPQP programme partners, buying or supplying cocoa produced by the programme supported producers to or from the CPQP programme partners. I.e. small-holder cocoa enterprises, traders, processors, exporters directly involved in the CPQP partners' value chain.	- Cooperation Agreements - Memorandum of Understanding - Contracts - Business partners purchasing sustainable cocoa - Business partners that have indicated commitment to sustainable production through purchase of sustainable cocoa.
2.1.4	No. of producer groups/organisations selling certified cocoa to CPQP programme partners					The number of producer groups/organisations that sell their certified cocoa directly or through traders/exporters/processors to the CPQP programme partners	- CPQP programme partners data - Trader/exporter data - Programme monitoring data
2.1.5	No. of producer groups/organisations receiving credit					The number of producer groups/organisations that receive credit from traders/exporters, CPQP programme partners, and/or financial institutions	- CPQP programme partners data - Trader/exporter data - Programme monitoring data
2.1.6	Value (USD) of financial products provided to producer groups/organisations					Value (in USD) of loans, credit, and other financial products provided by traders/exporters, CPQP programme partners, and/or financial institutions to producer groups/organisations	- Financial institution data - CPQP programme partners data - Trader/exporter data

Number	Progress indicators (output)	Baseline	Overall Programme Target (2012-15)	Year Target (2012)	Cumulative progress (2012-15)	Definition of Indicator	Means of Verification
							- Programme monitoring data
2.2.1	Sales of certified cocoa from producer groups/organisations as a percentage of total authorised sales on certificate					What percentage of total certified cocoa sales in the producing country (measured in MT) is from programme supported producers to CPQP programme partners	- CPQP programme partners data - ICS reports and certifier data - Programme monitoring data
2.2.2	Volume (mt) of certified cocoa purchased by CPQP programme partners					Volume (mt) of certified cocoa purchased by CPQP programme partners from programme supported producers	- CPQP programme partners data - ICS reports - Programme monitoring data
2.2.3	Purchases (%) of certified cocoa, as a percentage of total cocoa purchases made by CPQP programme partners					Out of total cocoa purchases from programme supported producers by CPQP programme partners, what % is certified?	- CPQP programme partners data - ICS reports - Programme monitoring data
2.2.4	Additional jobs created in targeted cocoa sector value chain - At farm level - Seasonal - Full-time - Business Level - Temporary/Part-time - Full-time					Additional jobs created due to improvements in the cocoa business climate, increased supply and/or demand, improved productivity/quality, certification etc. Additional jobs may be created in traders/exporters, CPQP programme partners, producer groups/organisations, input suppliers, farm labourers, and financial institutions staff hired in relation to cocoa financial products	- At farm level: Survey conducted at beginning (baseline) and end of programme (impact) - Business Level: Data collected on an annual basis - Traders/exporters data - CPQP programme partners data - Producer groups/organisations data - Input suppliers data - Financial institutions data - ICS reports - Programme monitoring data

Number	Progress indicators (output)	Baseline	Overall Programme Target (2012-15)	Year Target (2012)	Cumulative progress (2012-15)	Definition of Indicator	Means of Verification
3.1.1	No. of non-private partners involved in the programme					Public universities, Government agencies, membership-based non-private organisations/entities in the cocoa sector	- Cooperation Agreements - Memorandum of Understanding - Contracts
3.1.2	No. of institutions/entities trained - public institutions/entities - private institutions/entities					Public or private institutions/entities, not including producer groups/organisations, trained in target areas. To consider an institution/entity trained, they must have received at least five (5) full days of training	- Registration and tracking of attendance in training modules and workshops - Attendance lists
3.1.3	No. of extension officers trained in producing countries - public institutions/entities - private institutions/entities					No. of extension officers trained in producing countries. - public institutions/entities - private institutions/entities To consider a producer trained, they must have an attendance rate of at least ≥ 75% in at least one (1) training module, with a minimum of at least five (5) full days of training attended	- Registration for workshops - Attendance lists
3.2.1	No. of local CPQP programme partner implementation structures operational.					The number of locally based offices/structures that are operational and used by CPQP programme partners to facilitate field-level programme interventions and promote on-the-ground activities to strengthen the cocoa sector development. This could include district-based offices, warehouses, processing centres etc.	- Verification of the use and support of these structures will be conducted on an annual basis through visitation by the CPQP Coordinator, alongside representatives from the relevant CPQP programme partners
3.2.2	No. of trained extension officers sharing knowledge in workshops with global cocoa stakeholders - public institutions/entities					The number of extension officers, both public and private sector, involved in cocoa sector development who participated in knowledge-sharing workshops with global cocoa stakeholders regarding Good Agricultural Practices (GAP), Good Social Practices (GSP), Good Environmental Practices (GEP), or Good Business Practices (GBP), ICS and certification.	- Registration for workshops - Attendance lists

Number	Progress indicators (output)	Baseline	Overall Programme Target (2012-15)	Year Target (2012)	Cumulative progress (2012-15)	Definition of Indicator	Means of Verification
	- private institutions/entities						- Workshop reports
4.1.1	No. of best practices developed and documented					The number of developed and documented best practices for cocoa production, post-harvest processing and storage, packaging, quality control, marketing, access to finance, and other relevant cocoa sector development issues	- Best practice documents
4.2.1	No. of best practices shared in sector (through websites, events, etc.)					The number of developed and documented best practices for cocoa production, post-harvest processing and storage, packaging, quality control, marketing, access to finance, and other relevant cocoa sector development issues shared with, and available to cocoa sector actors	- Availability of best practice documentation can be verified by availability online (websites of CPQP programme partners, as well as forums and membership based organisations) and availability of documentation at conferences/events
4.2.2	No. of regional cocoa forums established and recognised by the sector					The number of cocoa forums established at regional level to discuss and debate cocoa sector issues and provide credible advocacy for improvements in the enabling environment and enhance collaboration and shared vision among stakeholders	- Attendance lists from forums and documentation of the event results - Documentation of forum results shared with attendees and recommendations for action passed on to change agents, e.g. local and/or central Government and other major sector stakeholders

Table 13

Indicator measurement.

Indicators	Indicator measurement
Gross income from cocoa	Yearly production of all cocoa farms multiplied by the average price per kg for cocoa paid to farmers
Labour costs of cocoa production	All reported hours spent on cocoa production activities multiplied by the price of labour (2000 CFAF per day). Family labour costs are calculated using the same price as for hired labour. Not included are costs and time spent by farmers on training, communal 'shared' labour gangs, as lead farmers, on internal control systems and on auditing Farmers indicating zero labour costs were not included in the calculations
Input costs of cocoa production	Number of times a product is applied multiplied by unit multiplied by price per unit of input (fertilisers and crop protection products such as fungicide and pesticide) Time (opportunity costs) to become UTZ Certified and investing in PPE has not been taken into account in cost calculations
Total cocoa production costs	Labour + input costs Not included are costs of equipment and personal protective equipment, costs (in kind) of spraying gangs or communal 'shared' labour Time (opportunity costs) to become UTZ Certified and investing in PPE has not been taken into account in cost calculations
Net income from cocoa	Yearly production of cocoa from the main farm, minus total production costs for the main farm
Farm cocoa production efficiency	Economic and agronomic input/output ratio
Productivity	Yield per tree per hectare. Based on farmers report of their farm size. An alternative productivity result is based on the margin of error (70% of farm sizes were estimated, with on average farm size 7% over estimated)
Knowledge of good agricultural practices (cocoa)	Farmers were asked 12 multiple choice questions on good agricultural practices. Correctly answered questions correspond to the requirements of the UTZ Code of Conduct. The more correct answers a farmer, the higher the score for the individual question. For each question a score was derived on a scale between 1 and 10. The overall knowledge score was measured as an average of all scores for the individual scores.
Implementation of good agricultural practices (cocoa)	Farmers were asked 24 multiple choice questions on good agricultural practices. Correctly answered questions correspond to the requirements of the UTZ Code of Conduct. The answers were score related to the correctness of the answer. For each question a score was derived for each farmer on a scale between 1 and 10. The overall score for the implementation of good agricultural practices was measured as an average of all scores for the individual scores.
Satisfaction with livelihood	Farmer perception, 5-point Likert scale
Changes in needs (income, food, water, status, health, education, other)	Farmer perception based on open questions with qualitative answers possible.
Satisfaction with services of producer group	Farmer perception, 3-point Likert scale
Satisfaction with interventions of traders programmes	Farmer perception, 3-point Likert scale and open question

Annex 3 Stakeholders interviewed

Stakeholder type	Organisation*	Number of people interviewed	Location
Traders	ADM	1	Abidjan, Amsterdam & Geneva
	Cocaf Ivoire (Noble)	1	Abidjan
	CEMOI	1	Abidjan
	OLAM (Outspan Ivoire)	1	Abidjan
	NATRA	1	Phone/email
	Zamacom	1	Abidjan
	Barry Callebaut	1	Abidjan
	Cargill	1	Abidjan & Amsterdam
Focus groups	CACEP	32	Diegonefla
	COOPADA	10	Dagadji (San-Pedro)
	CAESA	12	Djangobo (Abengourou)
	Coopagli	7	Gligbéadji
	LCAG	12	Dioligbi (GUITRY)
	Anouanzè de Duékoué	9	Bohoussoukro (DUEKOUE)
	Allouata	9	Nizahon (GUIGLO)
	Fiédifouê	10	Paulkro (DALOA)
	C.A.E.T.H (C.A.E.T.D)	10	BOWALY (DALOA)
	ECOOPAD	10	Zébra (DALOA),
Producer Group managers	COOPADA	1	Dagadji (San-Pedro)
	C.A.E.T.H.	1	Bowaly (DALOA)
	COOPAGLI	1	Gligbéadji
	CAESA	1	Djangobo
	LCAG	1	Guitry (Dioligbi)
Teachers & school directors	CAESA	1	Djangobo
	-	1	EPP MAHINO II
	COOPAGLI	1	Epp Gligbeadji
	LCAG	1	Dioligbi (GUIYTY
Village chiefs	LCAG	1	Dioligbi (Guitry)
	CAESA	1	Djangobo
Farmers (for most significant change Stories)	LCAG	1	Guitry (Dioligbi)
	Fiédifouê	1	Paulkro (DALOA)
Service providers	ANADER	2	Abidjan
	Solidaridad & REC/WAFF	5	Abidjan & Amsterdam
	Anader	1	At co-op Allouata in Nizahon (GUIGLO)

*NOTE: Names of individual interviewees have not been provided to maintain confidentiality.

Annex 4 Statistical analyses

The **mean** (average) is the sum of all numbers divided by the number of numbers. The **median** is the 'middle value' and provides understanding the central tendency of a set of statistical scores. The mean is a popular measure of a mid-point in a sample when the sample has a normal range; it has the disadvantage of being affected if any single value is much higher or lower compared to the rest of the sample. This is why the median is also presented as an alternative measure of a mid-point of the sample, especially where the sample has a skewed distribution.

The **standard deviation** shows how much variation or dispersion from the average exists. A low standard deviation indicates that data points tend to be very close to the mean (also called expected value); a high standard deviation indicates that the data points are spread out over a large range of values.

Cross tabulation allows an examination of the frequencies of observations belonging to specific combinations of categories on more than one variable. By examining these frequencies, relations between cross tabulated variables can be identified.

A **t-test** evaluates the differences in means between two groups. The groups can be independent or dependent. T-tests can be used even if the sample sizes are very small as long as the variables are approximately normally distributed and the variation of scores in the two groups is not reliably different.

A **correlation coefficient** measures the strength of (linear) association between two variables. The value of a correlation coefficient ranges between -1 and 1. The greater the absolute value of a correlation coefficient, the stronger the linear relationship. The strongest linear relationship is indicated by a correlation coefficient of -1 or 1. The weakest linear relationship is indicated by a correlation coefficient equal to 0. A positive correlation means that if one variable gets bigger, the other variable tends to get bigger. A negative correlation means that if one variable gets bigger, the other variable tends to get smaller.

Regression analysis is a statistical process for estimating relationships among variables. It focuses on the relationship between a dependent variable and one or more independent variables, to help understand how the typical value of the dependent variable (or 'criterion variable') changes when any one of the independent variables is varied, and the other independent variables are held fixed. A regression does not demonstrate causal effects.

Statistical significance indicates that a difference or relationship exists. Statistically significant relationships can be strong or weak. The statistical significance of a result is the probability that the observed relationship (e.g. between variables) or a difference (e.g. between means) in a sample occurred by pure chance (‘luck of the draw’), and that in the population from which the sample was drawn, no such relationship or differences exist. The p-value represents a decreasing index of the reliability of a result. Results that yield p 0.05 are considered borderline statistically significant, although this level of significance still involves a pretty high probability of error (5%). Results that are statistically significant at the p 0.01 level are considered ‘statistically significant’, and p 0.05 levels are deemed 'highly' significant.

Annex 5 Key data correlations between length of UTZ programme participation and outcome and impact indicators

Table 14

Correlations between length of programme participation and economic outcome/impact indicators.

Indicator	Significant correlation between length of UTZ programme participation and outcome indicators + statistically significant positive correlation - statistically significant negative correlation 0 no statistically significant correlation
Cocoa production (main farm)	0
Total labour costs	0
Total input costs	0
Input costs (fertilisers)	0
Input costs (pesticides)	0
Input costs (fungicides)	0
Input costs (herbicides)	0
Input costs (planting material)	0
Total production costs	0
Productivity (main farm)	0
Productivity (all farms)	0
Cocoa production efficiency	+
Gross income from cocoa (main farm)	+
Gross income from cocoa (all farms)	0
Net cocoa income (main farm)	+
Gross income from other sources	0
Gross total household income	0
Cocoa quality	0
Satisfaction with livelihood	0

Table 15

Correlations between length of programme participation and knowledge and implementation of GAPs.

Indicator	Significant correlation between length of UTZ programme participation and outcome indicators + statistically significant positive correlation - statistically significant negative correlation 0 no statistically significant correlation
Overall knowledge level	0
Overall level of implementation of GAPs	+
Record keeping	+
Knowledge of child labour issues	0
Implementation of child labour practices (children assisting in 12 cocoa production practices)	0
Knowledge on soil conservation practices	0
Implementation of soil conservation practices	0
Knowledge on water conservation practices	0
Implementation of water conservation practices	0
Knowledge on cocoa production practices	0
Implementation of cocoa production practices	0
Knowledge on health related practices (PPE use)	0
Implementation of health related practices (PPE)	0
Implementation of waste management practices	0
Implementation of biodiversity conservation practices	+
Implementation of post-harvest practices	0

Annex 6 Questionnaires

Survey instruments

1. Semi-structured Interviews with different stakeholders in the chain (see list indicated earlier)
   The enumerator explained the aim of the research, the feedback mechanisms in the form of a verification meeting, reports and farmer info sheet. Photos, when permitted, were taken and notable quotations written up. Compared to the farmers' questionnaire, questions in the semi-structured interviews were open-ended and tailored to the particular relationship between the respondent and UTZ certification. The objective of semi-structured interview was to gain a range of insights on both quantitative and qualitative information from a sample of respondents, and following up with probes to get in-depth information. The enumerator sought to confirm what was already known from secondary research, and to fill in information gaps. The information obtained from these interviews was not just to provide answers, but also the reasons for the answers. The semi-structured interviews allowed to develop direct and indirect approaches to address sensitive labour issues, gathering data on workers on farms, school attendance, social interaction, perceived benefits and challenges. The semi-structured interview guide detailed a clear set of instructions for the enumerators in order to provide reliable, comparable qualitative data. The average length of the individual interviews was 1.5 hour. An example is provided below.
   http://edepot.wur.nl/313480

2. Focus group meetings with different stakeholders
   The purpose of focus group meeting was primarily to explore and understand how inclusive the UTZ Certified cocoa programme in Côte d'Ivoire is, what future opportunities are, and the extent that knowledge and benefits reach others (family members, workers etc.) on certified farms. The average time taken to conduct a focus group was 1.5 hour. An example of focus group semi-structured questionnaire is provided below.

3. Story harvesting, 'change story' technique
   Only a very small number of farmers participated in change story interviews. Selection was upon a random basis and voluntary for farmers. Farmers were asked which were the most major changes experienced. This was supported by photos. The average length of the interview was 1 hour.

4. Observation of the context
   The survey also uses data from direct and photographic observations recorded by the survey team on the living environment (road access and quality, housing, surrounding environment (forests, fields, degraded land), village schools, general health of farmers, observed child labour, cocoa fields (farm work and presence of shade trees) and processing activities.

Annex 7 Databases

Digital version in excel.

Annex 8 Detailed methodology

Impact logic

An impact logic (also known as a theory of change) is a tool to understand and visualise the rationale behind a programme, the causal relationships between a programme's activities and its intended outcomes. IDH's theory of change, developed for the CIP1 and used also for the CPQP, was used. The impact logics developed retrospectively with UTZ, Solidaridad and Cargill were also used to understand the interventions and aims of their interventions. The logic depicts the entire cocoa programme and is not specific to Côte d'Ivoire. Impacts are determined by external factors as well. However external factors are not explicitly a part nor are displayed in the impact logic. Notable assumptions implicit in logic include:

- The main target group to be reached by the programme are all smallholder cocoa farmers. In practice these small holder farmers are members of producer groups. The target group is not further specified.
- The main impact of certification is at the level of farmer households and producer groups. In Côte d'Ivoire certification is on a group level, with registered certificate holder farmers who are member of a group being certified, but individual farmer certification not yet occurring. Certification of traitants and pisteurs is foreseen in future.
- Certification provides in most (but not necessarily all) cases a price premium and direct economic benefit and improved market access as farmers can supply a producer group which often sells to a trader that has assisted it to become certified.
- The level of the premium and how it is spent at producer group level is decided at producer group level. UTZ anticipates that the premium is be invested or distributed in a way that benefits all certified producers (in cash or in kind).
- Bean quality is expected to be influenced by the 2012 Ivorian cocoa market reform (with stricter quality standards on moister levels expected to improve drying and fermentation practices) but this may only be apparent in future assessments.
- The certification process (including implementation of the code requirements, training, creating and strengthening of farmer groups, setting up an ICS) also provides benefits by enabling farmers to gain additional economic benefits (increased yields, better quality, efficient use of inputs, better management practices) and social benefits (increased negotiating power, access to inputs and services). These social and economic benefits lead to improved profitability (income) and contribute to long-term economic viability and resiliency of farms.
- Inspections and peer pressure contribute to implementation of sustainable practices learned in training.
- Professional farm management and risk management contributes to improved farm resilience by reducing farmer's vulnerability to external shocks (such as adverse weather affecting yields).
- The phasing of activities to certify and then maintain certification and also the fact that different practices in implementing certification lead to different results at different moments. This means that different incentives and impacts on farmers can be expected at different stages in the process of certification. Thus farmers at different stages in the certification programme experience different impacts. This is not only related to the increased number of criteria with which farmers need to comply, but also to how long farmers are participating in a programme (e.g. different practices have different effects on productivity; some take more time).
- Integrated pest management (IPM) practices and controlled and informed use of crop protection products is also expected to contribute to improved biodiversity conservation.

Expected outcomes and impacts

The main impacts expected are economic, social and ecological. These are:

Economic

- Due to training and certification, good agricultural practices and meeting the criteria leading to increased productivity, with a better crop leading to better prospects for men, women and children
- Improved crops, lead to increased production, leads to increase of income
- Training leads to farmers being better business people
- Increased income is invested in the farm (production) and/or improving the standard of living (housing, sanitation, healthcare, education, etc.)
- Improved farmer profitability, together with improved farmer resilience, contributes to improved long-term economic viability of farms.

Social

- Better working conditions and respect for workers and children's rights contribute to a better livelihood and improved standard of living.
- Better income, leads to better life, assuming that income is divided by gender in a more equal way.
- Training and awareness rising, peer pressure and inspections mean that labour rights are respected and prevent child labour, in line with ILO standards (such that children are not conducting hazardous or heavy work, or working during school hours etc.). These factors -together with improved income- contribute to children's school attendance.
- Training and criteria on safe practices and safe handling and storage of agrochemicals and agrochemical waste lead to healthy and safe working and living conditions. Together with better access to emergency and primary healthcare (for specifics please see code requirements), this contributes to improved health.

Ecological

- Training, good agricultural practices and criteria on safe practices and safe handling and storage of agrochemicals and agrochemical waste, cocoa waste management and reduction lead to less environmental impacts than conventional production and a better environment, where the quality of water and soil is maintained and improved and natural habitats and biodiversity on and near farm is protected and restored.
- Improved productivity and efficiency contribute to reduced pressure on land and reduced GHG emissions per unit of produce.

Methodological strengths, weaknesses and limitations

As the main primary data collection method has strengths and weaknesses in terms of the validity of conclusions that can be drawn, four criteria were used to assess this method (Ton et al. 2011). The strengths and weaknesses, and resulting methods proposed to countervail weaknesses are presented in Annex 8. In section 1 or Chapter 8, recommendations are developed for improvement of this type of research.

Threats to validity of conclusions	Study ambition	Strengths	Assessment of method regarding validity of resulting conclusions	Additional methods to countervail weakness
Construct validity: how generalisations are made from the categories used in the evaluation to broader units of representation.	Representativeness of the intervention group Implies that comparable knowledge of Ivorian cocoa farmers is available to enable a comparison.	Sampling is robust and sample size is sufficiently large to allow statistical analysis of target groups by regions, phases and control group. Other stakeholders included in the focus groups	Moderate Limited and inconsistent data is available for the main farmer characterises and some other environmental indicators (perceptions rather than field based measurements of soil and water quality for which casual perception which may be inaccurate and for which changes or impacts only may be perceptible after longer time periods.	Literature review and benchmarking to compare target, intervention group Verification meeting with traders and farmers to obtain their feedback on findings and if/how the farmers are different form their experience, also to source additional data.
Internal validity: the way causality is attributed in the evaluation. This refers to the logic behind the observed links and explains why and how interventions contribute to the observed change.	The impact logic was developed to make explicit how economic, social and environmental outcomes were expected to result from interventions made as part of the UTZ Certification programme.	Approach captures perception of farmers and stakeholders on Indicators of change, causality and attribution.	Moderate Lack of baseline and multiple interventions (outside of certification) to target group make attribution of causality difficult. Many similar interventions to those made during certification were also made prior to certification, of which the impacts have long time scales to occur (e.g. impact of tree regeneration) making very causality difficult to attribute.	Traders interviews to obtain data on their and other interventions Literature review to obtain data on external influences and interventions which may influence indicators. Literature review and benchmarking to compare target, intervention group This study will act as a baseline for future impact assessments. It should allow a better interpretation of causality and testing of impact logic.
Statistical conclusion validity: the way inferences about links are made in data-set observations. This emphasises the need to comply with proven methods to estimate association or correlation between variables.	Representative sample group of farmers from each trader and control group. Minimal risk of spillover and contamination due to selection criteria. If occurred, would be captured in the questionnaire.	The triangulation between qualitative and quantitative data confirms and helps explain conclusions reached from the statistical analysis.	Good Sufficient size sample of farmers for each trader, control group and farmers in each agro-ecological zone. Differences in affiliation than indicated on the UTZ list resulted in some changes in number of interviews per trader, however each trader, control group and agro-ecological zone are sufficiently covered.	IDH provided additional funds to ensure that a statistically valid sample size of producer groups linked to all traders was interviewed.
External validity: the way that findings are generalisable to other persons, times and contexts. This requires being precise about the settings, subjects, and contexts.	Study would be generalisable to all UTZ Certified farmers. Note: the results are not intended to be generalisable to other certification schemes or to all non-certified farmers in Côte d'Ivoire.	The large sample size and methodology means that the results should be generalisable to other UTZ Certified producers and producer groups. The focus groups provided insights into if the individual farmer data was generalisable to other farmers in a community.	Good	Literature review specifically sought results of other certification schemes in Côte d'Ivoire to verify external validity.

Limitations of the study include:

1. That the budget and timescale indicated in the work plan (see Annex 1) did not allow major changes to be made to the methodology to respond to recommendations made by WUR for the UTZ Ghana study or based on similar experiences e.g. COSA and the Ghana MIT study (Hainmueller et al. 2011). Thus the basis of the study remains a one-off questionnaire to farmers. This method has inherent problems as it relies on short-term memory recall by farmers and possible recollection error, no or poor recordkeeping, interpretation bias and perceptions, particularly of environmental changes which often occur at different timescales compared to livelihood changes (Angelsen et al. 2011). This means the data are subject to recollection error and interpretation bias. Alternative methods are generally more costly and require longer time periods (i.e. one to two years) and continued agreement with respondents to participate.
2. The tight time schedule in setting up the survey, which didn't allow all project groups to be well informed before the survey;
3. IDH came late into the arrangements with UTZ and Solidaridad, leaving no time to adjust the indicators and methods to incorporate all the CPQP indicators.
4. Despite informing traders and cooperatives of the survey and its aims in advance, problems with obtaining permission to interview producer groups and details of members for the farmer survey were encountered at trader and cooperative level, causing substantial delays of around two months and additional travel costs and areas were revisited once permission had been obtained.
5. The recentness of the last phase of certification, making it difficult for farmers to accurately respond about changes;
6. Selection of producer groups and farmers for the control group was problematic. Even after checking at the commencement of the interview if the farmer was not certified, some farmers indicated later in the questionnaire that they had had training associated with certification. This concerned farmers in groups which had initially started working with traders on certification but did not continue in the programme and/or their group was no longer affiliated to the specific trader.
7. The long questionnaire due to large number of indicators covered. This occasionally fatigued farmers as well as took their valuable time.
8. The limited time and opportunity to build the skills of the enumerators to conduct the stakeholder and focus group questionnaires resulted in a lower level of understanding and ability to collect some of the stakeholder data. This combined with logistical problems resulted in fewer stakeholder interviews than planned.
9. Inconsistency in the dataset can shed doubts on the trustworthiness of the answers given. For example, some questions were supposed to be skipped after the respondent gave a certain answer to the previous question, but in the dataset the respondent did answer the question.
10. Farmers occasionally appeared confused about their status of receiving training for UTZ certification, being UTZ Certified, or being in the process of becoming UTZ Certified. With effort and assistance from UTZ and the enumerators, farmers were assigned into the correct categories.
11. Farmers also indicated differences between data provided by UTZ and traders and their actual links. Four producer groups indicated that they had disagreements with traders with whom they originally started certification and training and some had commenced selling to other traders.

Data collection and analysis methods

To respond to the terms of reference (ToR), the research was organised using different data collection tools. To prepare the enumerators for data gathering, a practical week long training was organised. This focussed on introducing the survey team (nine enumerators and two supervisors) to the study, the IDH and UTZ Certified programme in Côte d'Ivoire and the tools to be used. This ensured common comprehension on the local names and terminologies used by cocoa farmers, types of tenure, the activities that cocoa farmers typically go through to produce cocoa, and the equipment and tools used in cocoa production. The enumerators were introduced to the different survey instruments and trained on interviewing techniques, ensuring sensitivity to the local context and confidentiality. The questionnaires were discussed and refined. During the discussion, enumerators were trained to interpret the questions into local languages in which the interview was to be conducted. This process

of translation, together with role plays carried out by the enumerators was instrumental in the extensive revision and reduction of the length of the questionnaires. The enumerators were also trained on data entry and photography skills. Following the workshop, the revised questionnaires were tested with farmers and a producer group manager in a cocoa growing community near Soubré in Bas Sassandra region. All enumerators and supervisors participated in the test. Afterwards, the group discussed the interviews and commented upon the process of interview, farmer selection, questionnaire structure, and the arrangement of questions. WUR finalised the questionnaires based on the comments of the survey team. The questionnaires are provided in Annex 6.

The main methods of collecting quantitative and qualitative data (i.e. farmers and other stakeholder's perceptions of impacts) was through interviews using semi structured questionnaires with farmers and other stakeholder's in the UTZ Certified programme, combined with on-farm and village observations, and quantitative data made available by traders and UTZ Certified. The vast majority of the data was collected in Côte d'Ivoire by nine enumerators guided by Roger Tanoh and Abel Galo of A & CV in Côte d'Ivoire in between November 2012 and July 2013. Additional interviews were held by phone and with traders in Abidjan and in the Netherlands by the WUR team in the same period. The enumerators visited the individual farmers with a structured ''producer'' questionnaire to gather data on the general characteristics of farmers, their farms and households; cocoa production; productivity and efficiency; production costs; certification; working conditions; environmental aspects; knowledge and implementation of practices; revenues and livelihoods; and profits and rewards.

The interviews with other stakeholders aimed to gather their perceptions of benefits and challenges with respect to the impact of the UTZ certification, and any available quantitative data. Shown in indicated in Table 4, these semi-structured interviews were conducted using dedicated questionnaires for producer group managers, traders, school masters, village chiefs, training and service providers and local authorities, and change story telling with selected farmers. The mix of techniques was used to triangulate some of the results of the producer interviews and to obtain a more in-depth understanding of perceived changes, particularly on sensitive topics (such as income and child labour) and potential groups, the contextual factors and unintended effects. The focus groups in villages also provided perceptions of people in cocoa communities who are not necessarily cocoa farmers. This qualitative analysis complements the more quantitative data from producers, provides lessons learned and distils change stories. It is also the source of illustrative quotations presented in the report.

Observations were made during all interviews. Photos were made at producer group locations and on farms. These have been provided digitally with a small selection included for illustration in the report.

Literature on the UTZ Certification programme in Côte d'Ivoire was gathered, this includes the UTZ Code of Conduct (UTZ Certified 2009b; UTZ Certified 2009c; UTZ Certified 2010), definitions (UTZ Certified 2009a), and banned crop protection products (D'IVOIRE 2008; UTZ Certified 2012b). Data on trader's activities was further sourced via the internet to complement the trader interviews. Further literature was reviewed to assess the possibility of retrospectively providing a baseline and benchmarking the selected indicators. This data was used to assess whether the research results in this study reflect the general situation of Ivorian cocoa farmers. The references are provided in the text and in the references in chapter 9. An overview of the benchmarking documents is provided in Annex 10.

The 99 farmer cocoa fields were measured using a GPS together with the farmer following the producer interview and were then compared to the farm size previously stated in the interview. The detailed results are presented in Annex 9.

The producer survey data were first entered into Excel and then exported to the statistical programme STATA[27] for analysis. For the indicators, descriptive statistics such as the mean, median and standard deviation are presented, explained in Annex 4. Where relevant, descriptive statistics also show

[27] StataCorp, 2007. Stata Statistical Software: Release 10. College Station, TX: StataCorp LP.

maximum and minimum values. Control group farmers were compared with those participating in the UTZ Certification programme, and groups in different phases of certification were compared amongst each other. Within the farmers participating in the UTZ Certified Programme, a distinction was made between those certified and those in the process of certification, but non-certified. Farmers belonging to producer groups in different agro-ecological regions were also compared on key indicators such as knowledge on sustainable production, production, and income through cross-tabulation, pairwise t-test and regression analysis, presented in Annex 13 and the terms explained in Annex 4.
A farmers' knowledge level was calculated using a range of questions in the producer questionnaire farmer on good agricultural practices. Responses were scored on a scale from 0 (incorrect) to 1 (wholly correct). The higher the number, the more farmers know about good agricultural practices. Farmer's proficiency was also tested through different questions on how they implement farm practices, and connecting a score to their answers based on whether their answer corresponded to good agricultural practices standards in the UTZ Code of Conduct. A farmer's proficiency in implementing good agricultural practices was measured on similar scale from 0 to 1. The higher the number, the higher the knowledge level.

To account for both fixed and random effects that cause variations in knowledge and implementation scores, multilevel mixed-effect linear regression was used in which variables such as age, gender, and level of education were used to estimate fixed effects. The agro-ecological zone indicator was used to group variable to address random effects that may be associated with climate and soil type. Correlations between variables and the length of participation in the programme were also conducted. Where statistically significant, this is mentioned in the text, and shown in Annex 5 and Annex 13. Differences can but small or large, but not significant (with 90% confidence interval), and are mentioned but do not allow conclusions to be drawn.

Data from interviews was cross-checked with the results of the producer surveys and literature. The preliminary results of the analysis were presented and validated in a workshop with representatives from UTZ, IDH and Solidaridad in Amsterdam in October 2013 and with seven representatives from trader companies, IDH, one service provider and five producer group managers in a one day workshop in Abidjan in October 2013. External influences, anticipated impacts and lessons learned were also discussed in interactive working groups during the verification workshop.

Photo 2 *Members of the WUR and A & CV research team, Soubré, November 2012.*

Photo 3 *Data collection: interview using the producer questionnaire.*

External, influencing factors

The CPQP is not implemented in isolation. Many of the initiatives implemented by traders participating in the CPQP have similar aims intended impacts, which could influence CPQP activities There are also influencing factors over which IDH and partners have little or no control. The following factors have been shown in literature, and were reiterated in the verification meeting and in trader interviews, to influence farmers' productivity, incomes, and livelihoods:

- A farmer's age, gender, and education level, which influences knowledge and skills, and ability to participate in and benefit from training and support activities (Waarts et al. 2013)
- Difficulties in accessing credit, experienced by all farmers and farmer groups (Nyemeck et al. 2007).
- The weather, which can strongly positively or negatively affect crop disease, productivity and product quality (Eberhard Krain 2011; Läderach 2011).
- Differences in the suitability of soil, altitude and climate across Côte d'Ivoire (Läderach 2011).
- The availability and quality of government extension services (Ayenor et al. 2007; Baah et al. 2009; Gbêhi and Leeuwis 2012; Paschall and Seville 2012).
- The lack of physical infrastructure, which makes access to markets difficult (Kessler et al. 2012).
- Land and crop tenure arrangements can dissuade farm managers from investing in planting trees and limit farmer's access to expand their farm or to acquire new land (Gray and Kevane 1999; Dormon et al. 2004).
- The 2010-2011 crisis in Côte d'Ivoire, which led to migration and in some cases abandonment of cocoa farms in conflict areas (Guesnet et al. 2009).
- The 2012 Ivorian government reform that fixed farm-gate and export prices of cocoa (CTA 2012).
- Global demand and fluctuating world market prices for cocoa and other cash crops grown by farmers, such as rubber, oil palm, and coffee, affecting their investment in cocoa (Koning and Jongeneel 2006).

These factors were taken into account in the interpretation of the results of the study to help explain impacts found and possible causal links.

Indicator measurement

Indicators	Indicator measurement
Gross income from cocoa	Yearly production of all cocoa farms multiplied by the average price per kg for cocoa paid to farmers
Labour costs of cocoa production	All reported hours spent on cocoa production activities multiplied by the price of labour (2000 CFAF per day). Family labour costs are calculated using the same price as for hired labour. Not included are costs and time spent by farmers on training, communal 'shared' labour gangs, as lead farmers, on internal control systems and on auditing Farmers indicating zero labour costs were not included in the calculations.
Input costs of cocoa production	Number of times a product is applied multiplied by unit multiplied by price per unit of input (fertilisers and crop protection products such as fungicide and pesticide) Time (opportunity costs) to become UTZ Certified and investing in PPE has not been taken into account in cost calculations
Total cocoa production costs	Labour + input costs. Not included are costs of equipment and personal protective equipment, costs (in kind) of spraying gangs or communal 'shared' labour. Time (opportunity costs) to become UTZ Certified and investing in PPE have not been taken into account in cost calculations.
Net income from cocoa	Yearly production of cocoa from the main farm, minus total production costs for the main farm
Cocoa production efficiency	Economic and agronomic input/output ratio
Productivity	Yield per tree per hectare. Based on farmers reports of their farm size. An alternative productivity result was not presented in the report but could be used, Only 30% of farmers had measured their farm size, the remaining 70% were estimates. On average farmers over estimated their farm size by 7%.
Knowledge of good agricultural practices (cocoa)	Farmers were asked 12 multiple choice questions on GAPs. Correctly answered questions correspond to the requirements of the UTZ Code of Conduct. The more correct answers a farmer, the higher the score for the individual question. For each question a score was derived on a scale between 1 and 10. The overall knowledge score was measured as an average of all scores for the individual scores.
Implementation of good agricultural practices (cocoa)	Farmers were asked 24 multiple choice questions on GAPs. Correctly answered questions correspond to the requirements of the UTZ Code of Conduct. The answers were score related to the correctness of the answer. For each question a score was derived for each farmer on a scale between 1 and 10. The overall score for the implementation of good agricultural practices was measured as an average of all scores for the individual scores.
Satisfaction with livelihood	Farmer perception, 5-point Likert scale
Changes in needs (income, food, water, status, health, education, other)	Farmer perception based on open questions with qualitative answers possible.
Satisfaction with services of cooperative	Farmer perception, 3-point Likert scale
Satisfaction with interventions of traders programmes	Farmer perception, 3-point Likert scale and open question

Annex 9 GPS measurement results

Farmer number	Agro-ecological zone	Area declared (hectare)	Area measured	Differential	%
87	E	1	1	0	100%
107		2	1	1	50%
116	E	0.5	0.6	-0.1	120%
156		2.5	3	-0.5	120%
160		4	3	1	75%
0-		11	7	4	64%
189		2.5	3	-0.5	120%
362		3.5	3	0.5	86%
321	M	1	0.78	0.22	78%
342	M	2.5	2	0.5	80%
366	M	2	2	0	100%
406	M	3	3	0	100%
413	M	1.5	1	0.5	67%
300	E	3	3	0	100%
301	E	2	2	0	100%
313	E	2	2	0	100%
320	E	2	2	0	100%
323	E	Didn't know	2	-2	
345	E	3	3.5	-0.5	117%
371	E	2	2	0	100%
379	E	3	3	0	100%
404	E	10	5	5	50%
405	E	4	2	2	50%
433	E	2	2	0	100%
449	E	3	3	0.0	100%
168	E	1.5	1	0.5	67%
555	E	2.5	2	0.5	80%
268		3	3	0.0	100%
69	E	3	1.09	1.9	36%
263	E	2	1.32	0.7	66%
264	E	12	2.32	9.7	19%
266	E	12	1.06	10.9	9%
279	E	10	6.02	4.0	60%
281	E	5	5.24	-0.2	105%
282	E	5	4.14	0.9	83%
284	E	2	3.02	-1.0	151%
288	E	8.5	7.6	0.9	89%
298	E	4	3.28	0.7	82%
299	E	7	4.79	2.2	68%
304	E	10	5.11	4.9	51%
305	E	1	4.28	-3.3	428%
306	E	2	1.7	0.3	85%
308	E	5	1.45	3.6	29%
309	E	3	2.28	0.7	76%
310	E	4.5	18.77	-14.3	417%
311	E	6	1.09	4.9	18%
318	E	0.5	0.95	-0.5	190%
319	E	0.5	6.48	-6.0	1296%
320	E	2	5.16	-3.2	258%
78	E	2	3.14	-1.1	157%
79	E	6	1.09	4.9	18%
80	E	2.5	1.6	0.9	64%
81	E	2.5	4.12	-1.6	165%
538	G	9	8	1.0	89%
539	G	13	11	2.0	85%
540	G	6	5.5	0.5	92%
548	G	2	2	0.0	100%
549	G	8	7	1.0	88%
550	G	8	7.5	0.5	94%
551	G	4	4	0.0	100%
425	G	1	4.5	-3.5	450%
541	G	2.5	2.5	0.0	100%
542	G	6	5.4	0.6	90%

Farmer number	Agro-ecological zone	Area declared (hectare)	Area measured	Differential	%
543	G	15	12	3.0	80%
544	G	4.5	4.5	0.0	100%
545	G	5	5	0.0	100%
546	G	2.5	2.5	0.0	100%
547	G	4	4	0.0	100%
5		10	11	-1.0	110%
48		4.8	6	-1.2	125%
211		0.6	1.5	-0.9	250%
216		3.45	3.5	0.0	101%
217		3.5	3.5	0.0	100%
223		5.18	7	-1.8	135%
224		1.3	10	-8.7	769%
228		4.46	6	-1.5	135%
231		4	4	0.0	100%
83		1	2	-1.0	200%
94		2	5	-3.0	250%
111		2	2	0.0	100%
118		2	2	0.0	100%
150	E	2	2	0.0	100%
188		5	4	1.0	80%
191		4	3.5	0.5	88%
247		0.55	1	-0.5	182%
262	E	3	2.5	0.5	83%
269		2	1.89	0.1	95%
303		2	2	0.0	100%
314		2	3	-1.0	150%
54	E	6	5.16	0.8	86%
55	E	6.5	6	0.5	92%
56	E	2	1.11	0.9	56%
57	E	4.5	4.94	-0.4	110%
58	E	1	3.19	-2.2	319%
59	E	2	2.6	-0.6	130%
118	E	3	3	0.0	100%
120	E	6.5	2.86	3.6	44%
561	E	1.8	1.9	-0.1	106%
562	E	2	1.8	0.2	90%
Total 99	E= G= M=	Area declared	Area measured	Differential	%
Average		3.97	3.70	0.23	93%
%				107%	
median		3	3	0	1
std dev		3.2	2.9	3.0	1

Annex 10 Overview of benchmarking data

Study name	
Gockwiski & Sonwa, 2008 (date of survey 2001-2002) (Gockowski and Sonwa 2008)	
Biodiversity conservation and smallholder cocoa production systems in West Africa with particular reference to the Western Region of Ghana and the Bas Sassandra region of Côte d'Ivoire. West Africa with particular reference to the Western Region of Ghana and the Bas Sassandra region of Côte d'Ivoire	
Indicators	**Results**
Countries	4
Cameroon, Ghana, Côte d'Ivoire, Nigeria	
# villages	337
# Household heads	4426
# Household heads producing cocoa	4034
	Côte d'Ivoire t
Average harvested per household (ha)	5.27
Yield (kg/ha)	352
fungicide cost (USD/ha)	4.05
insecticide cost (USD/ha)	42.4
fertiliser cost (USD/ha)	5.21
seed garden hybrids (%)	12
local unimproved varieties	88
mix of local and seed garden hybrids	n/a
Shade levels by country and region	
Ghana	2
	45.2
	52.7
Côte d'Ivoire	24.4
	48.1
	27.5

Study name	
KPMG cost benefit analysis (GBCG 2012; KPMG 2012b)	
Indicators	**Results**
Analysis of 3 certification initiatives Fairtrade, UTZ and Rainforest Alliance	
In our model, certification is represented as an intervention on the farmer/co-op profit and loss account (P&L) for an archetypal farmer/co-op, representing a particular segment of producers, which provides us with information for our base model. The base model was developed and populated with data from interviews with stakeholders in Ghana, Côte d'Ivoire and Europe, a previous study from KPMG (2011) for IDH. The Sustainable Trade Initiative and literature research that has been issued since the model inception (Ruf et al., 2012) This means a business case for certification exists, even when productivity improvement is not attributed to certification.	
Base Yield	kg/ha
Yield increase	with fertiliser use over 3 year period from Ruf et al, 2012.
yield in final year	kg/ha
farm size	ha
group chum	% farmers leaving group per year
retroactive certification	# of years
grant funding	$ per certified ton
grant funding period	# of years
cost of pesticide	$/ha/year
cost of fertiliser	$/ha/year
labour day-rate	$/day
work done by farmer	% of total amount of work
initial farmer time investments	hours
farmer time for ICS	hours per week
farm gate price	% of export price
market price	$/1000kg
time of selling certified cocoa after first investment	# of years
group size	# of group members
group forming	$/group
Base Yield	kg/ha
Yield increase	with fertiliser use over 3 year period from Ruf et al, 2012. 89% G, 101% CdI
yield in final year	kg/ha
farm size	ha
group chum	% farmers leaving group per year
retroactive certification	# of years

grant funding	$ per certified ton	
grant funding period	# of years	
cost of pesticide	$/ha/year	
cost of fertiliser	$/ha/year	
labour day-rate	$/day	
work done by farmer	% of total amount of work	
initial farmer time investments	hours	
farmer time for ICS	hours per week	
farm gate price	% of export price	
market price	$/1000kg	
time of selling certified cocoa after first investment	# of years	
group size	# of group members	
group forming	$/group	
certified content	% per group of total	30% RA, 40% UTZ, 100% FT
cost of certification born by actor	% cost born per actor group	94% co-ops & producers
cost of certification	us/ton	69US/ton
		34US$ FT, 80 UTZ, 83 TRA
price premium	% paid to farmers	4% utz, 9% FT, 10% RA
yield-revenue relationship	% of increase in revenue attributed to higher yields	60%
net benefit certified cocoa	us$ per ton	12
payback benefit from certified cocoa	after 6 years US$ per ton with yield increase	114 $ CI, 382 $ Ghana
payback benefit from certified cocoa	after 6 years US$ per ton with no yield increase	71$ CI, 38 $ Ghana
premium price	US$ ton	180
cumulative net benefit- coop	6 years after cert - per typical co-op 375 members - us$	US$1 million CI, US$1.9 million Ghana
cumulative net benefit- farmer	6 years after cert - per farmer in a typical co-op 375 members - us$	US$2860 CI, US$ 5112 Ghana

Study name		
Benjamin & Deaton, 1993 (Benjamin and Deaton 1993)		
Household welfare and the price of coffee and cocoa in Ghana and Côte d'Ivoire		
Lessons from the Living Standards Surveys (1985 Living Standards Measurement Survey)		
Indicators	**Results**	
LSMS SAMPLE		
# Households	almost half are urban)	1600
Questions were included on:		
Land		
Crops grown		
Age structure of tree crops		
Sharecropping		
Use of inputs		
Livestock		
Farm capital		
Agricultural processing activities		
Income from coffee and cocoa		
strength of LSMS is measurement of household expenditures		
size distribution of farms in Côte d'Ivoire, 1985		
size of farms (0.99)	less than 0.99	2.7
	1 to 1.99	4.3
	2 to 4.99	21
	5 to 9.99	27.6
	10 to 19.9	29.1
	20 to 49.9	13.3
	More than 49.9	2
Average Farm size		12.5
Overall cropped area in each farm size category		
size of farms (0.99)	less than 0.99	0
	1 to 1.99	0.3
	2 to 4.99	5.1
	5 to 9.99	14.9
	10 to 19.9	32.6
	20 to 49.9	31.5
	More than 49.9	15.7
Age structure of trees stands and % of cocoa farms growing coffee in Côte d'Ivoire, 1985		
% of trees in cocoa stands by age structure	too young	39
	fully mature	52

	near end	9
% of cocoa farms growing coffee		78
% of trees in coffee stands by age structure	too young	18
	fully mature	67
	near end	15
% of coffee farms growing cocoa		67
Average household income and expenditure data		
Cocoa	All households	All farm households
Sales		
Less non-labour inputs		
less monteyage (labour costs)		
net cocoa income	110	166
Coffee		
Sales		
Less non-labour inputs		
less monteyage (labour costs)		
net coffee income	56	85
home-produced food	203	307
net other agricultural income	118	178
total agricultural income	487	736
Non-agricultural income		
Wages	533	133
Self-employment	306	162
other income	236	115
total non-agricultural income	1074	410
Total income	1562	1146
Household expenditure	1638	1161
Per capita expenditure	264	153
Sample Size	1559	1033
Average yield per hectare coffee		
Average yield per hectare cocoa		
Metayeurs (hired labour)		
income		
cuts in cocoa and coffee prices that have taken place are unlikely to have had a dramatic effect on the distribution of income, essentially because cocoa and coffee farmers are well scattered through the population		

Study name	
FAFO 2012 (Hatløy et al. 2012)	
Baseline Study Report, Towards Côte d Ívoire Sustainable Cocoa Initiative (CISCI)	
Indicators	**Results**
Method	
conducted by team of 4 people (2 FAFO researchers, 2 Ivorian consultants)	
work carried out July-August 2012	
Most information collected from Abidjan	
various stakeholders interviewed: List in Annex 3	
Annex 4: complete list of cocoa sector programme and projects	
Section 1.2 Cocoa in Côte dÍvoire	
600 000 cocoa farms	
4 million of country's 22 million inhabitants	
average farm size 3 ha	
yield kg/ha = 450	
cocoa primary source of income for more than 75% of population	
income is limited with farmers receiving not more than 40% of the CIF price	
43% of population remain below poverty line	
72% of farming communities have no health centre and other basic services	
60% have no access to drinking water	
Chapter 4: constraints for sustainable cocoa sector	*page 22*
social constraints	
child labour specifically worst forms of child labour	
access to basic infrastructure	
ageing of farmers	
HIV/AIDS and malaria prevention	
farmer safety	
Economic	
access to finance	
access to agricultural inputs	
cooperative organisation	
ageing of cocoa trees	

Environmental
land degradation and deforestation
pests and diseases
Governance
Land ownership, enforcement and planning
limited capacity of institutions such as ANADER and CNRA
land use planning
coordination of actions among stakeholders
measuring progress in the cocoa sector
lack of data on specific issues such as deforestation

Study name
COSA/RA 2011 (COSA 2012)
Rainforest Alliance Certification on Cocoa Farms in Côte d'Ivoire
Indicators
Method
Côte d'Ivoire
Haut Sassandra, Bas Sassandra, Moyen Comoe
Côte d'Ivoire
Haut Sassandra, Bas Sassandra, Moyen Comoe
Côte d'Ivoire
Haut Sassandra, Bas Sassandra, Moyen Comoe
200 farms 2009, 252 farms 2011
7 co-ops
117 RA certified and 135 control non cert farms
training
cert hours of training in past year improved farm operations
cert hours of training in past year marketing support
cert hours of training in past year env issues
cert hours of training in past year total
non-cert hours of training in past year improved farm operations
non-cert hours of training in past year marketing support
non-cert hours of training in past year env issues
non-cert hours of training in past year total
yields kg/hectare
cert
control non cert
revenue US$/ha
Cert
control non cert
income US$/ha
cert
control non cert
perception econ circumstances
worsened
improved
changes yields 2009 to 2011
cert
non-cert
changes revenue 2009-2011
cert
non-cert
replanting/rejuvenating trees
cert
non-cert
water protection measures implemented
cert
non-cert
soil cons measures implemented
cert
non-cert

Study name			
IITA, 2002 (IITA 2002)			
Summary of Findings from the Child Labour Surveys In the Cocoa Sector of West Africa: Cameroon, Côte d'Ivoire, Ghana, and Nigeria			
Indicators	**Results**		
Method			
Baseline Producer Surveys (BPS) were conducted in 203 villages in Cameroon, Ghana, and Nigeria. The sample size for these countries included 3,086 respondents. A BPS has just been concluded in Côte d'Ivoire, and data from this survey are currently being analysed.			
Producer-Worker Surveys (PWS) and Community Surveys (CS) were conducted in Côte d'Ivoire. The PWS covered the entire cocoa producing region visiting 250 localities and interviewing 1,500 producers. The CS included 114 interviews in 15 of the 250 PWS localities.			
Child labour			
% family labour used	CI	87%	
% boys working on farm	West Africa	59	
% girls working on farm	West Africa	41	
average age	West Africa	>14	64%
		CI	Ghana
no. children carry out farm tasks		129410	0
no. children carry out farm tasks- apply pesticides		13200	0
no. children carry out farm tasks- use dangerous tools		71100	38700
no. children paid		5121	0
no. children no family ties		11994	0
no children working via intermediaries		2500	
no children (age 6-17) in cocoa producing household ever attended school	ci	33	
school enrolment rate- working on farm	ci	34	
school enrolment rate- not working on farm	ci	64	
school enrolment rate- children of immigrants	ci	33	
school enrolment rate- children of natives		71	
average household revenues from cocoa	US $ Household member	30 to 110	
cocoa share of total household revenue	ci	66%	
	Ghana	55%	
average yield	kg/ha ghana207		

Study name				
IITA 2009 (IITA 2009)				
		CI	Ghana	
total farm gate receipts	US$	1.2 billion	700 million	
government revenues		1 billion	650 million	
yields old cocoa region	kg/ha	200	200	
yields new cocoa region	kg/ha	490	433	
median tree age	years			25

Annex 11 Overview of inputs used by cocoa farmers

Type pesticide product	% respondents N= 376
45SC	0%
ACCELAM	2%
ACTARA	2%
ALM	0%
ALPHA	0%
ATIKPA	1%
BASUDINE	2%
BIOCAO	0%
BORADYNE	7%
BOREX	6%
BOREXNA	0%
BOSSE PLUS	0%
CABOSSE 18 MOIS	0%
CABOSSE PLUS	5%
CACAO SUPER	0%
CACAO VITESSE	1%
CAHOMONIAC	0%
CALFAN	5%
CALIFAN	0%
CALIVOIRE	1%
CAO SUPER	0%
CAODAN	0%
CAOFORCE	16%
CAOMIDAX	0%
CAONET	1%
CAOTIMAN	0%
CAOVITESSE	0%
CATAPULTE	1%
COLIDOR	0%
CROBITEX	0%
ENGEO	0%
ENGES	0%
ENJO	0%
GAWA	2%
GLYPADAIRE	0%
GRAMOXONE	0%
GROSUDINE	2%
HUMIDOR	0%
IMIDOR	1%
IRAN	0%
KAFANE SUPER	1%
KOLINOR	1%
MIRADOR	0%
MIRIDENT	0%
MORèS	0%
ONEX	0%
PARACAO	1%
PROTEK	1%
SOFITAN	0%
SUPER GRO	0%
TERMINUS	0%
THIODAN	13%
THIOSULFAN	11%
THIONEX	1%
TIMA SUPER	0%
TROPICAO	1%
TROPINEX	0%
TURBO ACTION	0%

Herbicide

Type herbicide	% respondent N= 121
ADWUMAWURA	1.7%
BINFAGA	1.7%
KALACH	3.3%
DABA	0.8%
DESTRUCTOR 360 SL	0.8%
FANGA	1.7%
Glyphadaire	10.7%
GRAMOKATE	0.8%
GRAMOXONE	34.7%
HERBESTRA	3.3%
HERCULE	1.7%
PLYPHADèR	0.8%
Round Up	37.2%
GRIFADEL	0.8%

Note- some farmers indicate the same products for both herbicide and fungicidal use

Fungicide

Type fungicide	% respondent N= 65
AGRICAO	1.6%
BASF	1.6%
CALLOMILE	6.3%
CAOFORCE	1.6%
CONSICAO	1.6%
FONGICAO	14.3%
FORUM	3.2%
GLIPHADER	7.9%
RIDOMIL	49.2%
RIDOMIN	0.0%
RUDOMINE	1.6%
Round Up	6.3%
TROPICAL	3.2%
unknown	1.6%

Fertilisers

Type of fertiliser	% N= 80
23 NPK	61.3%
COMPOST	7.5%
DECHET DE MOUTON	1.3%
DECHET DE POULET	6.3%
EK 18	1.3%
HURE	1.3%
Fertiliser (unknown name)	1.3%
HYDROCAO	2.5%
MARZOUZA	1.3%
ROUND-UP	1.3%
STPC	1.3%
SUPERCAO	10.0%
SUPERGRO	1.3%
VITA PLUS	1.3%
éLéPHANT	1.3%

Cocoa plant materials

Local name for plant material	Unit	Total costs in CFAF
18 months	100 seedlings sufficient for 1 hectare	25000 CFAF to CENERA
BRESIL	100 seedlings sufficient for 1 hectare	100 for 25000 pay to CENERA
GHANA	Per seedling	Purchase or exchanged with other farmers
MERCEDES	Per seedling	Purchase or exchanged with other farmers

Annex 12 Figures and graphs

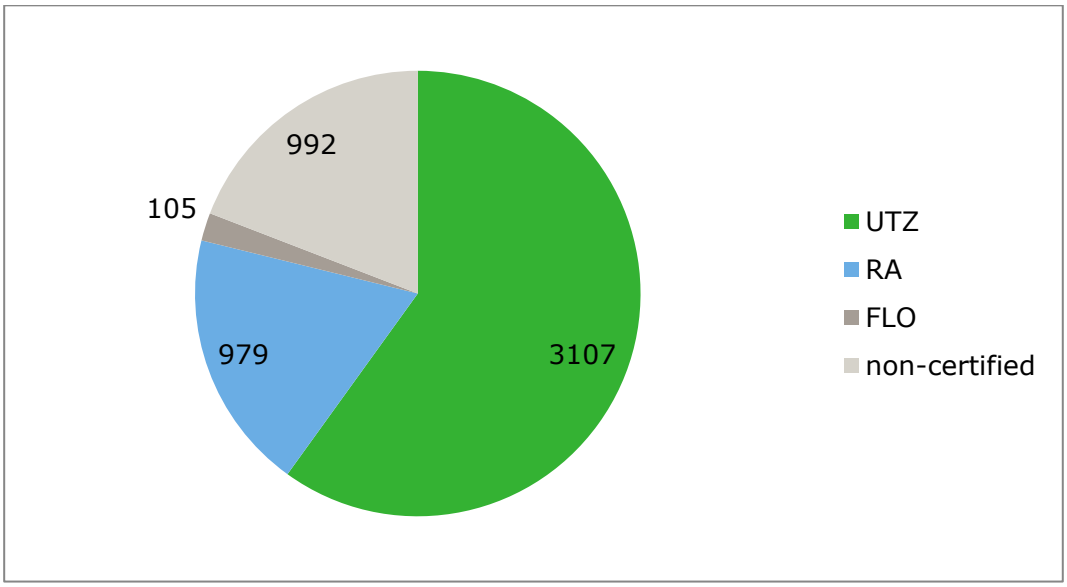


Figure 9 *Total hectares reported by farmers as certified.*
Note: indicates area certified as UTZ + other certification standards.

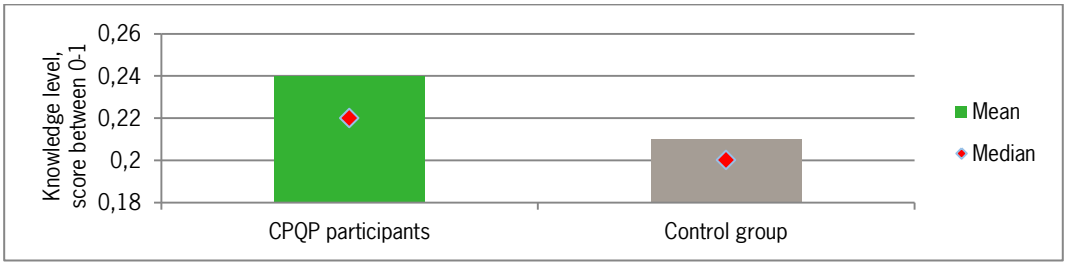


Figure 10 *Knowledge levels (CPQP participants and control group farmers).*

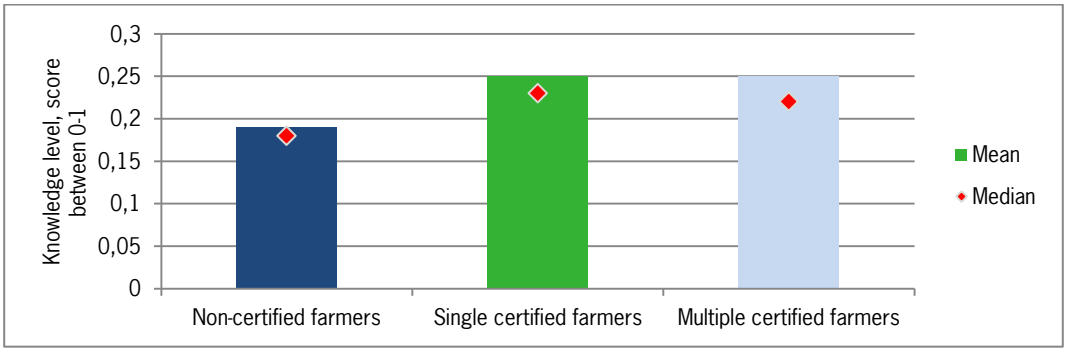


Figure 11 *Knowledge levels (certified and non-certified farmers).*

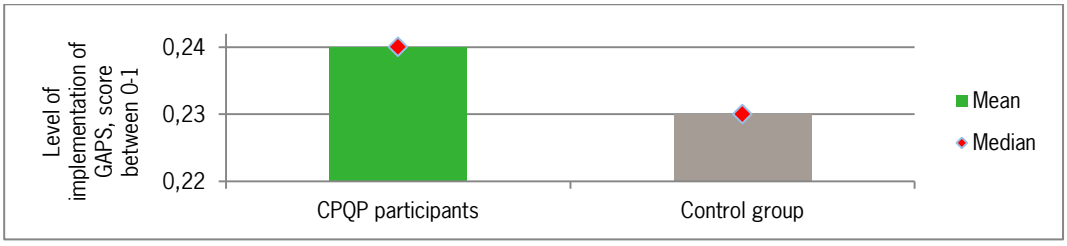


Figure 12 *Implementation levels (CPQP participants and control group farmers).*

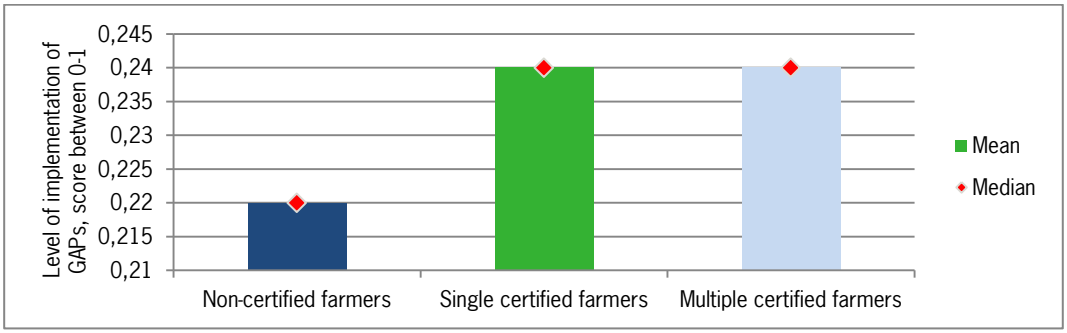


Figure 13 *Implementation levels (certified and non-certified farmers).*

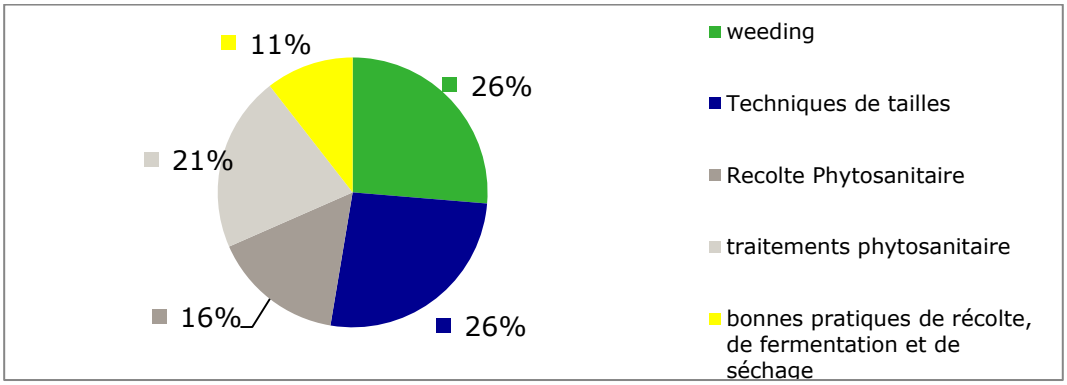


Figure 14 *Farmers' perceptions of increased knowledge on GAPs.*
Source: Focus Group (121 participants).

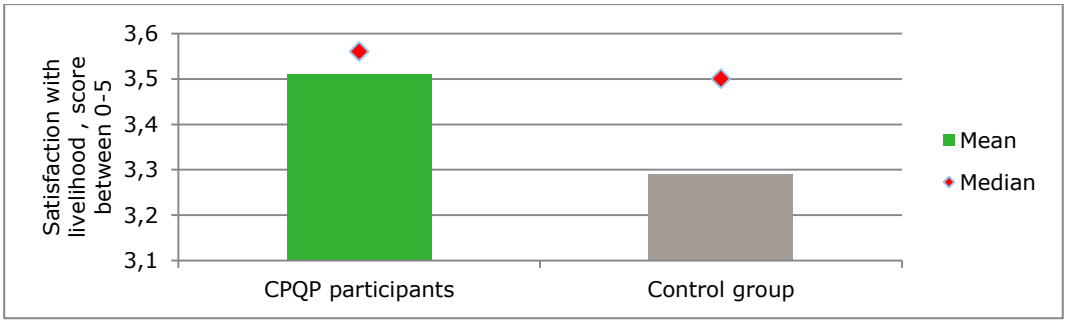


Figure 15 *Farmers' satisfaction with livelihoods (CPQP farmers and control group).*

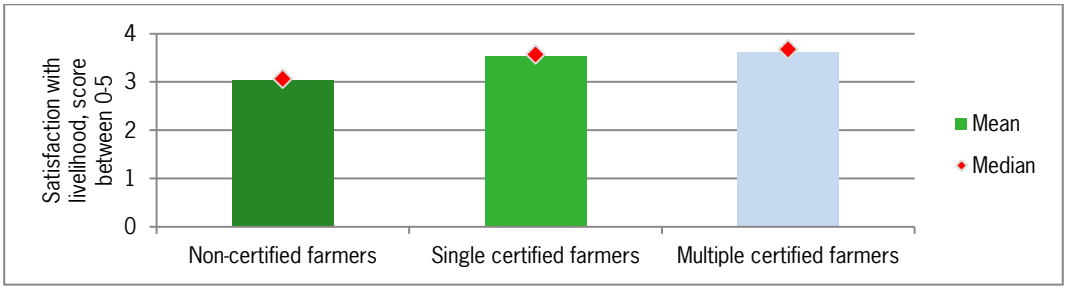


Figure 16 *Farmers' satisfaction with livelihoods (non-certified and certified farmers).*

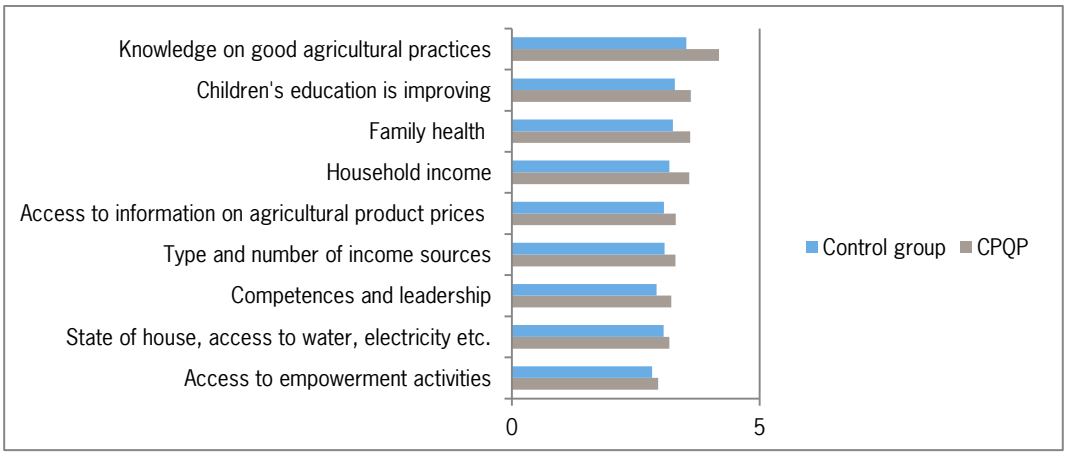


Figure 17 *Farmers' satisfaction with different aspects of livelihoods (CPQP farmers and control group).*
Key: 0 = unsatisfied 2.5= neutral 5 = very satisfied.

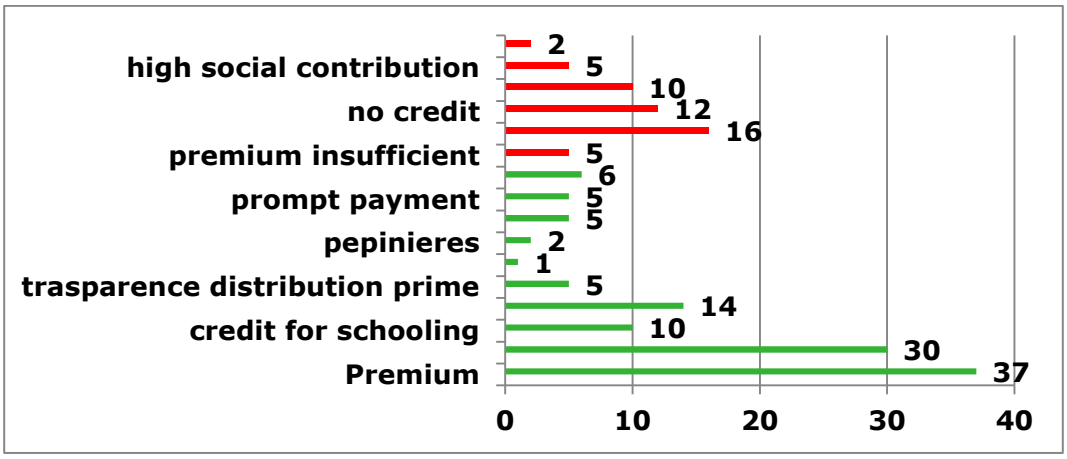


Figure 18 *Farmers' satisfaction with producer groups services.*
Dissatisfaction – red satisfaction – blue
Source: Focus group (121 participants).

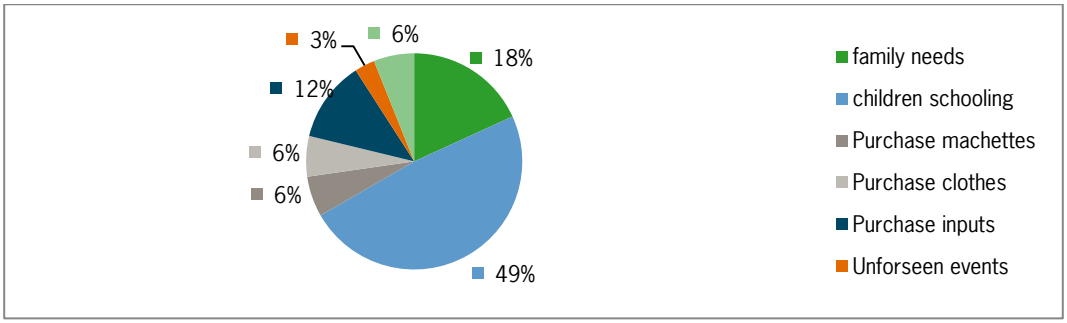


Figure 19 *Use of cocoa revenues by farmers.*
Source: Focus Group (121 participants)

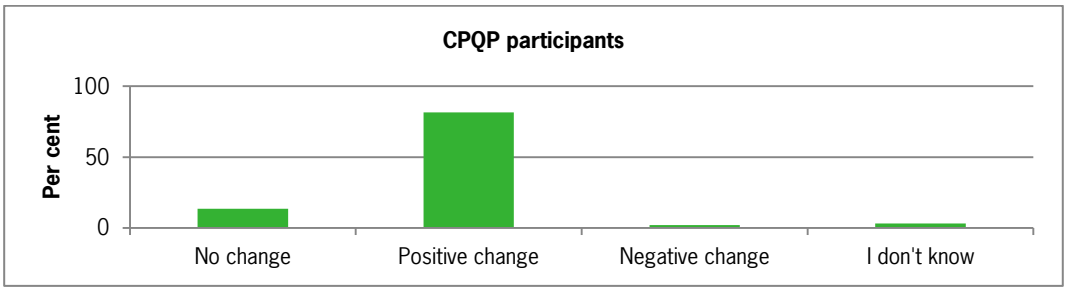


Figure 20 *Perceptions of changes in living conditions since participation in a certification programme.*
(N = 200)

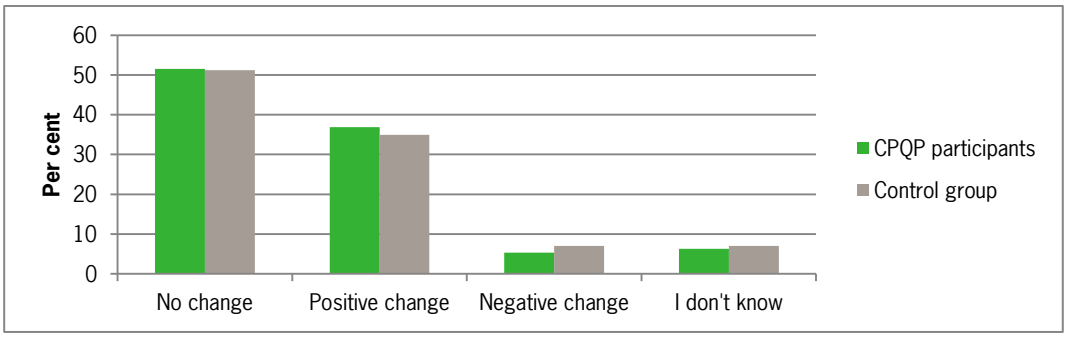


Figure 21 *Changes in children's schooling in the last two years.*
(N = 249)

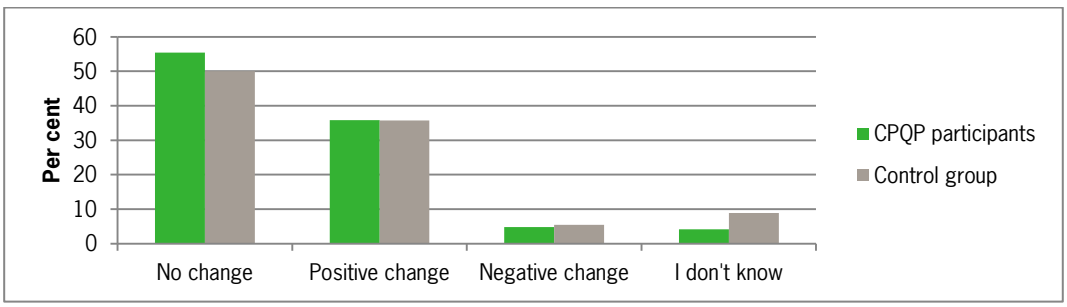


Figure 22 *Changes in access to health care in the last two years.*
(N = 327)

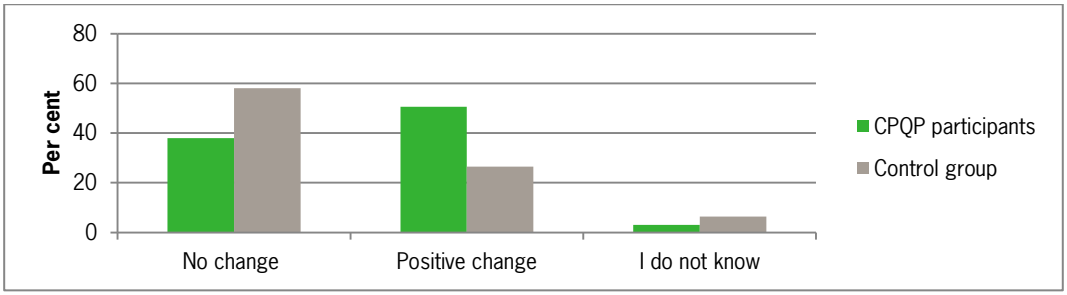


Figure 23 *Changes in access to inputs in the last two years ago. (N = 906)*

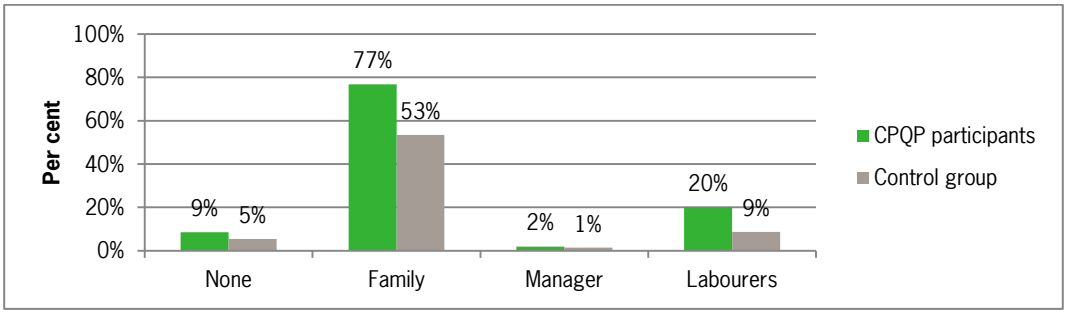


Figure 24 *Percentage of farmers sharing benefits with other parties. (N = 844)*

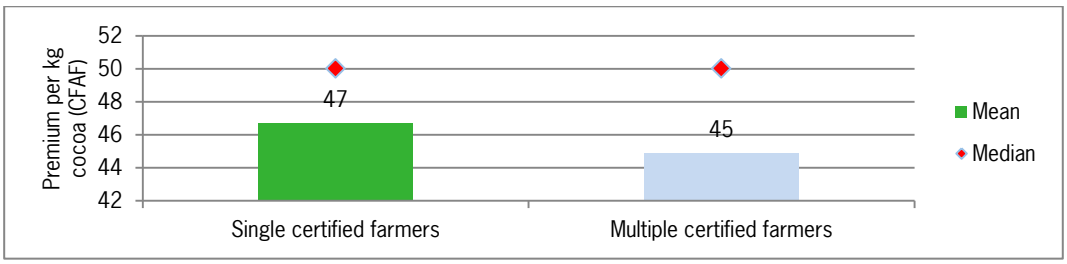


Figure 25 *Premium price received per kg cocoa by farmers.*

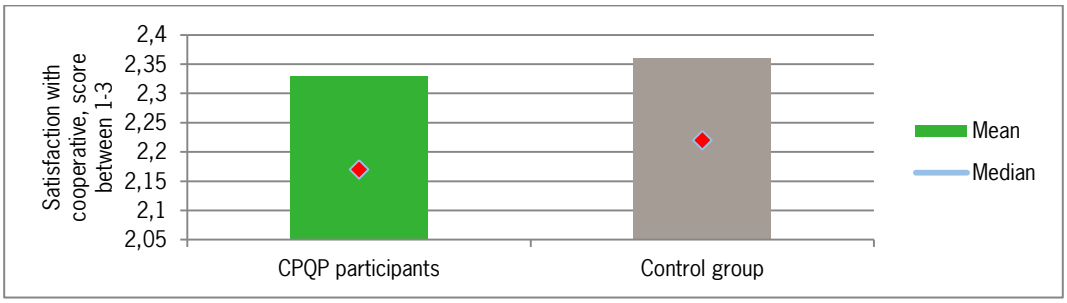


Figure 26 *Farmer satisfaction with producer group services (CPQP farmers and control group). Key: 2 = neutral, 3 = satisfied.*

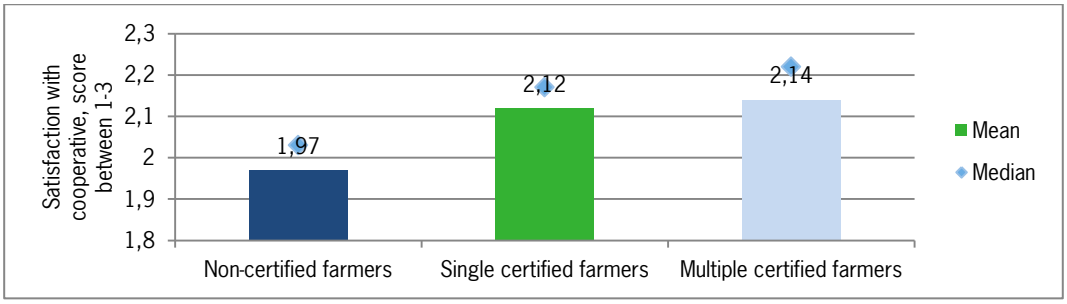


Figure 27 *Farmer satisfaction with producer group services (non-certified and certified farmers. Key: 2 = neutral, 3 = satisfied.*

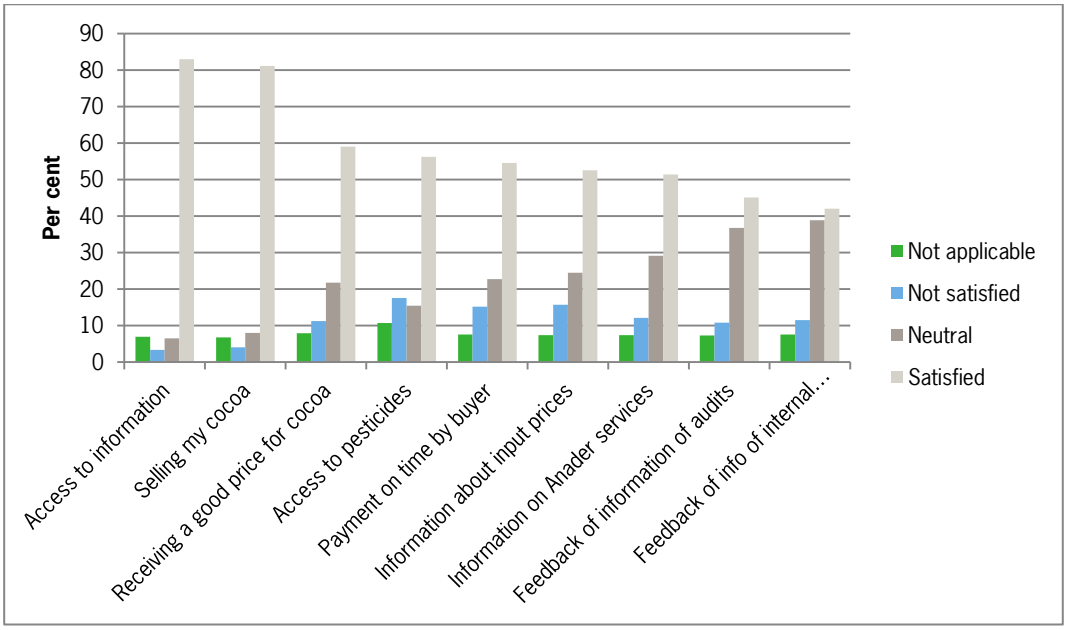


Figure 28 *Farmer satisfaction with services offered by their producer group.*

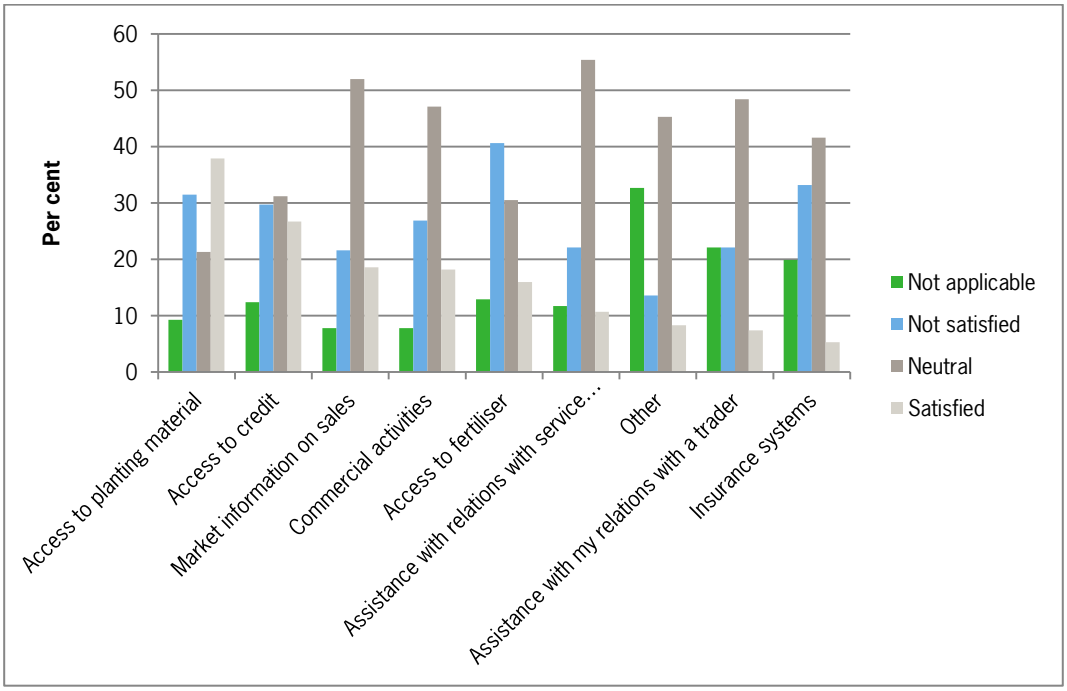


Figure 29 *Farmer satisfaction with services offered by their producer group (continued).*

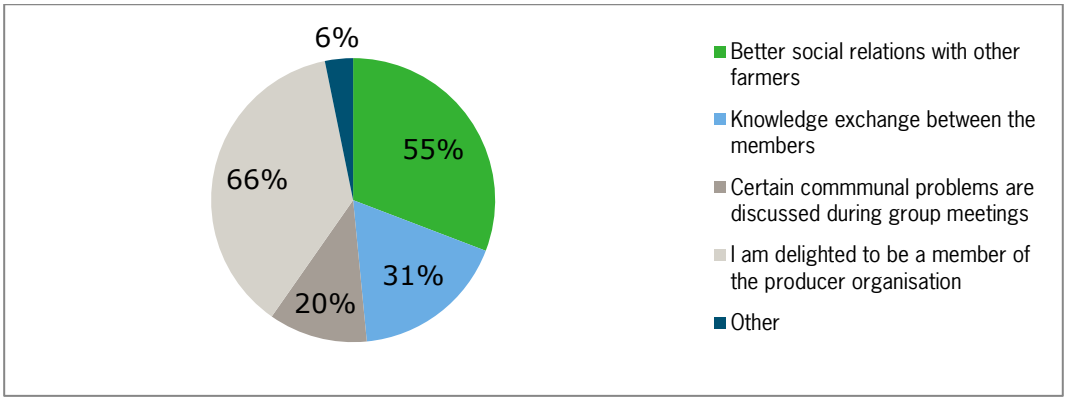


Figure 30 *Advantages of being member of a producer group. (N = 477)*

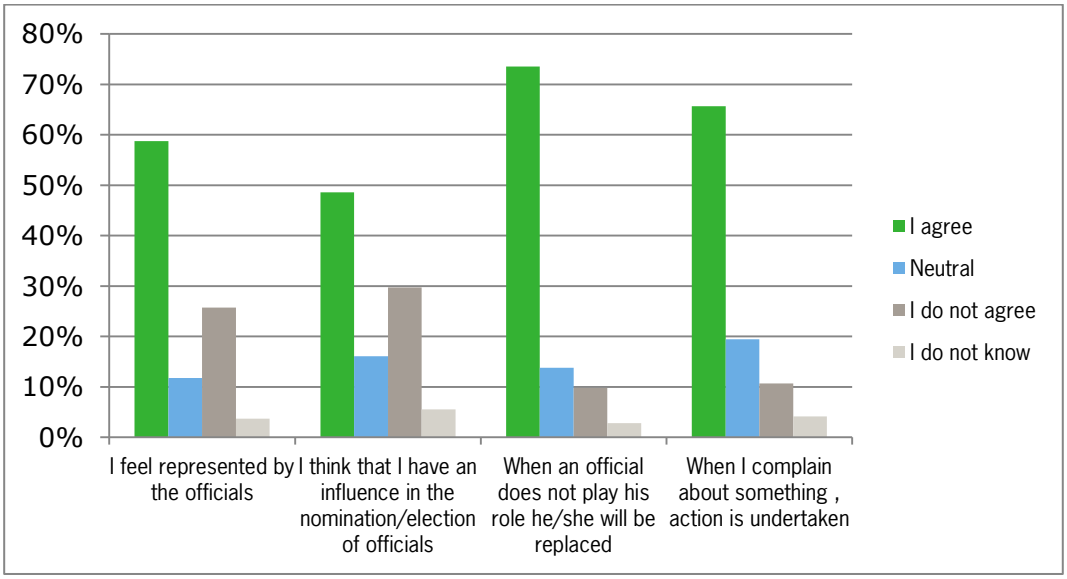


Figure 31 *Farmers' satisfaction with functioning of producer groups.*

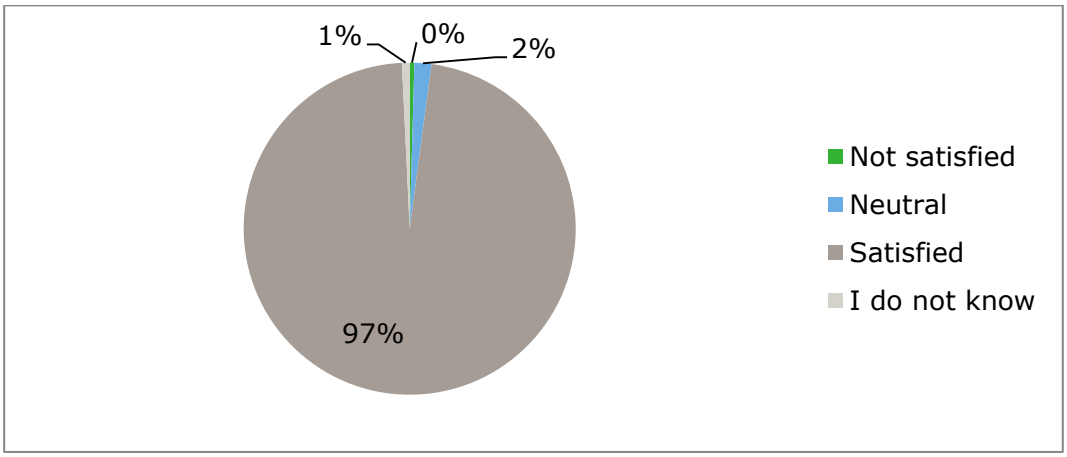


Figure 32 *Farmers' satisfaction with UTZ training programme.*

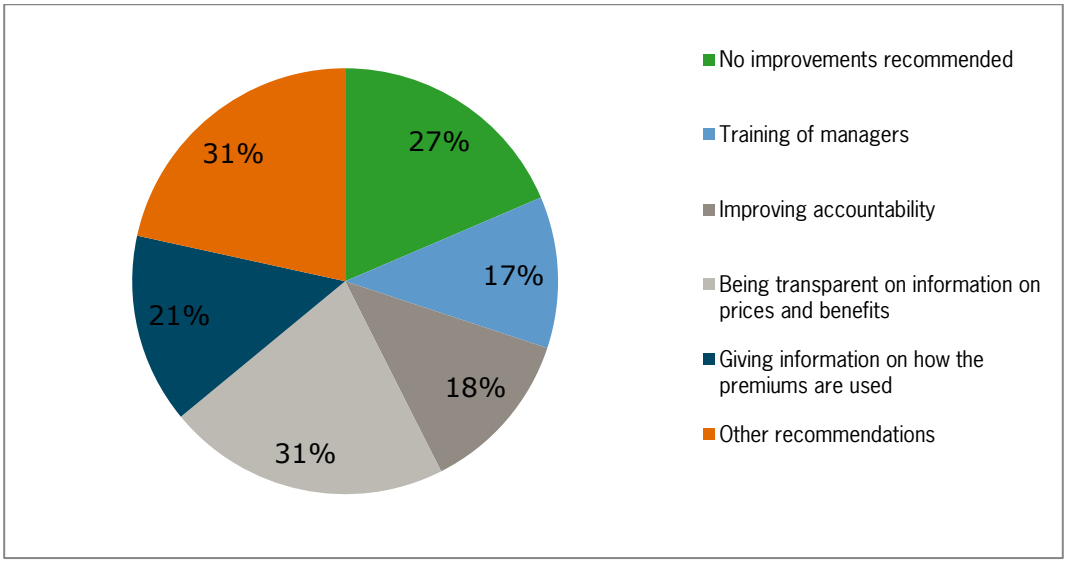


Figure 33 *Suggested improvements for producer group by UTZ programme participants. (N=717, multiple responses possible).*

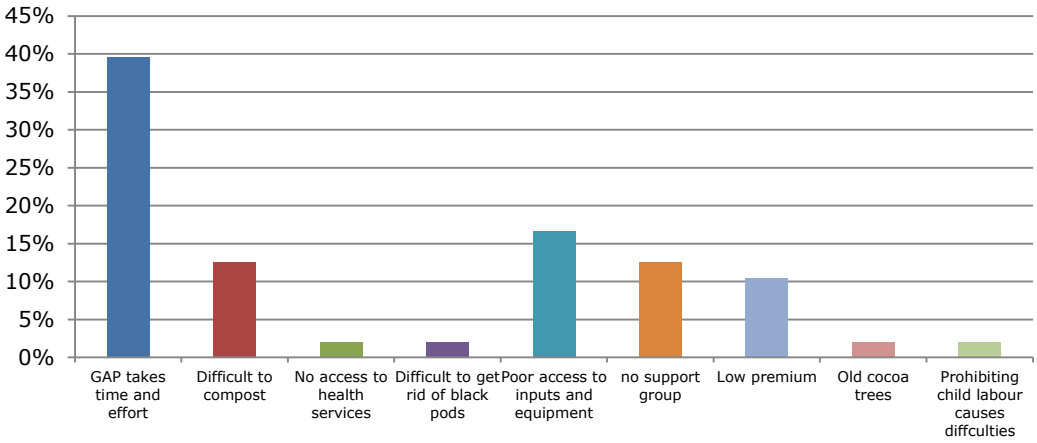


Figure 34 *Farmers' perceptions of the disadvantages of certification. (N=48 multiple response possible).*

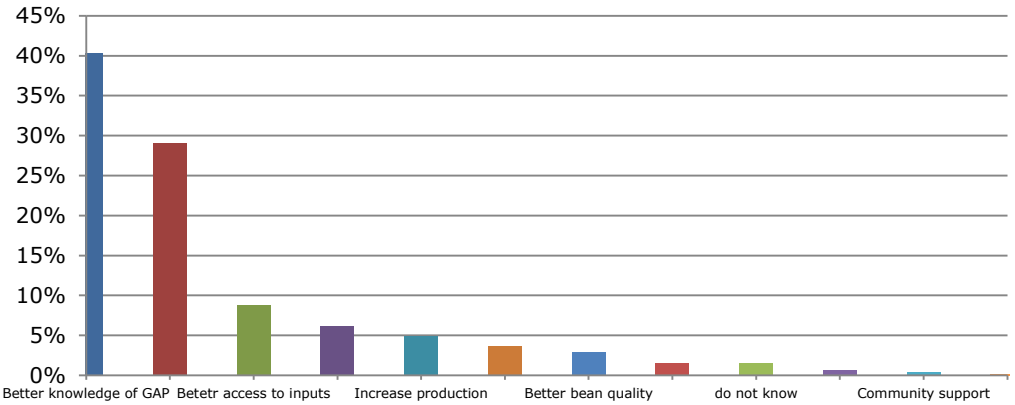


Figure 35 *Farmers' perceptions of the advantages of certification. (N=441 multiple response possible).*

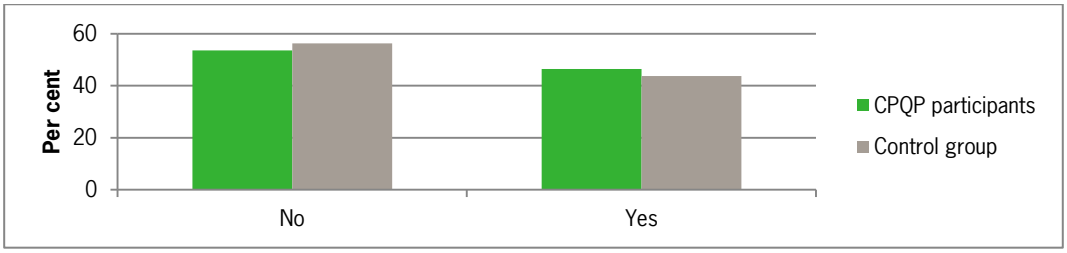


Figure 36 *Extent of labour contracts between farmers and workers.*

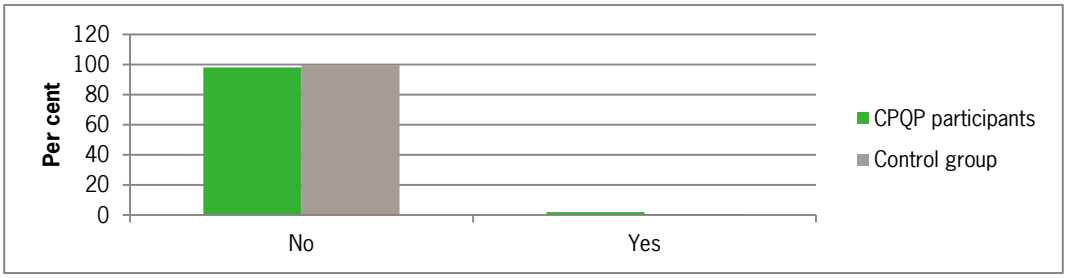


Figure 37 *Extent of registering workers with CNPS.*

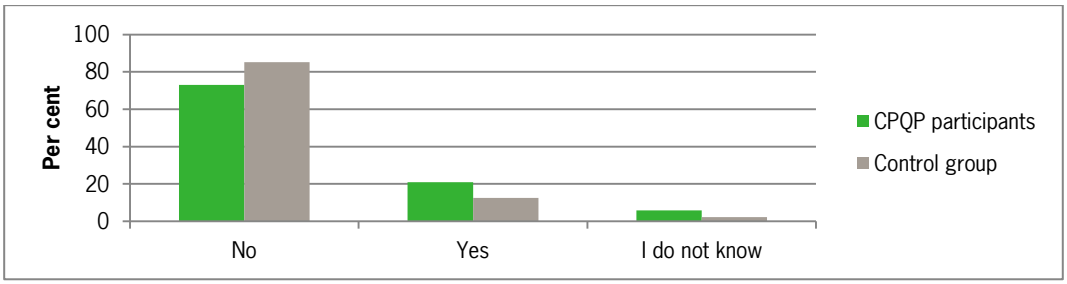


Figure 38 *Extent of farmers' knowledge of workers' rights.*

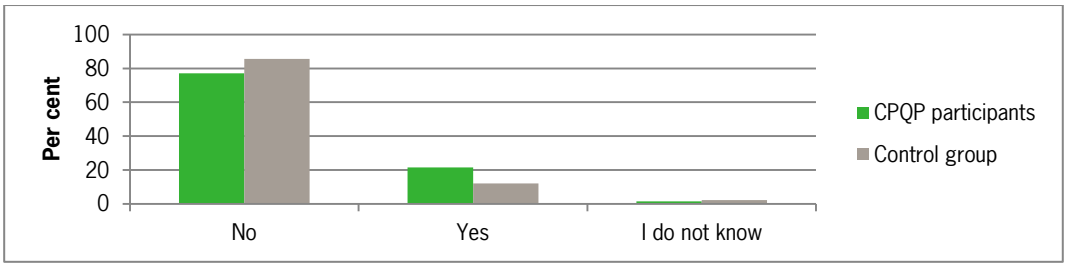


Figure 39 *Access to workers to organisations concerned with labour rights.*

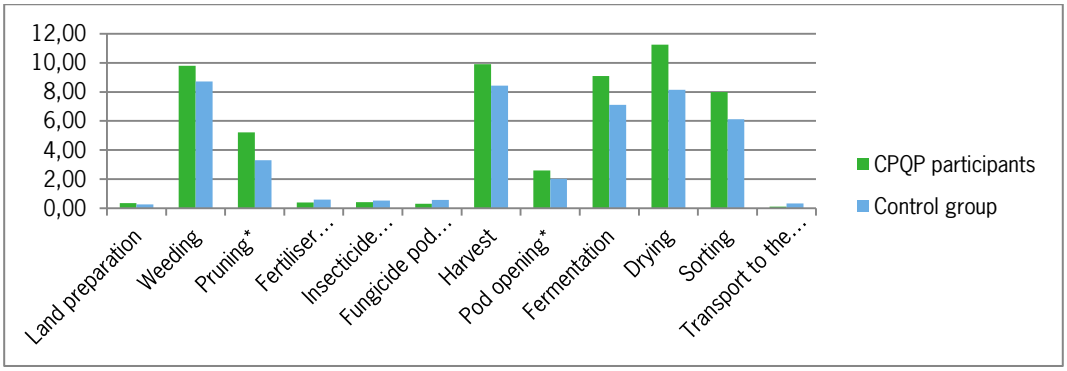


Figure 40 *Average hours spent by children on cocoa production activities in 2012.*

*Key: * hazardous activities for children*

Table 16

Average number of hours spent by children on cocoa production activities in 2012.

Activities hazardous for children*	CPQP participants	Control group
Pruning	5.23	3.31
Fertiliser application	0.4	0.6
Insecticide treatment	0.43	0.54
Fungicide pod treatment	0.31	0.57
Pod opening	2.61	2.04

*based on UTZ Code of Conduct

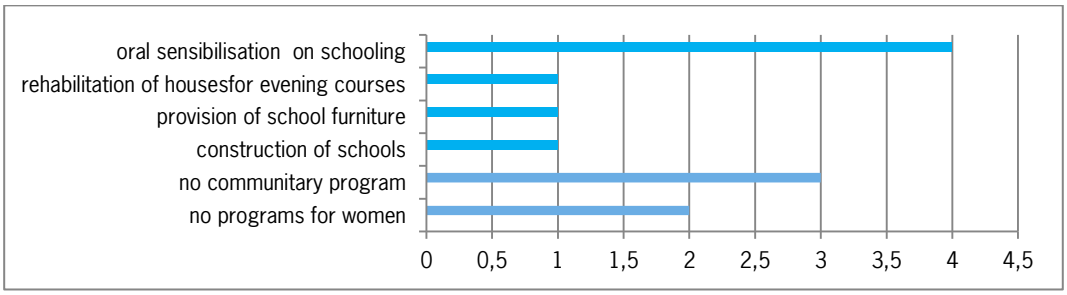


Figure 41 *Activities associated with children's rights noted by farmers.*

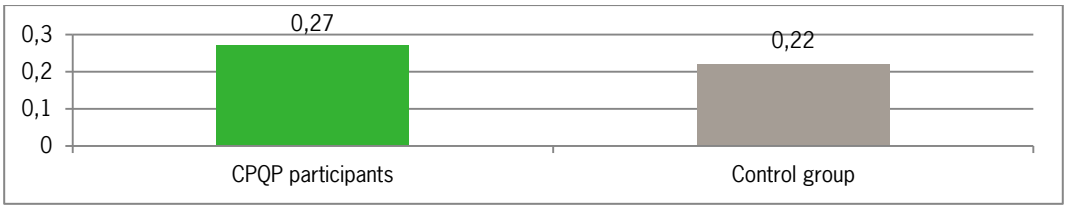


Figure 42 *Average knowledge score concerning the use of PPE.*

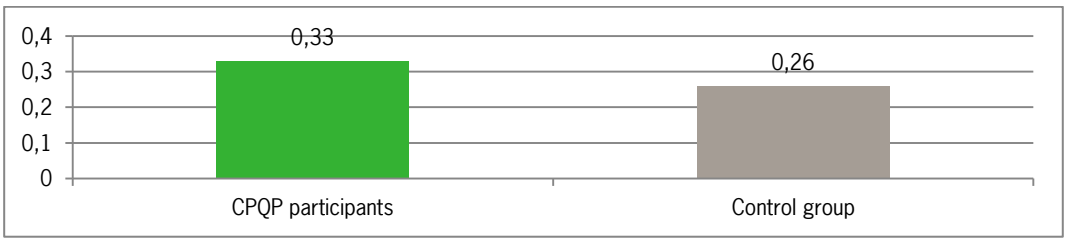


Figure 43 *Average implementation score concerning the use of PPE.*

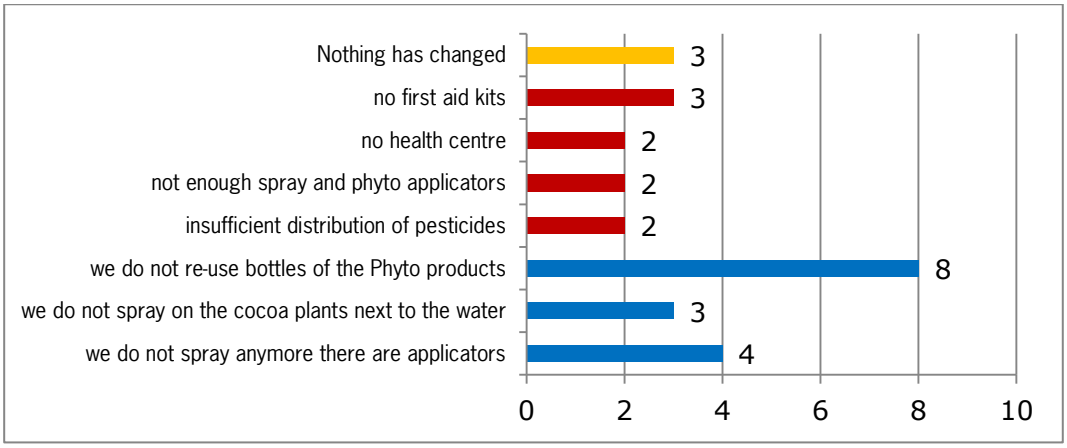


Figure 44 *Changes in working conditions and healthcare.*

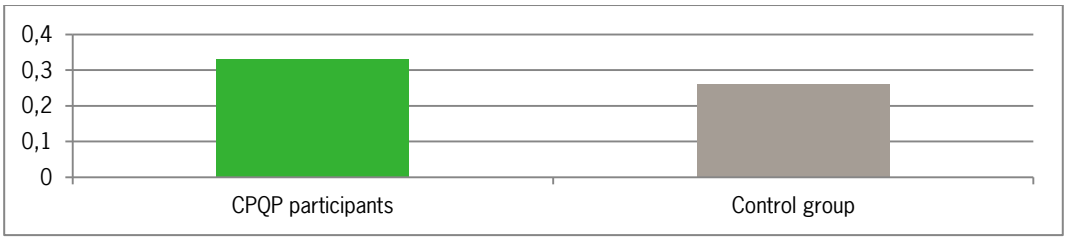


Figure 45 *Accidents during cocoa production activities in the last year. (N = 918)*

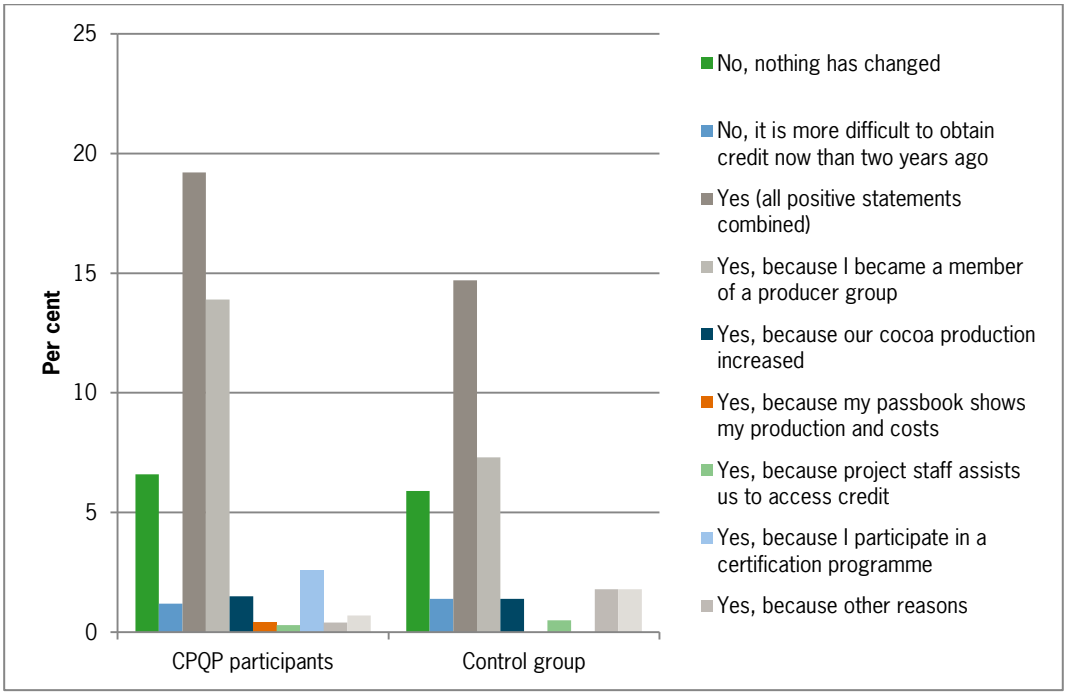


Figure 46 *Changes in access to credit compared to two years ago. (N = 263)*

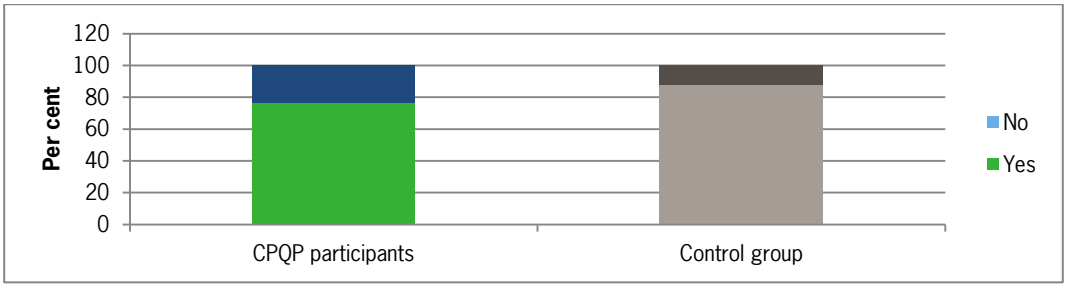


Figure 47 *Farmers borrowing money in the last 2 years.*

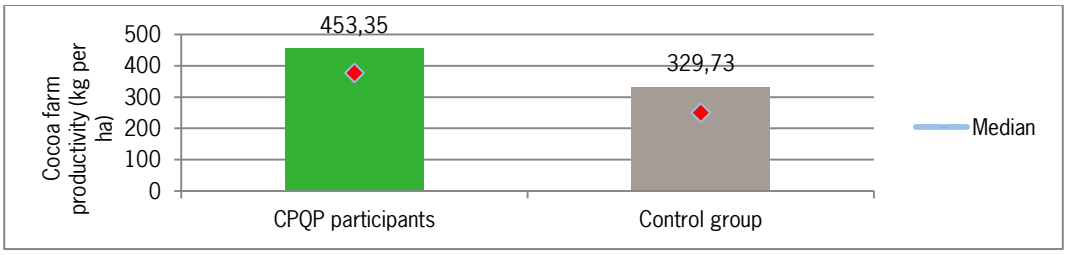


Figure 48 *Farmer productivity (CPQP participants and control group).*

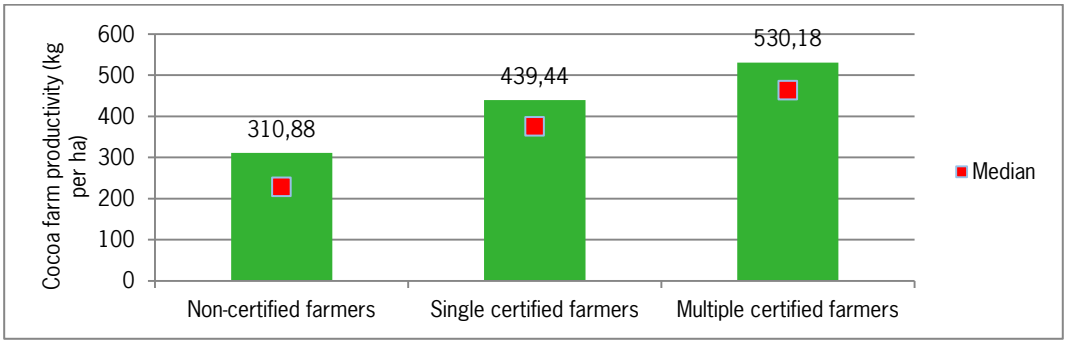


Figure 49 *Farmer productivity (certified and non-certified farmers).*

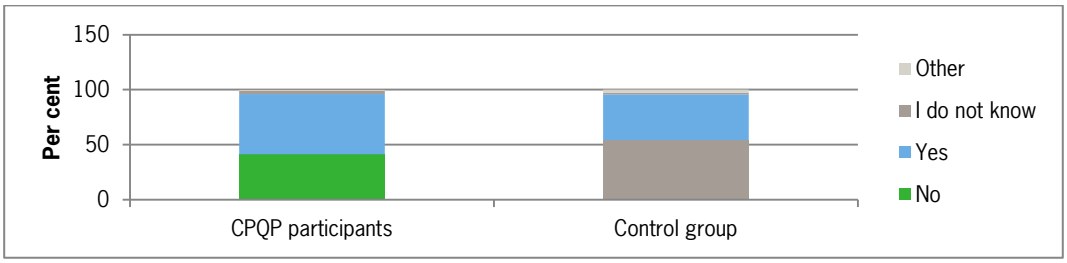


Figure 50 *Ease of accessing inputs compared to two years ago. (N = 940)*

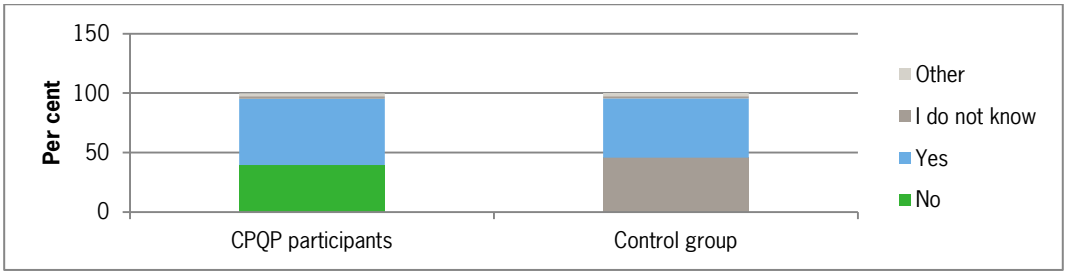


Figure 51 *Ability to buy inputs needed.*
(N = 938)

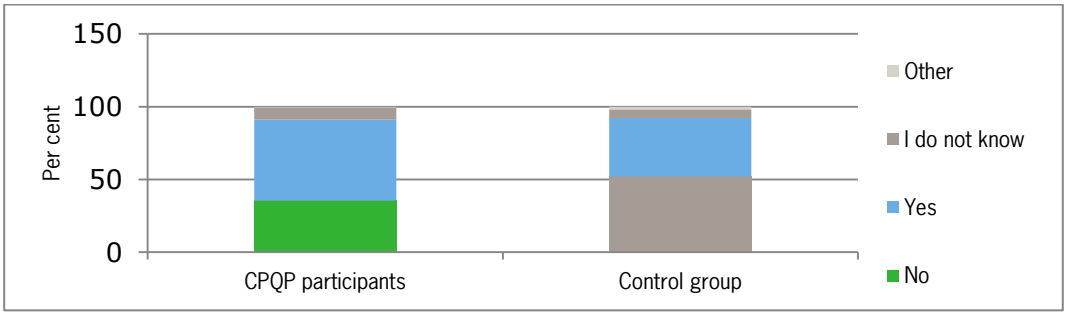


Figure 52 *Improvements in access to inputs.*
(N = 924)

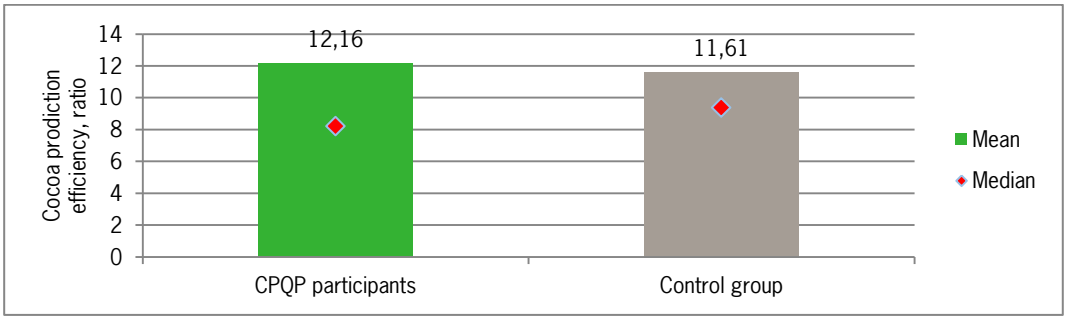


Figure 53 *Average farmer cocoa production efficiency ratios (CPQP participants and control group).*

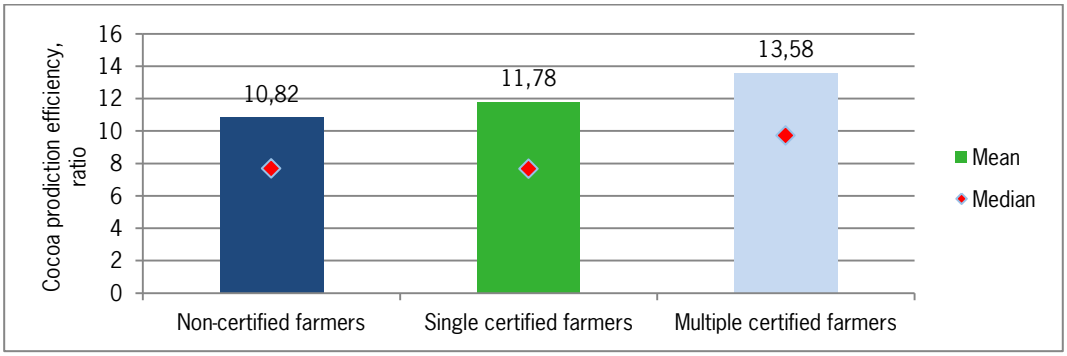


Figure 54 *Average farmer cocoa production efficiency ratios (non-certified and certified farmers).*

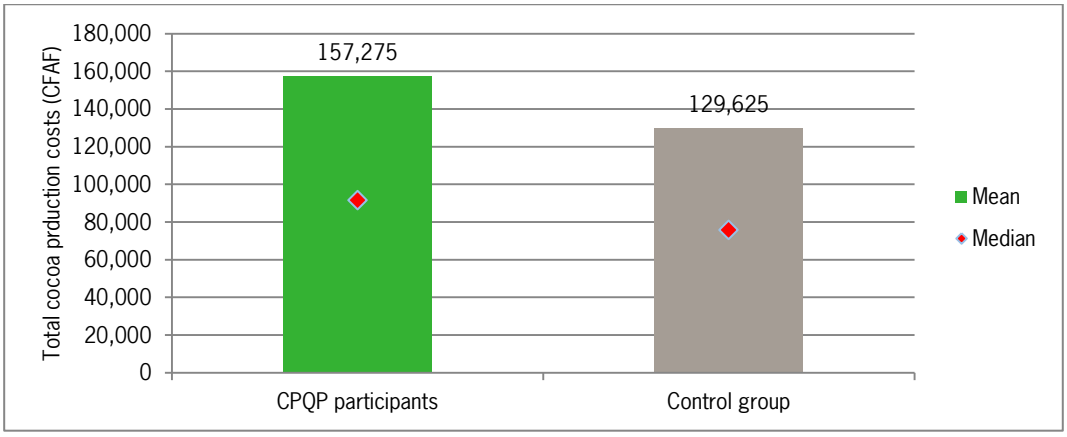


Figure 55 *Average total cocoa production costs (CPQP participants and control group).*

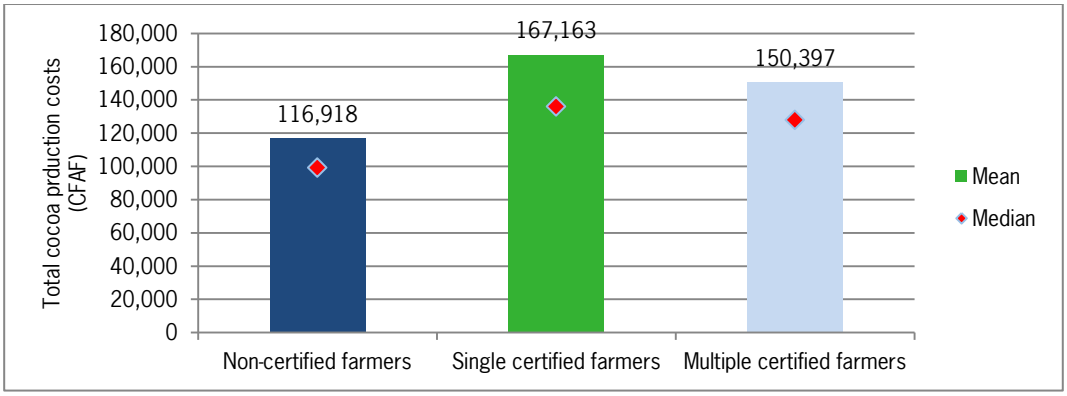


Figure 56 *Average total cocoa production costs (non-certified and certified farmers).*

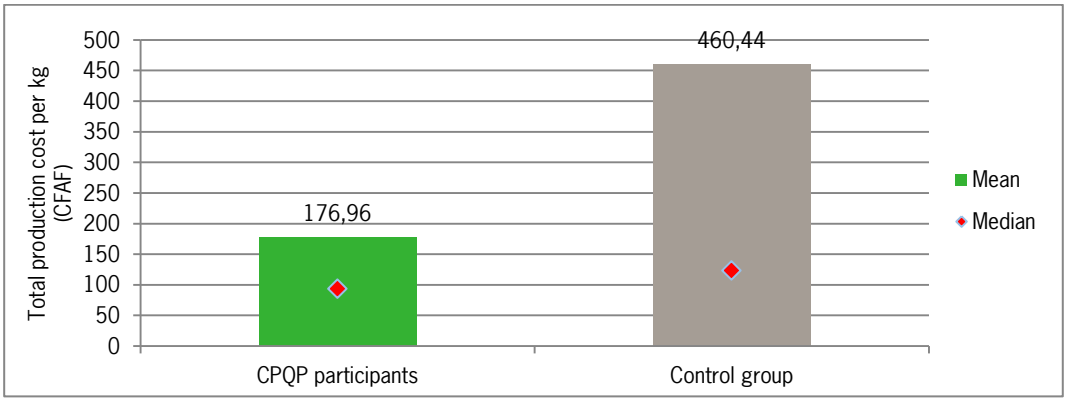


Figure 57 *Average cocoa production costs per kilogram (CPQP participants and control group).*

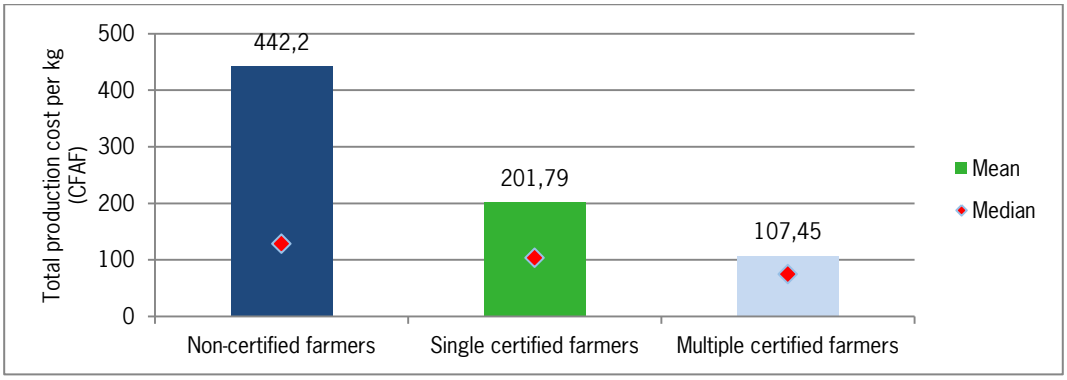


Figure 58 *Average cocoa production costs per kilogram (certified farmers).*

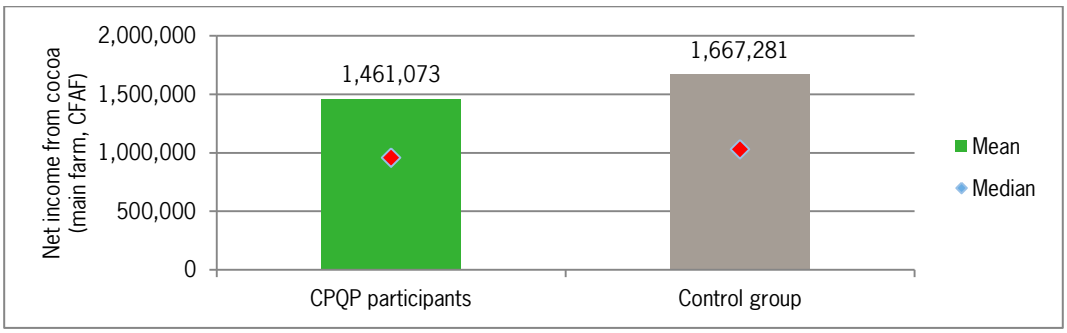


Figure 59 *Average net income from cocoa (CPQP participants and control group farmers).*

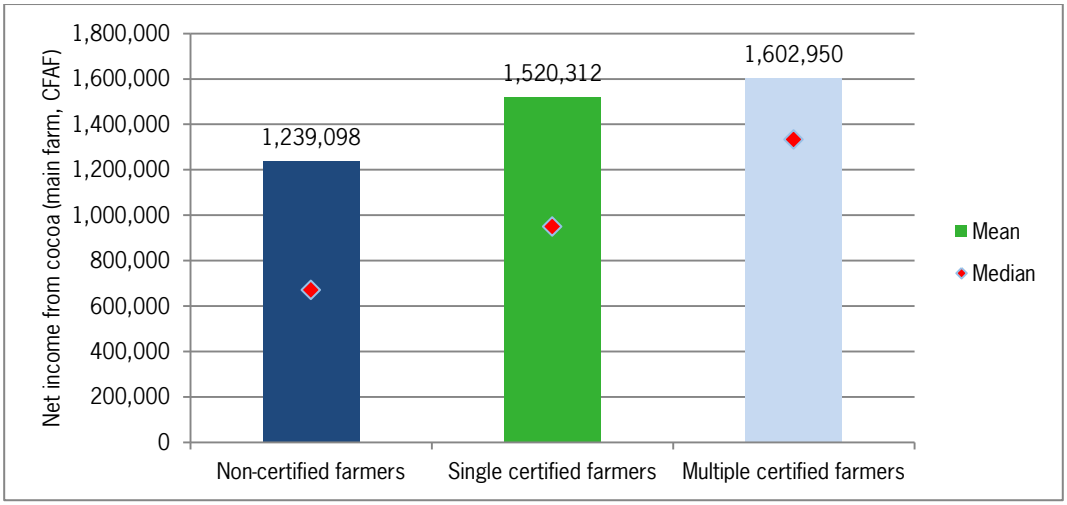


Figure 60 *Average net income from cocoa.*

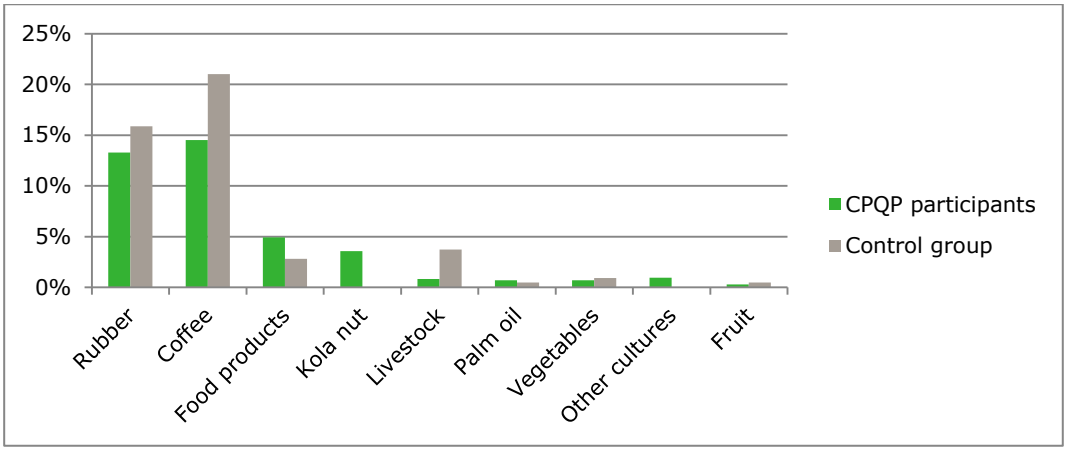


Figure 61 *Percentage of farmers with other income sources (multiple responses possible).*

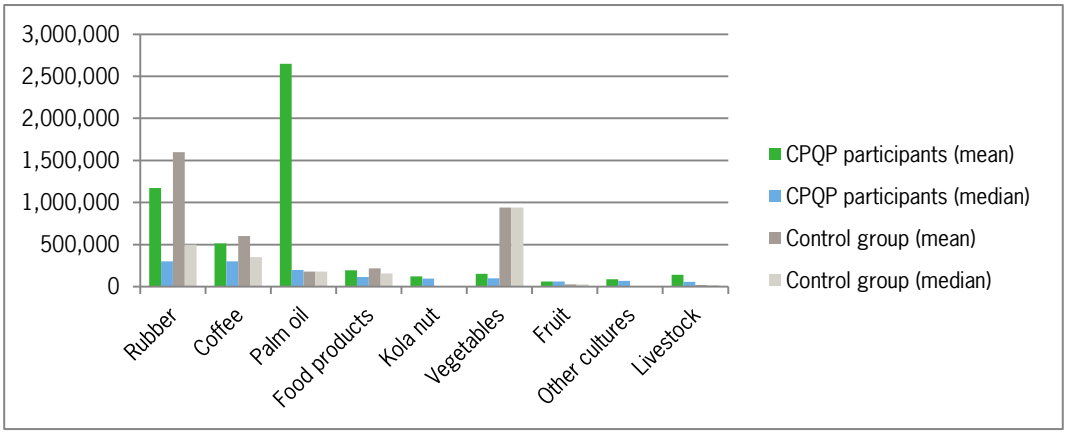


Figure 62 *Average gross income from other sources (CFAF).*

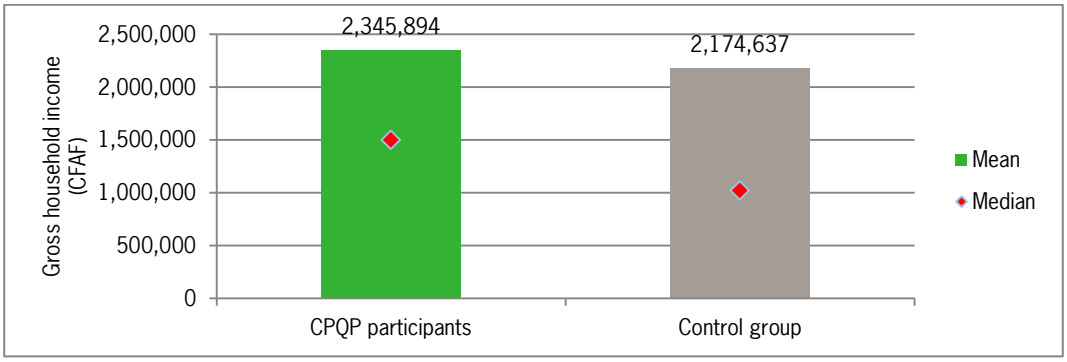


Figure 63 *Average gross household income.*

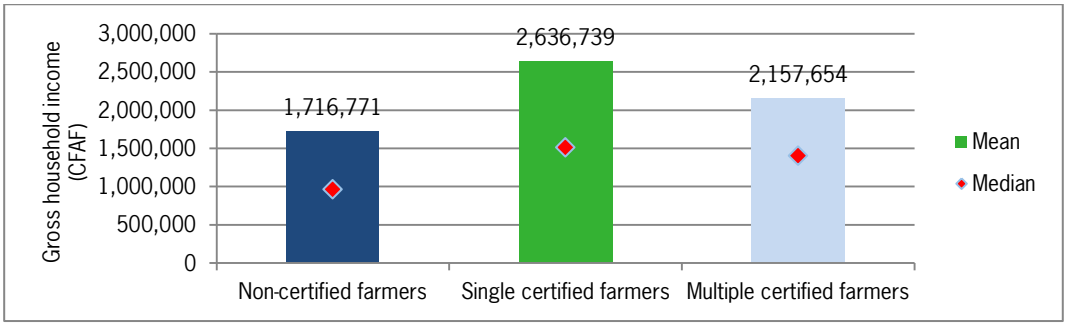


Figure 64 *Average gross household income.*

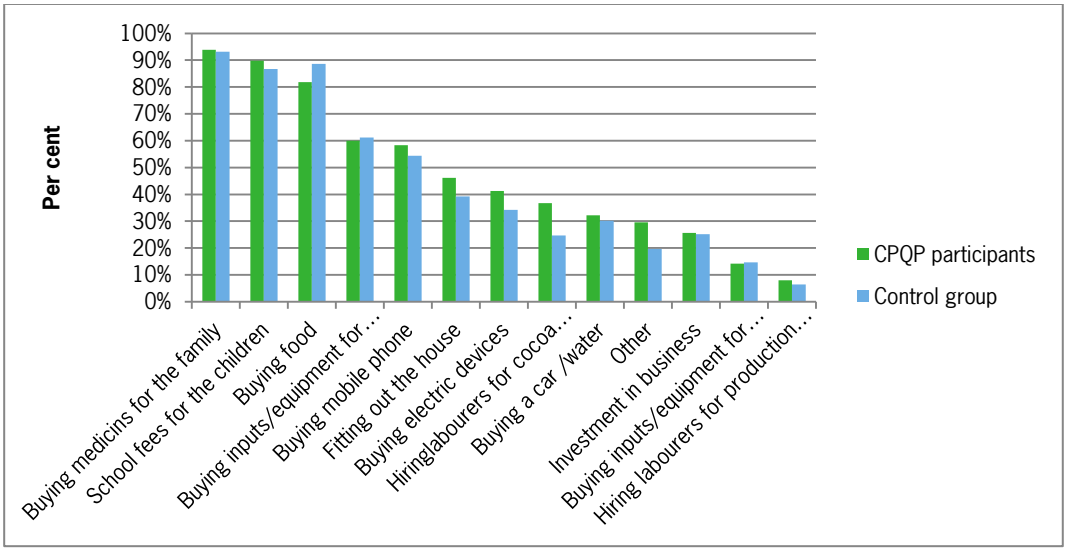


Figure 65 *Farmers uses of cocoa income.*
(max N is 937 multiple response possible)

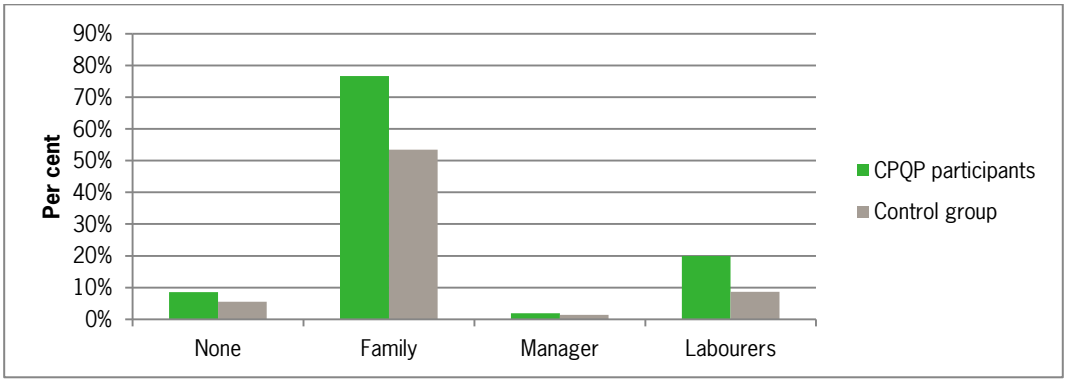


Figure 66 *Percentage of farmers sharing benefits with other parties.*
(N = 844)

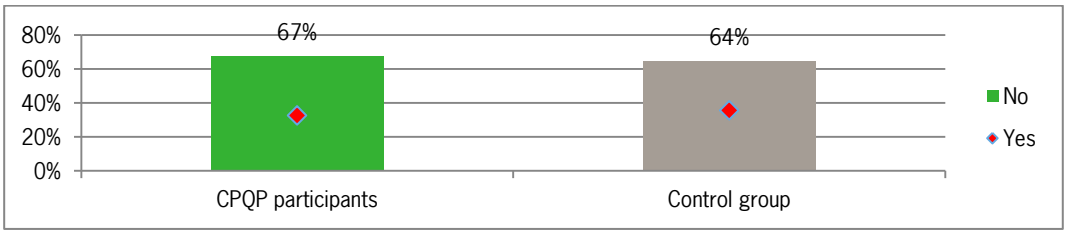


Figure 67 *Farmers wish for their children to continue cocoa farming.*

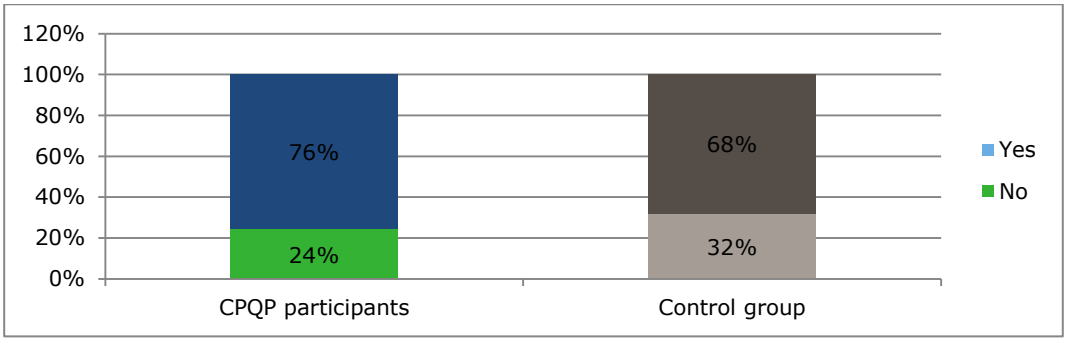


Figure 68 *Farmers expectation of continuing in cocoa farming.*

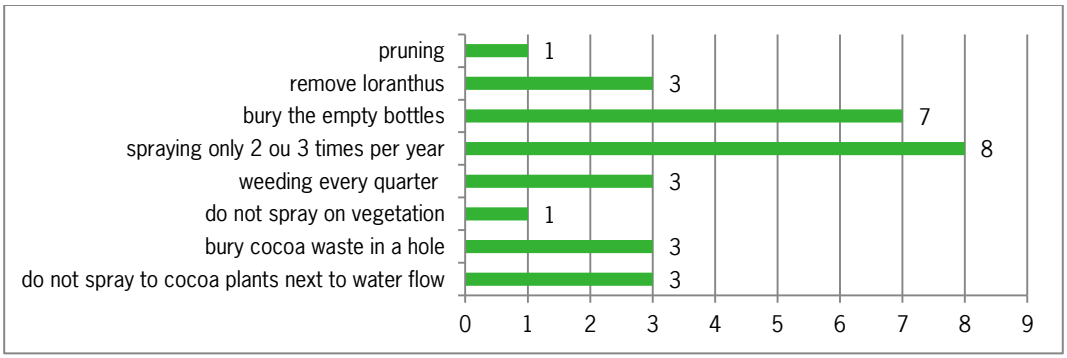


Figure 69 *Farmer's perceptions of agricultural practices which protect the environment.*

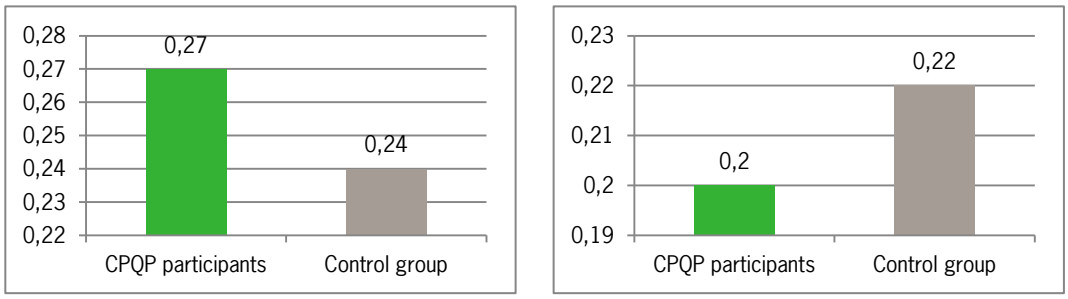
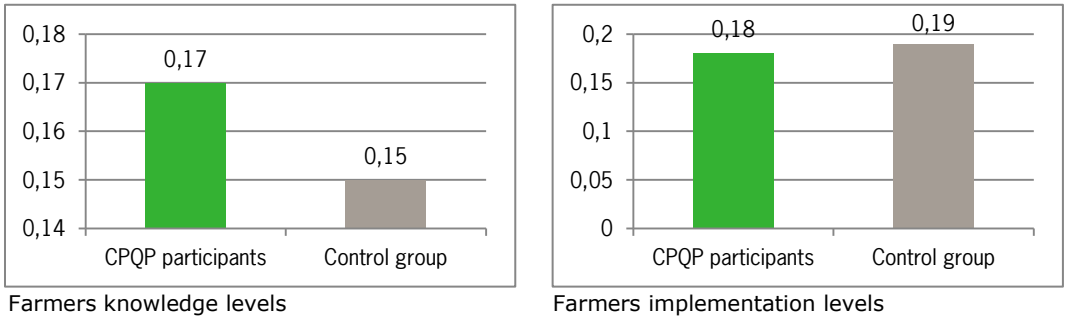


Figure 70 *Farmers' knowledge and implementation levels on water conservation measures.*



Farmers knowledge levels

Farmers implementation levels

Figure 71 *Farmers' knowledge and implementation levels of soil conservation measures.*

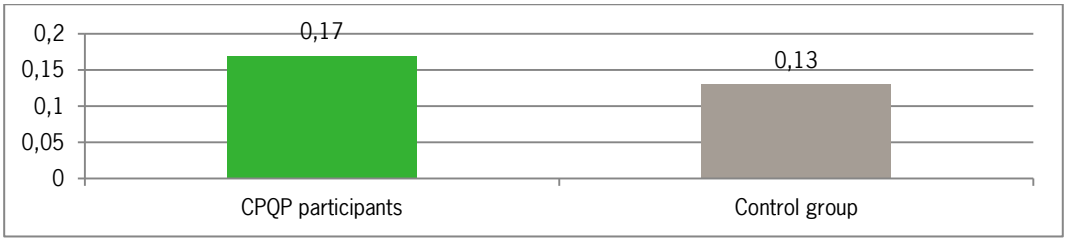


Figure 72 *Farmers' implementation levels of biodiversity conservation practices.*

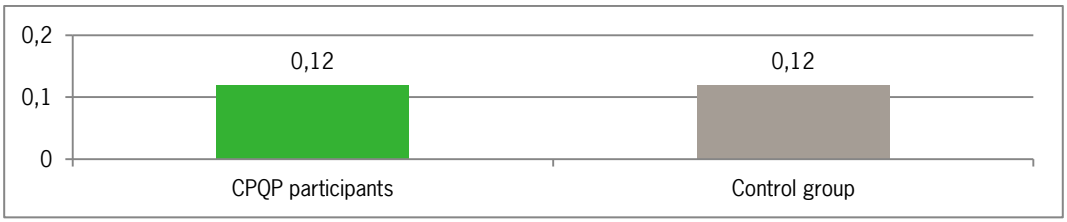


Figure 73 *Farmers' implementation levels of waste management practices.*

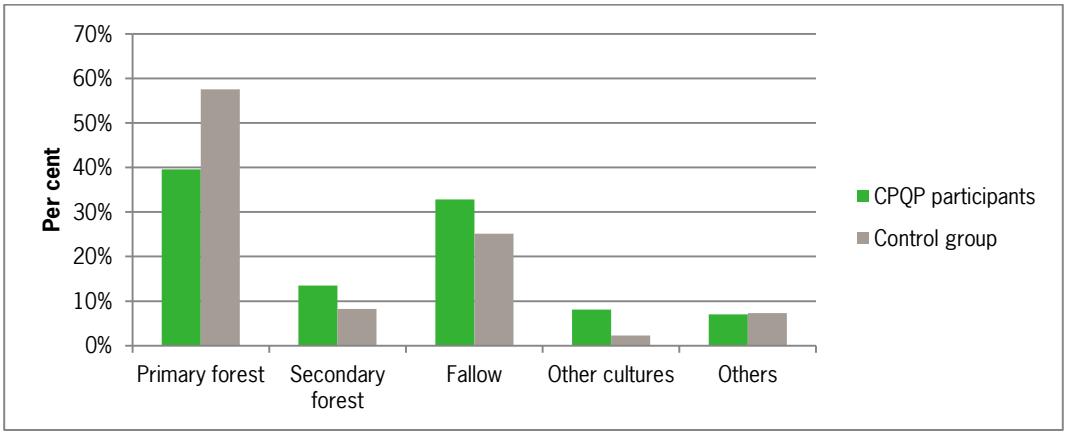


Figure 74 *Land use prior to cocoa farming.*
(N = 953 due to multiple responses)

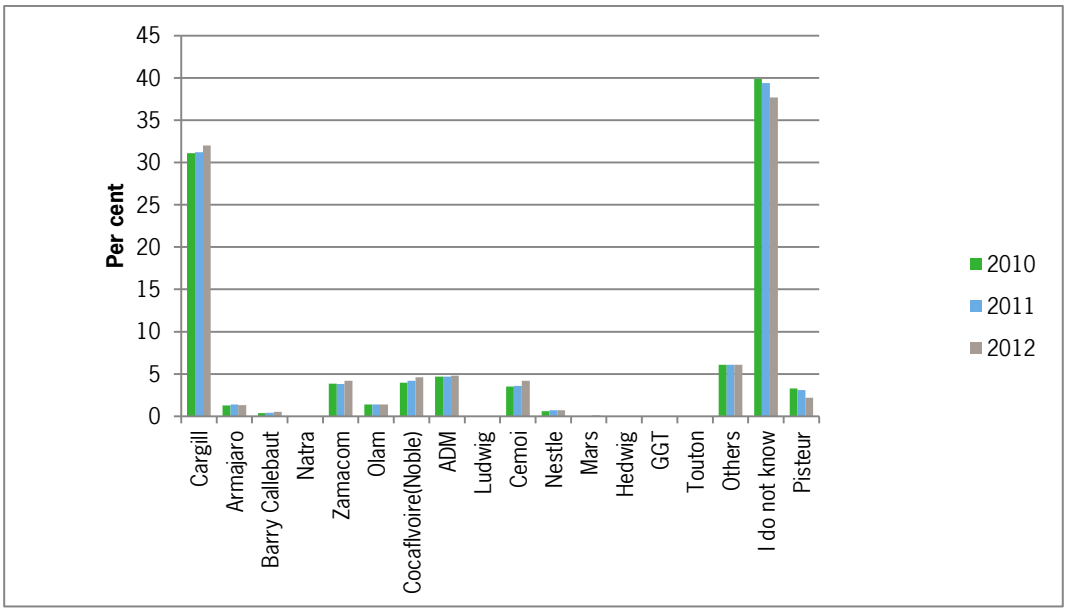


Figure 75 *Traders buying from producer groups according to members (2010-2011-2012).*

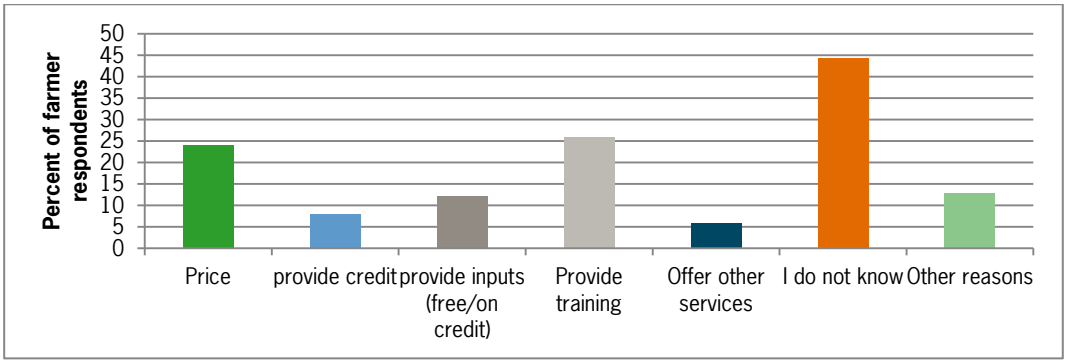


Figure 76 *Reasons why producer organisations sell to specific traders.*

(Note: multiple responses possible)

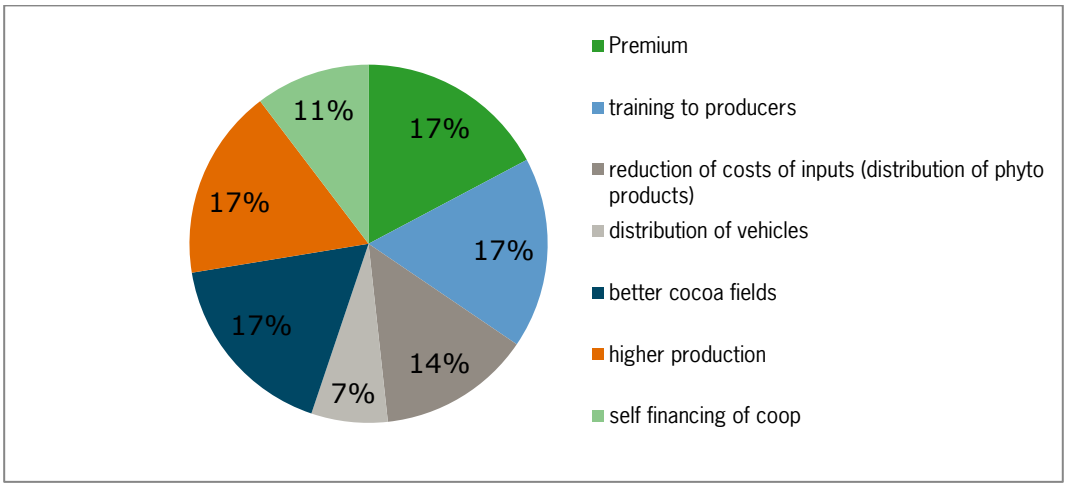


Figure 77 *Advantages for producer groups of participating in a certification programme.*

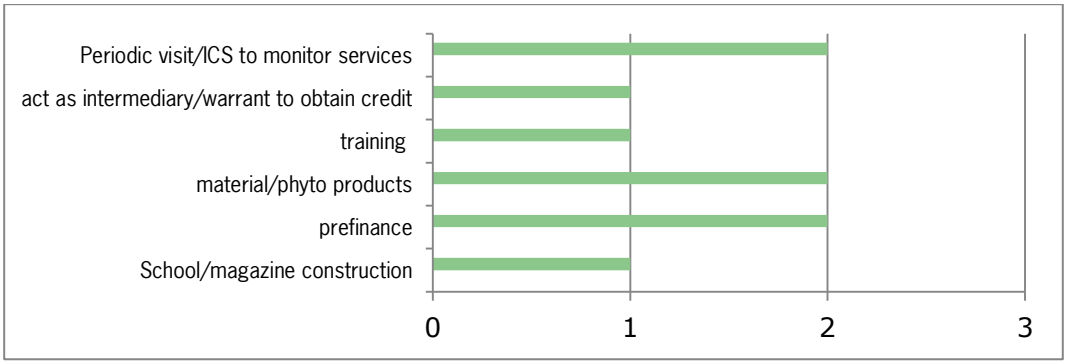


Figure 78 *Farmers' changes in access to inputs and services since the start of certification.*

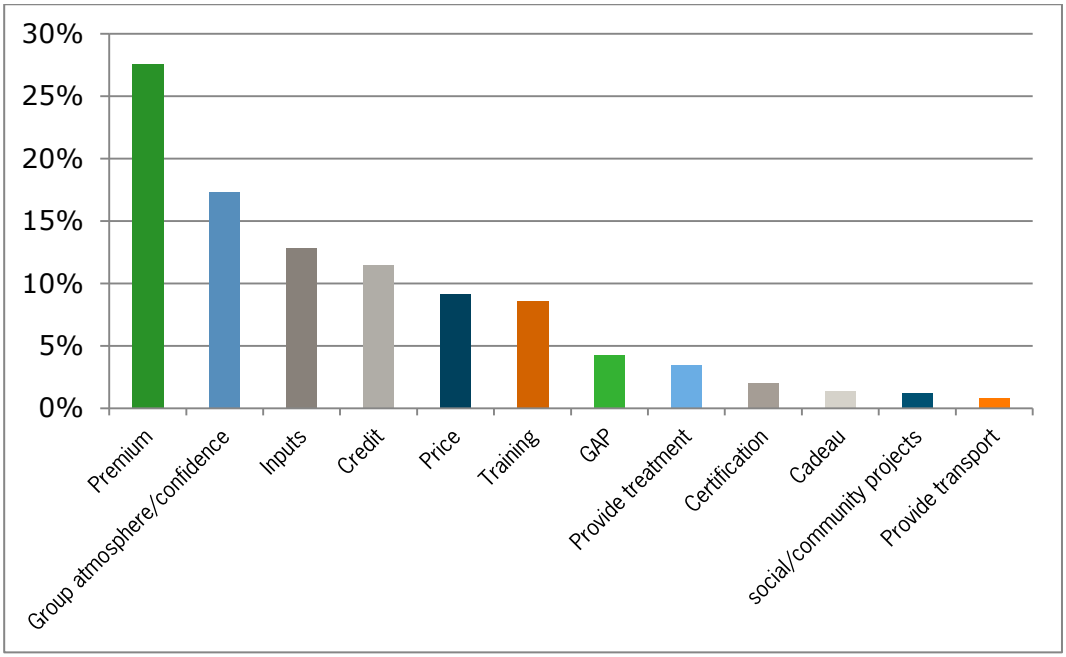


Figure 79 *Reasons why farmers sell to producer groups. (936 respondents, n=1348 multiple responses possible)*

Table 17

Farmers' knowledge and implementation scores.

Question number (farmer questionnaire)	Level of GAP knowledge	UTZ programme participants	Control group	Total
101	Production and practice÷: weeding	4%	12%	6%
105	Production and practice÷: record keeping	11%	7%	10%
103	Production and practice÷: soil conservation	16%	12%	15%
104	Production and practice÷: fertiliser use	17%	17%	17%
106	Production and practice÷: filed buffer zone	19%	18%	19%
100	Production and practice÷: crop protection products	21%	15%	20%
102	Production and practice ; pruning	30%	22%	28%
110	Production and practice: bean quality	31%	25%	30%
108	Personal protective equipment PPP	33%	26%	31%
107	Production and practice ; agro chemical use	34%	31%	33%
111	Child labour	35%	28%	33%
109	Production and practice ; cocoa production	39%	34%	38%

	Levels of implementation	UTZ programme participants	Control group	Total
93	Waste management	3%	5%	4%
89	Waste management	5%	4%	5%
76	Production and practice; black pod	6%	3%	5%
73	Production and practice÷: inputs	8%	13%	9%
69	Productivity	10%	5%	9%
81	Production and practice shade trees	11%	9%	11%
72	Production and practice; pruning	18%	19%	18%
91	Waste	19%	38%	23%
86	Soil & water management	20%	15%	19%
87	Soil water management	22%	13%	20%
75	Input use	23%	15%	21%
83	Production and practice shade trees	23%	16%	21%
88	Waste management	27%	27%	27%
92	PPP	27%	22%	26%
80	Production and practice ; drying	28%	34%	29%
74	Input use	30%	27%	30%
79	Production and practice fermentation	38%	30%	36%
78	Production and practice fermentation	41%	38%	41%
71	Production and practice weeding	42%	47%	43%
90	Waste management	42%	38%	41%
77	Production and practice ; harvesting pods	61%	63%	61%

Key 0% =low 100% = correct & high.

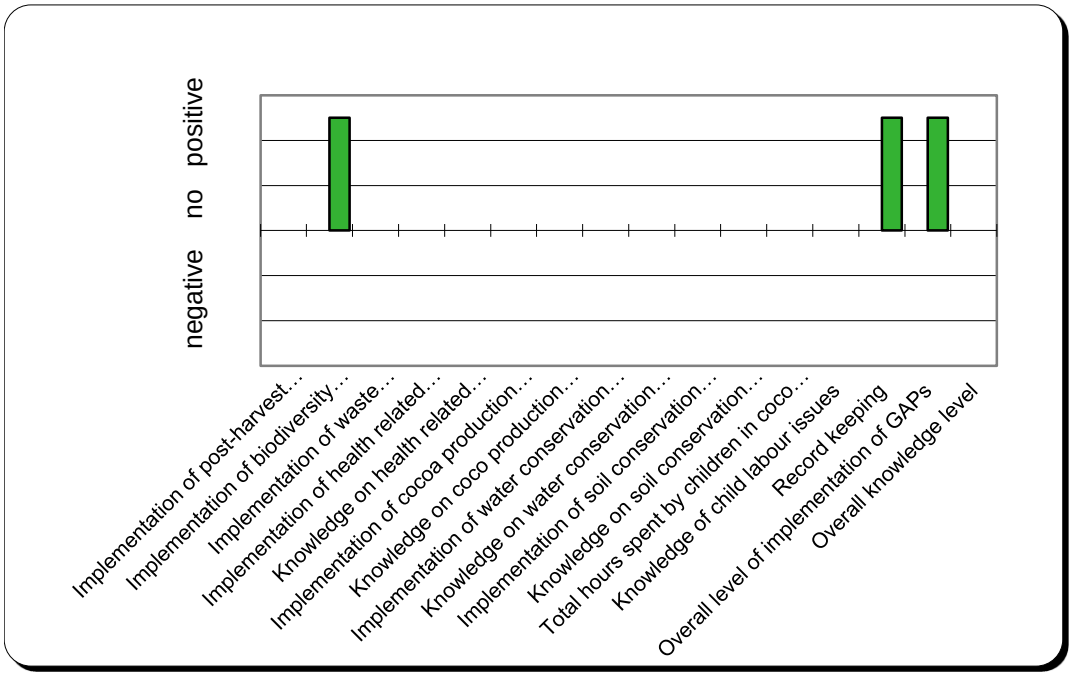


Figure 80 *Significant correlations between knowledge levels and implementation of GAPs & participation in UTZ Certification programme.*

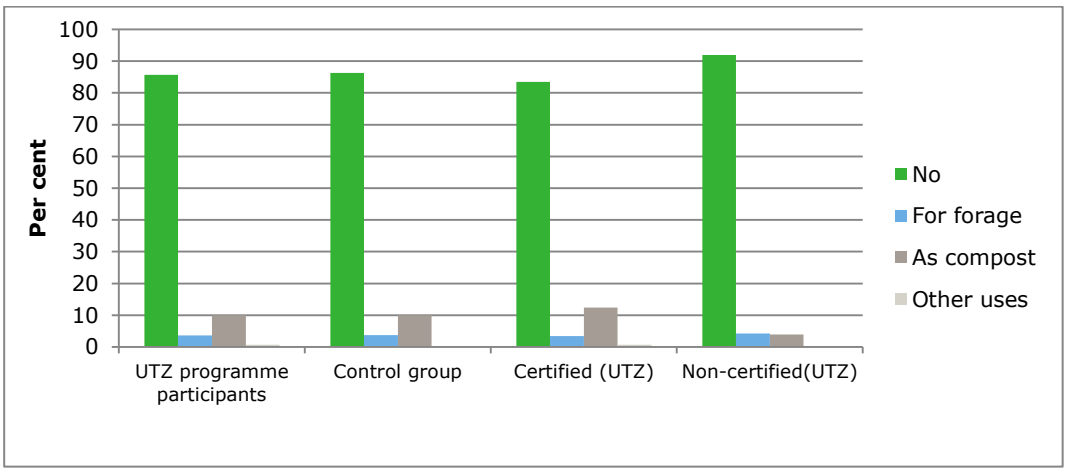


Figure 81 *Accidents during cocoa production activities for farmers in different phases of participation.*

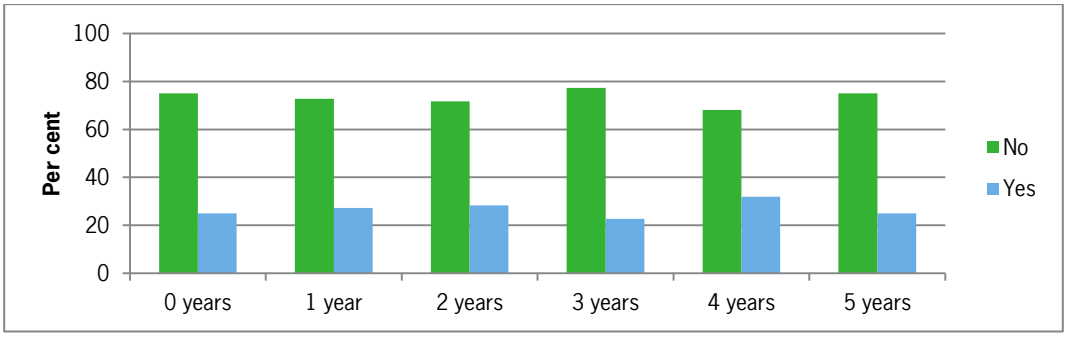


Figure 82 *Use of waste from cocoa production activities. (N = 938)*

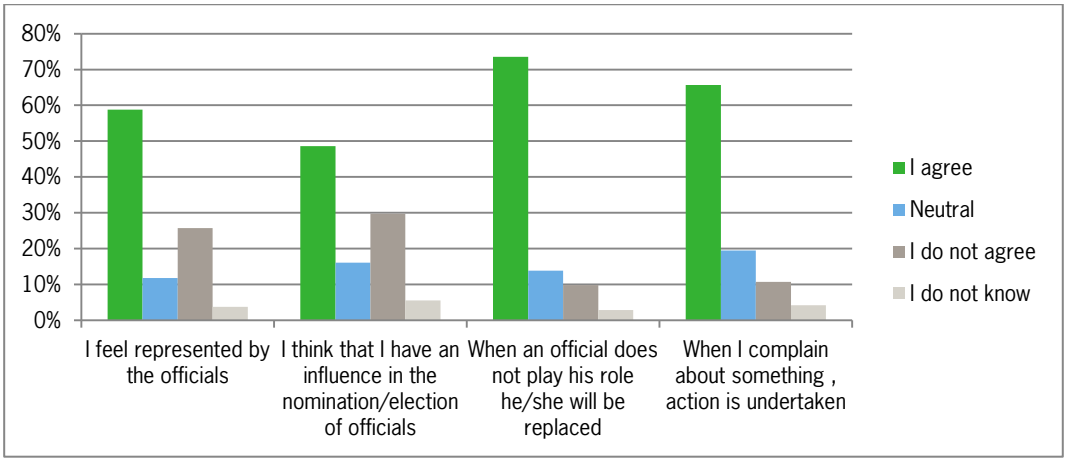


Figure 83 *Farmers perceptions of functioning of producer groups.*

Annex 13 Regression analyses

Regression methodology

To account for both fixed and random effects that may cause variations in knowledge and implementation scores, multilevel mixed-effect linear regression was used in which variables such as age, gender, and level of education were used to estimate fixed effects and explore similarities between the different groups, also to see whether there are selection bias. A separate indicator, the agro-ecological zone, was used to group variables to address effects that may be associated with climate and soil type. Correlations between variables and the length of participation in the programme were also conducted.
The stratified sampling procedure (agro-ecological zones, length of time participating in the programme and certified/non-certified, traders. This allows similarities in some characteristics to be taken account into the analysis. Propensity score matching (PSM) was not used as it would be extremely difficult given the many different treatments, and would require a much larger number of farmers to be interviewed to secure enough similar farmers for comparison (going beyond the time and budget constraints of this study. Also, as this is largely a baseline study with indications for impact, a PSM is not appropriate at this stage but may be possible with a subsequent impact assessment.

Indicator	Unit of measurement
Knowledge level	Score 0-1
Level of implementation of GAPs	Score 0-1
Productivity	Kg/ha
Farm efficiency	Economic input-output ratio
Quality	% rejects
Net income / continue/ follower	Net income, %, %
Livelihood	Satisfaction level
Labour rights	Compliance with Code of Conduct
Child labour (knowledge)	Knowledge score
Healthy and safe living and working conditions	Scores knowledge and implementation of practices
Maintained & improved quality of water and soil	Scores knowledge and implementation of practices
Effective waste management & reduction (cocoa production related)	Scores knowledge and implementation of practices
Protection restoration of natural habitats/biodiversity	Scores knowledge and implementation of practices
Inclusive programme	NONE
Stable producer groups providing better and reliable services	Satisfaction level with services
Sustainable practises rewarded by the market	Price premium

Regressions conducted

Explanatory variables taken into account in regression analysis:
1. age of the farmer
2. household size
3. farm ownership (creator, heir, manager, other)
4. knowledge score
5. score for implementation of practices
6. agro-ecological zone
7. duration of UTZ programme participation
8. whether farmers are UTZ Certified or not
9. whether farmers are RA certified or not
10. whether farmers are Fairtrade certified or not

11. duration of UTZ certification
12. duration of RA certification
13. duration of FLO certification
14. participation in UTZ certification programme
15. membership of a producer organisation
16. farm size (main farm and in total)
17. age of main farm
18. total input costs for different categories (planting material, fertiliser, pesticide, fungicide, herbicide)
19. total input cost per ha
20. participation in training programmes: Farmer field schools, certification, Field Apprenticeship training, community programmes, production programme, other programme)
21. support from traders to producer organisations with regard to:
    a. Certification support
    b. Cooperative capacity building
    c. Farmer training in the field
    d. Pesticide supply and treatment gangs
    e. Schools and literacy classes
    f. Access to credit and saving schemes
    g. Pre-finance and advance
    h. Pre audits
    i. Cooperative management skills
    j. Seedling supply
    k. Nursery and training
    l. Education
    m. Demonstration and pilots
    n. Fertiliser
    o. Social training such as on HIV aids, gender etc.
    p. Business training
    q. Fermentation
    r. Infrastructure e.g. sanitation
    s. Gender training

There was a high multicollinearity between the different support activities given by traders to the producer organisations, indicating that when one support activity has been implemented, often also many other activities have been implemented (support activities are closely correlated to each other). Trader support activities were assessed by conducting separate correlation tests, but the results are quite similar for all the different indicators. Real influence of trader support activities should be confirmed by subsequent measurements. Most of these support activities have negative relationships with the indicators. This could indicate that, in the baseline situation, such support activities are directed towards farmers who need such support the most, as they have relatively lower indicator values than farmers who do not receive such support. Because of the multicollinearity of these explanatory variables, the regression results are not included in the main text of this report.

Effect sizes as well as significance levels were calculated and are reported as the coefficient below to provide additional information alongside the significance level.

Regression results[28]:

Indicator	Positive relationships	Negative relationships
Knowledge level	- Area main farm (positive, 0.004): the larger the main farm the higher the knowledge level (but very small effect 1 ha adds up to 0,004 higher knowledge score) - Total area all farms (positive, 0.0015): idem (related to above) - UTZ Certified (positive, 0.062). UTZ Certified farmers have higher knowledge level than non-certified farmers (knowledge score is 0.062 higher for UTZ than for non-UTZ Certified farmers) - Duration of UTZ certification (positive 0.012): the longer a farmer is certified, the higher his knowledge score (one year extra leads to 0.012 higher knowledge score) - RA certified (positive 0.024). RA certified farmers have higher knowledge level than non-certified farmers (knowledge score is 0.024 higher for RA than for non-RA certified farmers) - Membership of a producer group (positive 0.076). Members of a producer group have a higher knowledge score than farmers who are not a member. - Agro-ecological zone (positive 0.017) Farmers in the excellent zone have a higher knowledge level than farmers who are not situated in the excellent zone - Assistance to producer organisation with gender training - Assistance to producer organisation with fertilisers	- FFS participation (negative, -0.037): FFS participants have lower knowledge level than non-participants. - Participation in Field Apprenticeship training (negative, -0.027): participants of Field Apprenticeship training have lower knowledge level than non-participants. - Assistance to producer organisation with pre-audits - Assistance to producer organisation with cooperative management skills - Assistance to producer organisation with cooperative capacity building - Assistance to producer organisation with pre-financing
Level of implementation of GAPs	- Knowledge (positive 0.054) the higher the knowledge score, the higher the implementation score - Length of UTZ programme participation (positive, 0.007). the longer a farmer participates, the higher the score. Small effect! - Certification programme (positive 0.013): participants of a certification programme score better than non-participants). - participation in other programme (positive 0.027): participants of 'other programme' score better than non-participants. - UTZ certification (positive 0.021): UTZ Certified farmers score better than non-UTZ	- UTZ programme participation (negative -0.012). UTZ programme participants have a lower implementation score than the control group. - Assistance to producer organisation with cooperative management skills

[28] Results of the regression analysis, indicating correlations between different indicators. The coefficient (0.005 e.g.) indicates the size of the effect**.** Only significant effects are included based on 'when other variables remain equal'. See Chapter 3 on the methodology.

	Certified farmers. - Duration of UTZ certification (positive 0.01): the longer a farmer is certified, the higher his implementation score (one year extra leads to 0.01 higher knowledge score) - Membership of a producer group (positive 0.037). Members of a producer group have a higher implementation score than farmers who are not a member. - Ownership (positive 0.019). Managers have a higher implementation score than respondents who are not managers - Agro-ecological zone (positive 0.007) Farmers in the excellent zone have a higher implementation level than farmers who are not situated in the excellent zone	
Productivity	- Number of persons in household (positive 4.94): the more people in the household, the higher the productivity - Age of the main farm (positive 3.24): the older the age of the main farm, the higher the productivity, this may also be linked to approx. 1/3 of farmers replacing old trees29. Producer group members renewed their trees more often than non-group members. - RA certification (positive 118.19); RA certified farmers have higher productivity than non-RA certified farmers - UTZ certification: (positive 151.93) UTZ Certified farmers have higher productivity than non-UTZ Certified farmers - zone: farmers in the excellent zone have a higher productivity than farmers who are not situated in the excellent zone. - Creators of the cocoa farms have a higher productivity than other types of owners combined. - Producer group membership: members have a higher productivity than farmers who are not a member.	- Age of the farmer (negative -4.097): the lower the age of the farmers, the higher the productivity - Area of the main farm (negative -12.65): the smaller the main farm, the higher the productivity - Marginal zone (negative -195.49): Farmers situated in a marginal zone, farmers have lower productivity than farmers who are not situated in a marginal zone. - Field Apprenticeship training (negative -81.74). Participants in Field Apprenticeship training have lower productivity than non-participants. - Farmers in marginal zone have a lower productivity than farmers in other zones. - Farmers in the good zone have a lower productivity than farmers in other zones. - Heirs have a lower productivity than the other types of owners combined - Assistance to producer organisation with cooperative management skills - Assistance to producer organisation with training farmers in the field - Assistance to producer organisation with pesticide supply / treatment gangs - Assistance to producer organisation with pre-financing - Assistance to producer organisation with credit and savings schemes - Assistance to producer organisation with schools/literacy classes
Farm efficiency	- Size of main farm (positive, 1.49); positive correlation, with the larger the size of the main farm, the higher the efficiency	- Field Apprenticeship training (negative -3.67). Participants of Field Apprenticeship training have lower productivity than non-

[29] 325 of the 944 farmers indicated renewed their trees in the last 2 years. This may be linked to training and replanting and rejuvenation programmes by traders and government agencies.

	- Duration of UTZ programme participation (positive 0.967): the longer a farmer participates in the programme the higher his efficiency - Size of the total farm (positive 1.11): the larger the size of the total cocoa farm, the higher the efficiency - RA certification (positive 2.37): RA certified farmers have a higher efficiency than farmers who are not RA certified.	participants. - Assistance to producer organisation with pre-audits - Assistance to producer organisation with cooperative management skills - Assistance to producer organisation with training farmers in the field - Assistance to producer organisation with business training - Assistance to producer organisation with pesticide supply / treatment gangs - Assistance to producer organisation with pre-financing - Assistance to producer organisation with schools/literacy classes - Assistance to producer organisation with seedling supply - Assistance to producer organisation with infrastructure, e.g. sanitation
Net income from cocoa production (main farm)	- size of main farm: (positive 257946); the larger the main farm, the higher the net-income - Implementation score: the higher the score, the higher the net income from cocoa. - size of total cocoa farm: (positive 195031): the larger the size of the total cocoa farm, the higher the net income - productivity (positive 2363); the higher the productivity, the higher the net income - heirs have a higher net-income than other types of owners combined. - the longer a farmer is certified, the higher his net-income is.	- age of the farmer (negative – 14800) the older the farmer, the lower the net income - Field Apprenticeship training (negative -310819): Participants of Field Apprenticeship training have lower net incomes than non-participants. - Assistance to producer organisation with pre-audits - Assistance to producer organisation with cooperative management skills - Assistance to producer organisation with pesticide supply / treatment gangs - Assistance to producer organisation with pre-financing - Assistance to producer organisation with access to credit and saving schemes - Assistance to producer organisation with infrastructure, e.g. sanitation - Assistance to producer organisation with schools/literacy classes - Assistance to producer organisation with seedling supply
Livelihood (score for satisfaction level)	- knowledge (positive 0.86); the higher the knowledge score, the more a farmer is satisfied with his livelihood - Farmers in excellent zone: higher satisfaction than farmers in other zones combined - Area total (positive 0.016) the larger the size of the total cocoa farm, the higher the satisfaction level. - Productivity (positive but very small effect 0.0001). the higher the productivity, the higher the satisfaction level. - RA (positive 0.11) RA certified farmers are more satisfied than non-RA certified farmers - UTZ (positive 0.45) UTZ Certified farmers are more satisfied than non-utz certified farmers	- No. of people in household (negative, very small effect -0.0055): the more people in household, the lower satisfaction with livelihood) - Farmers in good zone: lower satisfaction score than farmers in other zones combined - Certification programme (negative -0.15) participants of certification programme have lower satisfaction than non-participants. - Other programme: (negative -0.301): participants of other programme have lower satisfaction than non-participants. - Assistance to producer organisation with

		cooperative management skills - Assistance to producer organisation with cooperative capacity building - Assistance to producer organisation with nursery training - Assistance to producer organisation with business training - Assistance to producer organisation with pre-financing - Assistance to producer organisation with access to credit and saving schemes - Assistance to producer organisation with social training - Assistance to producer organisation with schools/literacy classes - Assistance to producer organisation with seedling supply
Stable producer groups providing better and reliable services	- knowledge level (positive 0.63) the higher the knowledge level, the more satisfied with their producer group. Members of producer groups also have statistically significantly higher knowledge levels than non-members! It is not possible to indicate which variable influences each other. - participation in community programme (positive 0.22): participants of a community programme are more satisfied with producer group than non-participants. - whether farmers replanted trees (positive 0.12): farmers who replanted their trees are more satisfied than farmers who did not. BUT: producer group members also renewed their trees more often than non-members! It is unclear what influences satisfaction. Farmers in the programme may have had better access to trees. - UTZ certification (positive 0.11): UTZ Certified farmers are more satisfied with the services of their producer group than non-certified farmers. - farmers in the excellent zone have higher satisfaction levels than farmers in other zones combined.	- Assistance to producer organisation with pre-audits - Assistance to producer organisation with certification support - Assistance to producer organisation with cooperative management skills - Assistance to producer organisation with cooperative capacity building - Assistance to producer organisation with farmer training in the field. - Assistance to producer organisation with pre-financing - Assistance to producer organisation with access to credit and saving schemes - Assistance to producer organisation with fermentation

Notes

A regression does not demonstrate causal effects.

Annex 14 Farm ownership and revenue sharing models in Côte d'Ivoire

Six broad categories of farm ownership, responsibility and revenue sharing are found in Côte d'Ivoire:

1. Ownership (founder) (*fondeur*)
   This implies ownership of both land and crops (i.e. cocoa, rubber, coffee, oil palm, etc.). Both Ivorian's and Burkinabe can own land and crops.

2. Manager (*Gestionnaire)*
   A manager of a field(s), which generally belongs to someone in their extended family i.e. father or mother or be managed after a parent's death while the family sorts out inheritance. Informally the manager receives one third of the revenue. Generally higher amount of revenue is obtained when managed on behalf of a father than a mother, due to cultural norms of respect and tendency not to negotiate with one's mother.

3. Inheritance or inheritance with ownership (*Héritier, propriétaire)*
   After division of land form inheritance, ownership is complete. Depending upon the region, women as well as men may inherit. In the South and South West of Côte d'Ivoire women inherit more frequently, whereas in other areas only men tend to inherit. Burkinabe women generally have no inheritance rights. Whilst Burkinabe have purchased land in Côte d'Ivoire, generally this is customary and they do not have officially registered land title deeds.

4. Worker with 33% revenue share (*Abusan main d'oeuvre en remuneration de 33%*)
   Workers on productive land with no ownership rights or claims. They receive 1/3 of revenues from the owner of the land worked, the owner keeps 2/3. The majority of workers are male. It is estimated that only a very small proportion of women work as abusan.

5. Worker with 50% share of revenue (*Abunun main d'oevre en renumeration de 50% utilisation de terre*)
   Workers on productive land with no ownership rights or claims. They receive 1/2 of revenues from the owner of the land worked, the owner receives 50%. If the land is ''bad fields'' abunun works with 50% of revenues and abunun also with 50%.

6. Under guarantee (*Prise en garantie – garantie*)
   This is an arrangement either between two farmers, between farmer and buyer or between farmer and somebody with financial resources, where the land and crop is used as a guarantee for a loan. The person who has received the farm as guarantee may use abusan workers to farm the land. Income from the land and crop is the property of the person who has the land in guarantee. Land under guarantee can become the property of the lender in the case of a long-term loan and when an agreement is reached between the two parties. It is also possible that the owner works in the field and has no abusan.

Classified forest (*foret classée)*
Classified forest is the property of the state and if cocoa is farmed in classified forest it is effectively illegal. In some cases is hoped that in time the state will declassify and the farmer becomes the owner.

Annex 15 Overview of certification and activities in the cocoa sector in Côte d'Ivoire

Table 18

Overview of certification and activities in the cocoa sector in Côte d'Ivoire 2008 to 2013.

Main implementing organisation(s)	Project, programme or activities
International organisation's	
World Cocoa Foundation (WCF)	Livelihood programme Cocoa Link30 WCF Empowering Cocoa Households with Opportunities and Education Solutions (ECHOES) WCF African Cocoa Initiative (WCF/ACI) is a public-private partnership, bringing together WCF, cocoa industry members, the Sustainable Trade Initiative (IDH) and U.S. Agency for International Development through its Global Development Alliance Certification Capacity Enhancement (CCE) project African Cocoa Initiative (ACI) African Cocoa Initiative (ACI)
International Cocoa Organisation (ICCO)	Capacity Building Programme on Pesticides Residues and other Harmful Substances in Cocoa in Africa Cocoa productivity and quality improvement: a participatory approach Analysis of the value chain in cocoa producing countries Cocoa germplasm utilisation and conservation: a global approach Improvement of cocoa marketing and trade in liberalising cocoa producing countries Supply chain management for total quality cocoa: pilot phase Pilot Project on Price risk management for cocoa farmers Preventing and managing the spread of cocoa pests and pathogens: lessons from the witches' broom disease Capacity building programme on pesticide residues and other harmful substances in cocoa in Africa Cocoa of Excellence: promoting diverse high quality cocoa origins SPS capacity building in Africa to mitigate the harmful effects of pesticide residues in cocoa and to maintain market access
United Nations Development Fund (UNDP)	Green Commodities Facility, Côte D´Ivoire Sustainable Cocoa Initiative NORAD, World Cocoa Foundation (WCF), International Cocoa Initiative (ICI), Echoes – Youth Education and Livelihoods Programme, UNDP and the Associations of Chocolate Manufacturers from Denmark, Finland, Norway and Sweden
USAID	Towards Child Labour Free Cocoa Growing Communities in Côte d'Ivoire and. Ghana through an Integrated Area Based Approach
ILO	International Cocoa Initiative
German Technical Cooperation (GIZ)	PRODEMIR – Programme de Développement Economique en Milieu Rural
GIZ, USAID, ANADER, STCP, Kraft, Armajaro	Market-oriented promotion of certified sustainable cocoa production Côte d'Ivoire (2005-2009)
Certification schemes	
UTZ + Solidaridad	Certification
RA + GIZ	
Fairtrade + Agro Eco Louis Bolk Institute & Rabobank, the Dutch structure Control Union for organic certification and FAIR TRADE	With private sector partnerships and NGOs
Organic + Agro Eco Louis Bolk Institute	
Private sector	
Cargill, ADM, Barry Callebaut, Armajaro-CI, Outspan, Ecom, CEMOI & farmers	Corporate programmes with consultants, cabinets, ANADER
Olam International and Blommer	Alliance between cocoa farmers in Côte d'Ivoire, Olam International and Blommer

[30] http://www.nestlecocoaplan.com/nestle-joins-cocoalink-in-the-cote-divoire/

Main implementing organisation(s)	Project, programme or activities
Chocolate& farmers	Chocolate
Mondelez (Cadbury), Conseil du Café Cacao (CCC), CARE farmers	Cocoa Life programme to help farmers increase sustainable cocoa production and create thriving communities
Nestlé & farmers	Cocoa Plan, Action plan responsible sourcing CNRA under the initiative of creating added value
Kraft Foods and Hans Neumann Stiftung& farmers	Sustainability alliance with Rainforest Alliance Market Oriented Promotion of Certified Sustainable Cocoa
Mars& farmers	Sustainable Cocoa Initiative (Cocoa Development Centers (CDC) and Cocoa Village Clinics (CVC): rehabilitation of old and aging farms with good planting material, soil fertility management, solid agricultural practices including pest and disease control IMPACT project with Government of CI, ICI, AIECA, AFRICARE, SOCODEVi, STCP, RAINFOREST ALLIANCE, IFESH, INADES, BFCD
ADM, Barry Callebaut, Cargill, Ferrero, The Hershey Company, Kraft Foods, Mars Incorporated, and Nestlé& farmers	Framework of Action: Harkin-Engel Protocol (Responsible cocoa) and industry partnership and Public Certification: development of a public certification process.
National Confectioners Association, CAOBISCO, ECA& farmers	Regional Trade Associations and their memberships
Partnerships	
Sustainable Trade Initiative (IDH) & private sector partners	Cocoa Improvement Programme 1 (CIP1) & CPQP
BlommerLOMMER, Petra Foods / Delfi brand, CEMOI and Mars	2012 Memorandum of Understanding confirming their commitment to sustainable cocoa farming in Côte d'Ivoire combining 209 PACTS (Processor Alliance for Cocoa Traceability and Sustainability) and MARS, Vision For Change via Cocoa Development Centres and PACTS Centres.
Signatories include governments and representatives of the cocoa industry and witnesses include social activists, NGOs and labour unions	International Cocoa Initiative (ICI) to eliminate the worst forms of child labour and forced labour and the Harkin Engel Protocol
Mars Incorporated, Hershey Company, Kraft Foods and Armajaro Trading	Agriculture Development Programme (CAADP)
Institut Européen de Coopération et Développement lECD/Cargill/M AH, Dutch Ministry of Agriculture, ANADER IECD, PEFACI; Ministry of Agriculture, Department of Animal Production, Ministry of Education, Plate-forme des Ecoles Familiales Agricoles de Côte d'Ivoire (PEFACI)	Projet Ecoles Familiales Agricoles (EFA)
Research	
International Institute for tropical Agriculture (IITA) + USAID, Primature, MINAGRI, CGFCC, FIRCA, GEPEX, ANADER, CNRA ONG, BFCG, INADES, SOCODEVI, Rainforest Alliance, BFCD; GTZ, Technoserve	STCP (Sustainable Tree Crop Programme)
CIRAD & CEMOI	Creation of the cocoa centre of fermentation and sun drying
ICRAF (World Agroforestry Center)	Vision for change Farmer training programme
Tulson Payson Center	Annual Survey of Child Labor in the Cocoa-Growing Areas of Côte d'Ivoire and Ghana.
FAFO	Research Programme on Trafficking and Child Labour. Child labour and cocoa production in West Africa
	Côte d'Ivoire Sustainable Cocoa Initiative (CISCI)
Government Côte d'Ivoire	
Côte d'Ivoire Exportation Professional Association (APEXCI), Cocoa & Coffee Interprofessional Board (CICC), Raw Materials Interministerial Board (CIMP), CAISTAB	Implements National Development Plan and regulate all activities of coffee-cocoa sectors
Ministry of Agriculture (MINAGRI)	Fonds Interprofessionnel pour la Recherche et le Conseil Agricole (FIRCA)
Cocoa and coffee management Council/ Conseil du Café Cacao (CCC)	Côte d'Ivoire quality cocoa control programme National Programme of Fight against disease of the Cocoa Swollen Shoot
Centre National de Recherche Agronomique (CNRA)	National agricultural centre conducting agronomical research
SOCODEVI, ANADER; NGOs; producer groups	Mutual and cooperative partnership programme (PPCM)
National Agency for Rural Development (ANADER)	Extension services, promotion of farmer's skills and entrepreneurship by designing and implementing appropriate tools and conducting agricultural extension services.

Main implementing organisation(s)	Project, programme or activities
	Fight against disease Swollen Shoot (Pilot Project) Project certified sustainable cocoa production
Information Programme on the Cocoa and Coffee Markets (PRIMAC).	Programme for the intensification of local processing 50% of the overall cocoa production in the year 2005, etc.
Ministry of Agriculture (MINAGRI)	Master Plan for Agricultural Development 1992-2015 (PDDA)
Comité de gestion de la filière Café Cacao (CGFCC)	Cocoa-related institutions
Government, Ministry of Agriculture (MINAGRI)	Member of COPAL (Alliance of Cocoa Producing Countries) COPAL activities
NGOs	
Oxfam	Behind the Brands - Cocoa Case Studies
World Vision	Anti-Child labour campaigns
Solidaridad	Cocoa Improvement Program

Annex 16 Photos

Photo 4 *A cocoa (Theobroma cacao) pod and beans.*

Photo 5 *Members of the WUR and A & CV research team, Soubré, November 2012.*

Photo 6 *Data collection: interview using the producer questionnaire.*

Photo 7 *Multiple partnership activities at CAYAWA, an UTZ Certified producer group.*

Photo 8 *ANADER training at COOPAGNY cooperative.*

Photo 9 *Multiple certification.*

Photo 10 *Inclusive practices; a lead farmer passing on training at the cooperative (COOPAGNY).*

Photo 11 *Influencing factors; multiple projects.*

Photo 12 *Influencing factors; proximity and ease of accessing markets.*

Photo 13 *A female cocoa farmer.*

Photo 14 *Implementation of GAP: A waste pit.*

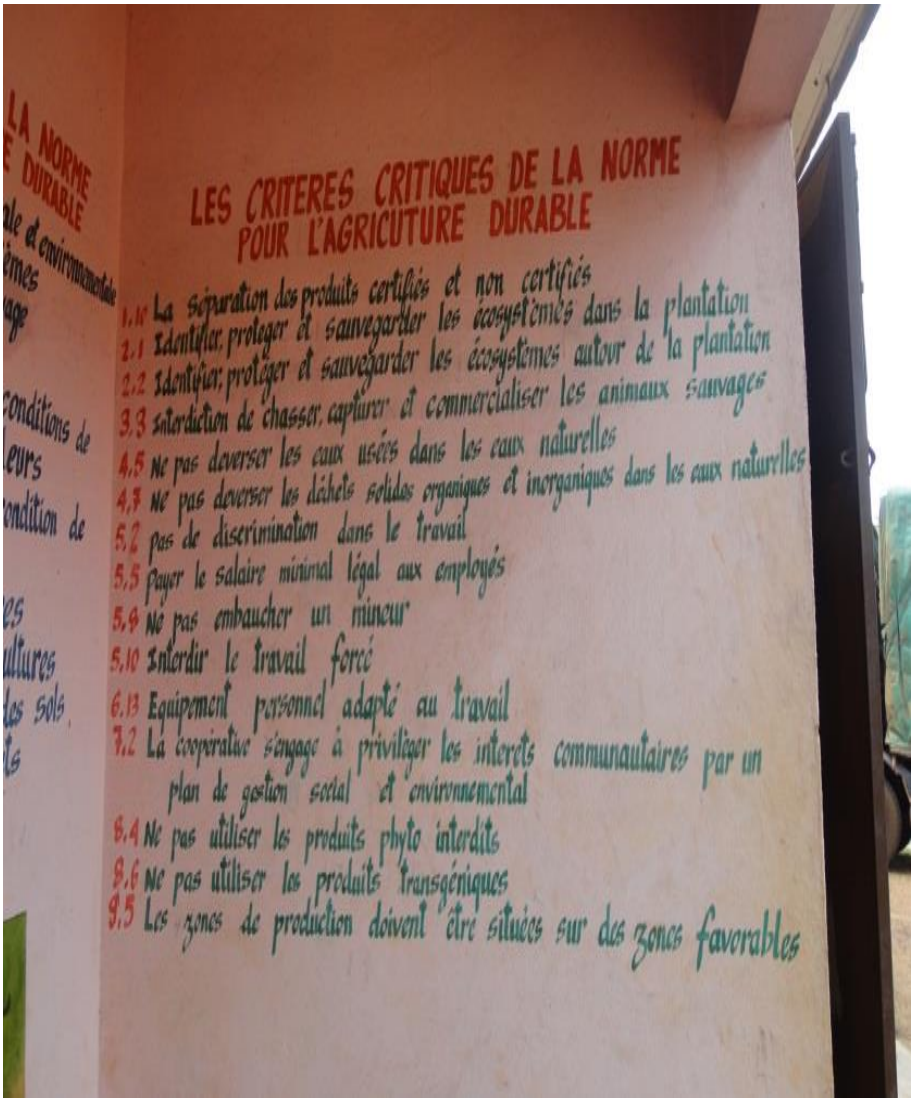


Photo 15 *Knowledge about GAP, at producer group level.*

Photo 16 *Implementation of GAP: shade trees.*

Photo 17 *Good agricultural practices enshrined in the Code of Conduct.*

Photo 18 *Market rewards: Ceremony to distribute the premium.*

Photo 19 *Producer groups and traders paying out certification premiums.*

Photo 20 *Producer group services: Careja cooperative nursery.*

Photo 21 *Producer group services: School financed by Coopaga cooperative from UTZ premiums.*

Photo 22 *Child labour: Prohibited activities at CEPO cooperative.*

Photo 23 *Healthy and safe working conditions: COOPAGA cooperative health centre.*

Photo 24 *Healthy and safe working conditions: cocoa treatment .*

Photo 25 *Improving farm efficiency: Access to crop protection products at CEPO cooperative shop.*

Photo 26 *Quality: Drying beans.*

Photo 27 *Profitability; making the balance.*

Photo 28 *Access to markets: COOPAGNIPI cooperative truck.*

Photo 29 *Maintaining soil quality: COOPAGANY fertiliser shop.*

Photo 30 *Waste management on-farm.*

Photo 31 *CANWORI cooperative cocoa and shade tree nursery.*

Photo 32 *Workers at COOPAGRO cooperative.*

Photo 33 *Cocoa pods.*

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LEI Report 2014-016

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LEI Report 2014-016
ISBN 978 90 8615 679

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