

Towards Sustainable Cocoa

Assessment of Cargill and Solidaridad cocoa farmer support activities in
Côte d'Ivoire 2008-2012



2 Improving sustainability in the cocoa supply chain

Since 2008, Cargill BV and Solidaridad have collaborated in a programme in Côte d'Ivoire that aims to improve sustainability in the cocoa supply chain. To achieve that goal, support activities have been provided to cooperatives and their farmer members. This joint effort started as a small-scale initiative focusing on two cooperatives. By the end of 2012 it had grown into a large-scale programme reaching out to 93 farmer groups across the country, encompassing 60,000 farmers. Over 41,000 farmers had directly participated in different phases of training and 36,540 farmers were UTZ Certified by the end of 2012.

Certification is viewed as an important tool to create, communicate and transfer value through the supply chain. The aim of training and supporting farmers to progressively implement sustainable production and management practices through a sustainability standard or standards is to increase farmer productivity and efficiency. By creating more effective farmer organisations, the programme aims to link farmers more directly into supply chains for certified quality cocoa, leading to more value being retained in the local community and enhancing transparency in the chain.

This document provides a baseline of the situation as of 2013 and can also be used to measure changes in the indicators in future impact assessments.



- 4 How farmers and their communities are supported
- 6 What the evaluation shows
- 12 Lessons learned and recommendations
- 18 Assessment approach
- 20 Overview of impact indicators



4 How farmers and their communities are supported

Four main types of support activities were implemented:

1. Improvement of good agricultural practices, knowledge and skills

Solidaridad trained the Ivorian Agency for Rural Development (ANADER) to train 41,109 farmers and set up 1,110 Farmer Field Schools (Champs écoles) by the end of 2012. The ten-month Farmer Field Schools provide training to groups of farmers in Good pre- and post-harvest Agricultural Practices (GAP) such as pruning, renewal of tree stock rational input use. Farmers also learned cocoa fermentation methods and drying. The schooling included training on the contents of the UTZ Certified Code of Conduct. In 2012, Cargill started collaborating with Solidaridad, MARS and ICRAF to set up Cocoa Development Centres (CDC) and Village Cocoa Clinics (CVC) and started demonstration farms to assist farmers to improve their knowledge and skills.

2. Organizational development

Cargill and Solidaridad supported setting up and the professionalization of cooperatives and provided training for cooperatives to obtain the UTZ Certified certificate. Cargill's in-house staff provide ongoing support to cooperatives, including a salary and training for group managers, equipment, helping cooperatives prepare for audits and to respond to corrective measures. Solidaridad supported Cargill's local staff and ANADER to strengthen their capacities and upscale their activities.

3. Service delivery to farmers

Farmers were trained to establish and maintain cocoa nurseries, with 600,000 seedlings provided in 2012. Cargill partnered with Syngenta and ANADER in 2012 to supply pesticides on a credit basis to farmers and train 34 cooperatives on safe pesticide use. The CDCs and CVCs provide farmers with access to affordable seedlings, fertilizers and pesticides. Cargill also encourages cooperatives to set up savings and loans groups.

4. Community and social programme

In Farmer Field Schools and in UTZ Certified Code of Conduct training, farmers learn about social aspects such as child labour, the importance of ensuring children's education and HIV/AIDS. Solidaridad helped set up Learning Groups (Group d'apprentissage) from 2010 to 2011. These provided 300 women with information and training on health issues, water and sanitation, income management, safe pesticide use and child labour. In 2010 Solidaridad supported one cooperative to develop a nursery with 15,000 cocoa plants, currently run by 30 female farmers.



Cargill is a founding member of an independent scheme certifying the sustainability of cocoa farming by working with farmer groups to implement agricultural, social and environmental best practice. UTZ Certified producer groups comply with the UTZ Certified Code of Conduct and are annually inspected by independent third party auditors.

"Before I produced between 500 and 800 kg from two hectares, in the last season I did one tonne. With certification, we learned to love our plantations. Before, we hardly put our feet there. It's a matter of tactics. Now we go more often." Male farmer, Guitry.

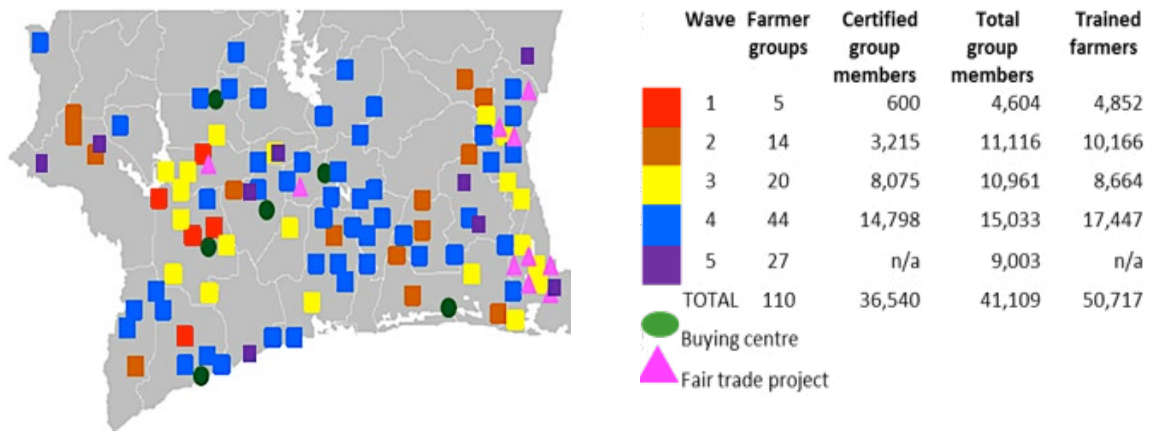


Figure 1: Cooperatives participating in support activities in Ivory Coast

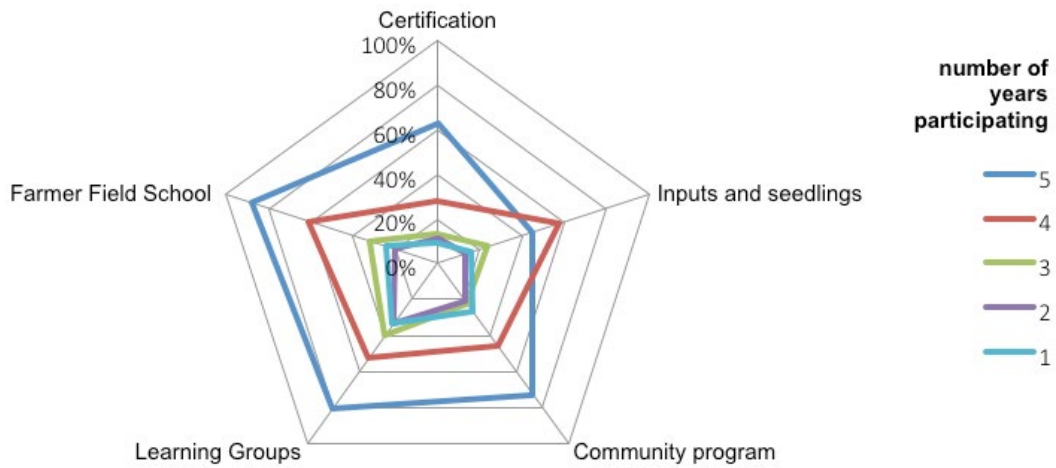


Figure 2: Percentage farmers participating in support activities



The programme has effectively reached many farmers

The support activities have provided building blocks for a programme that now reaches 60,000 cocoa farmers. The number of farmers participating in the programme has almost doubled each year since 2008. The majority of farmers participating in the programme are generally older men who own their farms (similar to a typical Ivorian cocoa farmer), and most are members of cooperatives. Due to the focus of the programme on farmers registered with a cooperative, women, youths and workers on cocoa farms have been included less often. Cargill and Solidaridad are aware of this and have addressed this by focusing more specifically on women in recent training and empowerment activities.

Quality and quantity of cocoa has increased

On average 98% of the beans sold by farmers to their cooperative meet quality requirements: the rejection rate in 2012 was 2%. Cooperative managers and Cargill reported that quality had increased since certification. The weather, which has been favourable prior to the survey, and the national market reform are also likely to have influenced quality increases. An encouraging finding is that farmers attributed productivity improvements to the programme and certification. Farmers' productivity is around 493 kg per hectare. Productivity rates were similar for farmers who are UTZ certified and not yet certified farmers, and between farmers in different agro-ecological zones. However, farmers participating longer in the programme have higher yields per hectare than farmers entering the programme more recently. As changes to farming methods and planting new trees take time, it is too early to assess real impacts on productivity. This study now provides a good baseline to measure changes in productivity in the future.

Many other factors besides programme participation influence differences in productivity between farmer groups and differences from year to year. Farmers participating longer in the programme could already have higher yields prior to joining the programme. Differences from year to year could be the result of variations in rainfall, humidity and sunshine, and the varieties of cocoa grown.

Farmers prefer to sell to Cargill

Also promising is that the majority of farmers and their cooperatives prefer to sell to Cargill. This indicates that the programme contributes to secure a reliable supply of cocoa. Farmers saw the premium as one of the most important motivations to join the programme. This is particularly the case for farmers who have joined recently, where productivity increases resulting from changes in farming methods have not yet materialised. Around 70% of farmers were satisfied about the fixed price of cocoa established by the 2012 government reform. Half of farmers indicated their group prefers to sell to Cargill. A major motivation to do so was to obtain the premium obtained from selling certified beans to Cargill. Farmers also indicated that advantages of being part of a producers' group include higher fixed prices and prompt payment. Farmer's loyalty is thus influenced both by financial gains but also by the different services and support provided by their cooperative.

Cooperatives also saw advantages in the services Cargill provides, particularly training, inputs, vehicles and credit. Cooperatives see how these lead to higher production and better cocoa. There was no evidence that community programmes had an impact on farmer's satisfaction with or loyalty to Cargill. It may be that the proportion of farmers and cooperatives in the sample receiving this type of support was very small.



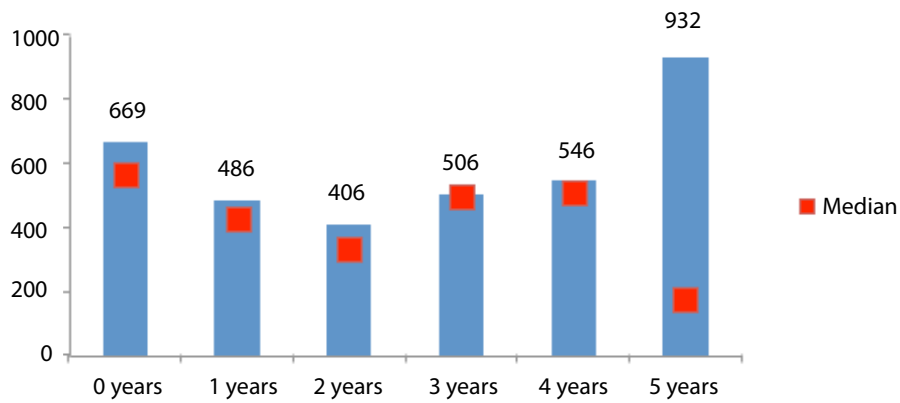


Figure 3: Average cocoa farm productivity per hectare per phase of the programme

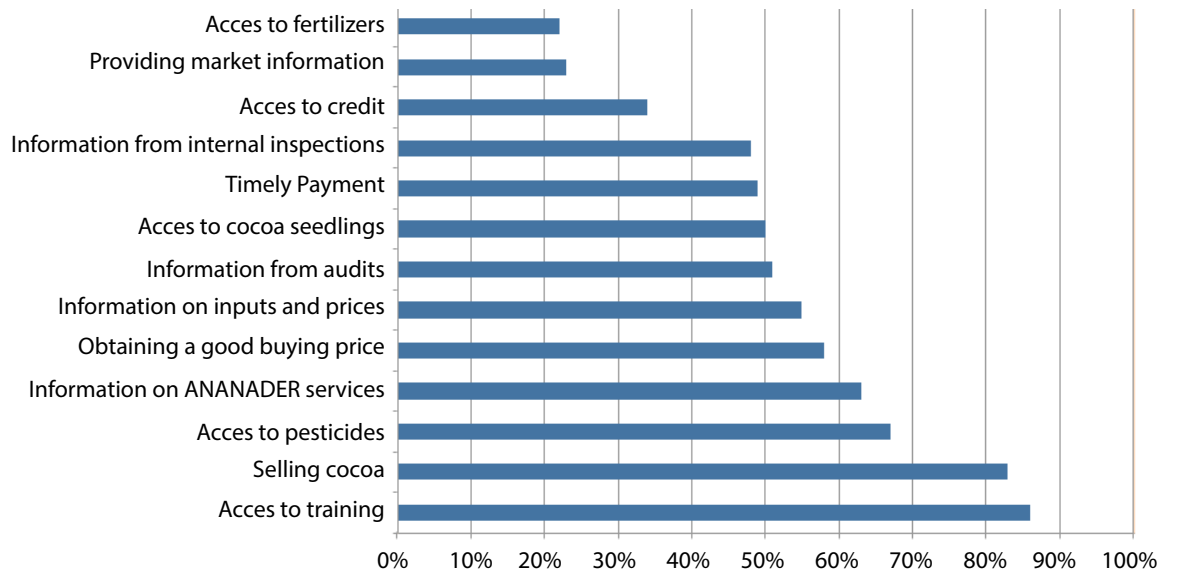


Figure 4: Reasons why producer groups sell to Cargill

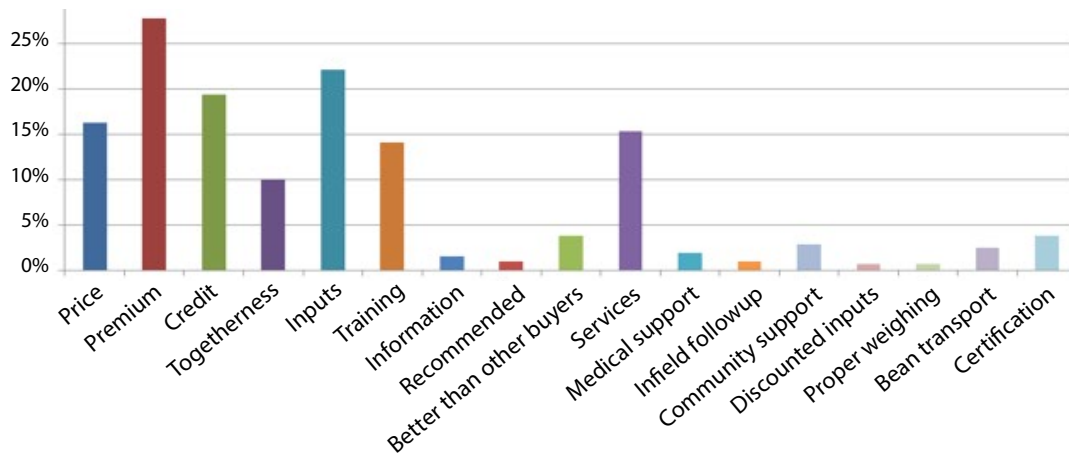


Figure 5: Reasons why farmers sell to cooperatives (multiple responses possible)

Cooperative professionalism has improved

Farmers are generally satisfied with the support activities and services that cooperatives are delivering. They are particularly satisfied with improved access to information, selling cocoa, the buying price, access to pesticides, information on services and input prices and timely payments. This indicates that the programme has achieved one of its aims to create and professionalise groups able to serve a large number of smallholder farmers by providing services, and access to markets for quality products with higher prices. Farmers see the premium price, the cooperative group spirit and social relations, and access to inputs, credit, and information as major incentives to belong to and sell to cooperatives. Farmers indicated some services could still be improved: access to fertilisers, insurance, planting material and to credit.

Livelihoods of certified farmers have generally improved

Income

Farmers who participated longer in the programme earn on average 53% more than recent entrants. Although farmers' incomes when they first joined the programme are not known, this suggests that the programme may contribute to improving incomes. This cocoa income benefits not only male farmers, but also results in a proportion given to spouses, to meet basic family needs and children's education. Farmers joining the programme recently have on average 47% lower production costs (67 CFA/kg) than the average costs of all programme participants (135 CFA/kg).

Farmers and cooperative managers had difficulties calculating all the costs of cocoa production. Programme participants have an average economic efficiency ratio (gross income divided by total production costs) of 14:1.

Investing one euro in cocoa production generates 14 euros for the farmer. Participating farmers who are certified have lower efficiency ratios than those not yet certified. There was no difference in efficiency ratios related to the length of participation in the programme. This is an intriguing result as productivity, farm size, number of farms, total production costs and gross income from cocoa do not differ between certified and not yet certified farmers. It may be explained by the finding that gross income and total production costs do not significantly differ between participating farmers who are certified and those in the process of certification.

These findings help explain the concerns expressed by about half of farmers that the premium does not sufficiently cover the additional costs to produce certified beans, particularly labour and inputs. A cost-benefit analysis of certification for farmer, cooperative, Cargill and Solidaridad would provide insights to help lower costs and improve profitability.

In general, farmers' knowledge levels on GAP related to cocoa are low. However, farmers participating longer and who are already certified have significantly higher knowledge levels on biodiversity, soil and water conservation measures than other farmers in the programme. Farmers' reports of implementing GAP indicate that chemical waste management, solid waste management, disposing of diseased pods and fertiliser application require more attention as farmers are not implementing best practices. Having better knowledge is in itself valued by farmers. However, better knowledge does not always translate into better implementation of GAP for various reasons, some of which may lie outside the control of farmers.



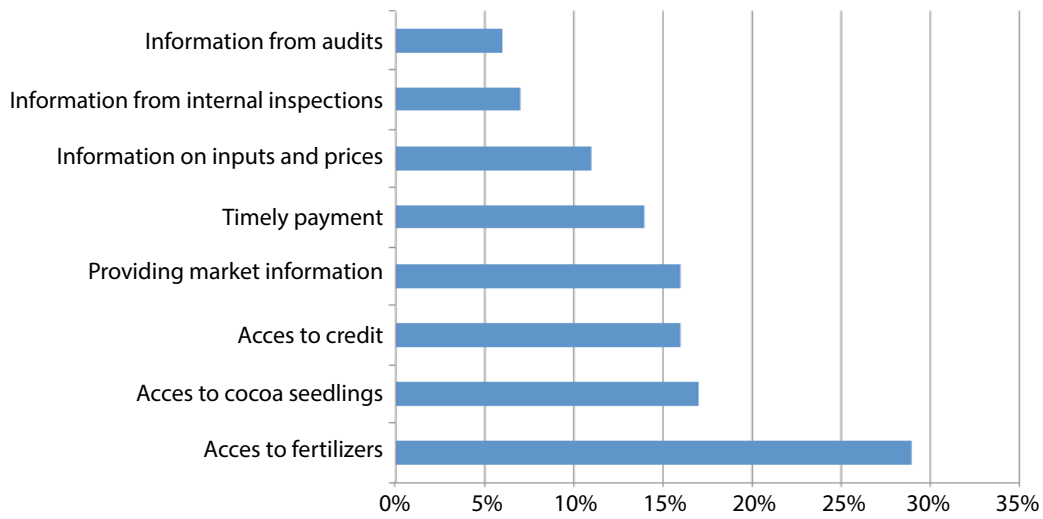
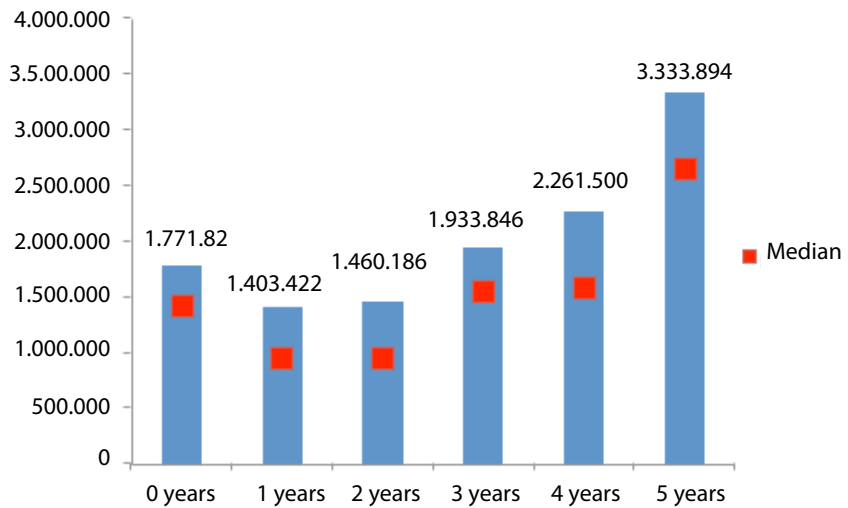


Figure 6 : Proportion of farmers dissatisfied with cooperative services

Figure 7:
Average net income from cocoa from the main farm in 2012 for farmers in all phases of the support program



Best practices

The programme seems successful in improving farmers' knowledge and practices: farmers participating longer in the programme and those already certified generally have higher levels of knowledge and implementation of best practices and safe working practices. It takes time for farmers to achieve higher scores on knowledge and practices that meet certification standards. Certification standards therefore give farmers a three-year period to comply with all their requirements.

Labour conditions and rights

In general, knowledge of workers' and children's rights is low. Farmers participating longer in the programme and certified farmers are more aware of labour and children's rights than other farmers in the programme. Programme farmers who are already certified make contracts with their workers more often than those not yet certified. However, 50% of farmers who hire workers do so without formal contracts. Farmers' awareness that there are workers' rights representatives, whom they can contact for advice, is low. Certified farmers report lower rates of children working on prohibited activities than those recently joining or those not yet certified. Children often assist their families on farm, generally on non-hazardous activities and significantly under the maximum number of hours permitted according to the UTZ Code of Conduct. However, 12% of the time spent by children was on potentially hazardous activities, such as pruning, applying fertiliser and chemicals, and breaking open cocoa pods. For all participants in the programme therefore, knowledge and implementation of labour and children's rights is an area for improvement.

Working conditions

The majority of farmers reported positively about their working conditions. Farmers participating longer in the programme tended to have higher levels of knowledge about safe working conditions, such as chemical handling and the use of protective equipment. This is an indication that the programme has contributed to safer working conditions for cocoa farmers. A major bottleneck remains the access to healthcare, especially because nearly a third of farmers reported having farm accidents in 2012, typically machete wounds.

The program generally meets farmer's needs

Given farmers' perceptions of the positive contribution of the programme to their livelihoods, it not surprising that the majority of farmers reported being satisfied with support received. This demonstrates that the programme broadly meets the needs of farmers. Farmers feel they are better able to produce quality cocoa, earn a higher income from it, and indicate they will continue producing cocoa as long as it is profitable. Around 90% of farmers indicated that if they had access to additional financing, they would buy additional fertilisers and new varieties to rejuvenate their farms. However, the majority of farmers do not see cocoa as a viable future commodity for their children. Farmers are therefore interested in other low-risk cash crops such as rubber and oil palm, which are perceived as easier to farm and provide more regular income flows than cocoa. The programme activities of forming and building cooperatives are widely felt to have positive impacts, including non-tangible benefits such as increased pride and cooperative spirit.



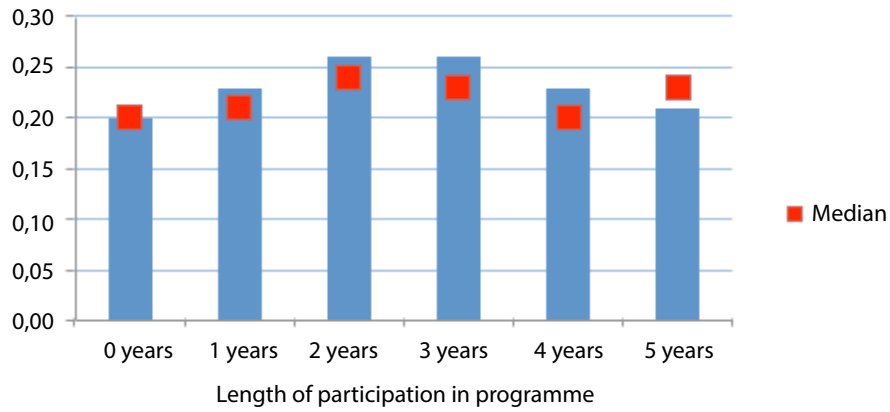


Figure 8: Farmer's average knowledge levels on Good Agricultural Practices (score between 0-1)

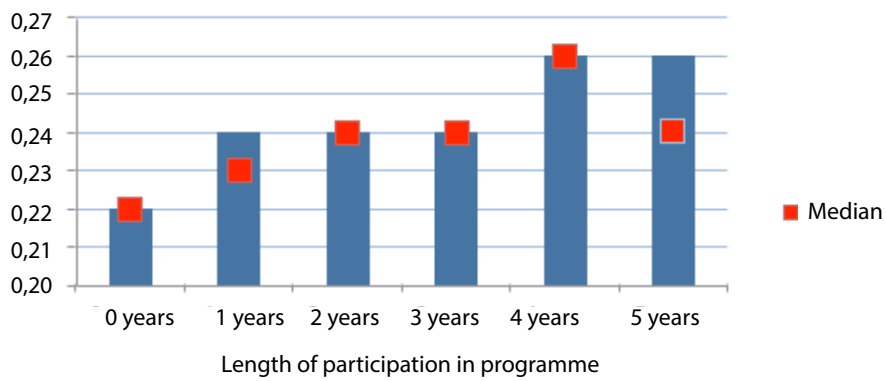


Figure 9: Farmer's average implementation level of Good Agricultural Practices (score between 0-1)



Although the programme has contributed to improvements in the lives of participating cocoa farmers, more time is needed to determine the effects of the activities; changing ideas, altering and improving practices takes time. Still, Cargill and Solidaridad can take various steps to increase cocoa production, and improve the livelihoods of cocoa farmers and their communities. The following recommendations are based on information from farmers, cooperatives, cooperative managers, farmer communities, support organisations and from the research team's analysis.

Recommendations specifically made by farmers and stakeholders are provided in Box 1 (page 17)

Improving productivity

Farmers' perceptions about the attractiveness of cocoa farming now and in the future, combined with generally low efficiency and productivity rates, indicate that there is scope to increase cocoa yields. Higher yields would help increase profit margins and boost farmers' incomes. The average yield of programme farmers is lower compared to the yields possible in Côte d'Ivoire and in other producing countries such as Indonesia. The programme can decrease this gap in various ways:

- Upscaling support to farmers to access disease-resistant tree varieties and farming methods.
- Supporting much wider upscaling of access to appropriate, affordable inputs and credit.
- Providing more and more frequent in-field extension, to ensure that the knowledge is translated into practice. This could be achieved by programme staff but also by cooperatives organising trainings tailored to their members' needs.
- Adapting support activities to the needs of later entrants, as their profile is different to the earlier participants: they generally have larger farms in less productive regions, and are less accustomed to working in a group.
- Adapting training contents to areas where poorer knowledge and implementation scores are apparent, particularly shade trees, fertiliser application, weeding methods, soil fertility improvements, and record keeping. Record keeping needs to be creatively tackled in the context of low literacy levels.



Improve profitability, not just income

The evidence suggests that investments generate benefits only after some time. The timescales of investment and benefit flows associated with switching to certified sustainable production systems are only beginning to be understood. To date, costs have been either largely underestimated or focused on gross income rather than net profitability. At the moment, farmers perceive that the costs of certified sustainable production for farmers and their cooperatives are not fully covered, and do not completely reward them for their investment in certified cocoa farming. High initial costs are a burden most farmers can ill afford. Although Cargill, Solidaridad and their partners bear many of the upfront costs of becoming certified, there is a need to understand this issue better to keep (certified) cocoa attractive and profitable. The costs of certification are not completely clear for farmers and cooperatives. This reflects the results of other studies ¹

The following steps may enhance profitability of certified cocoa production:

- Maintain the certification premium.
- Continue stimulating demand for certified sustainable cocoa, and the willingness to pay for it, to secure demand and create truly sustainable supply chains.
- Make farmers and farmer groups more aware of and engaged in the debate about the equitable distribution of costs and benefits through the supply chain. Farmers should be informed about the timescales of the anticipated flows of costs and benefits over a time period of at least three years, prior to engaging in activities. This implies working with all parties to understand real production and investment costs to certify a kilogram of cocoa, including direct and indirect costs for farmers, certificate holders, Cargill and Solidaridad and partners. Such an assessment needs to take into account the proportion of cocoa beans sold as certified.
- Work with cooperatives, farmers and partners to cut the costs associated with multiple certification, for example, audit and record keeping costs.
- Train farmers to manage revenues and to farm more professionally.
- Testing new business models, such as intensification and contract farming. This means engaging women farmers and labourers to explore how they can be empowered to have more say in proportion to the effort they put into cocoa farming.
- Focus on changing mind-sets and providing entrepreneurial support to professionalise those farmers with the highest potential and who show interest.
- Strengthen the business case for young farmers, including diversification of products and improvement in farm management.
- Support pre-financing by farmer groups for cocoa purchases and/or support farmer groups and families to obtain credit.

¹KPMG (2012) Cocoa Certification. A study on the costs, advantages and disadvantages of cocoa certification. The Netherlands, The International Cocoa Organization (ICCO): 99.



Continue to focus on addressing rights

Despite training and awareness raising, gaps still exist between farmers' practices and the standards concerning children's and labour rights required by certification. Continued action is needed to ensure that the rights of children and workers are universally known and respected. Activities that may contribute to this are:

- Improve farmers' and workers' low levels of knowledge and practice in areas of child labour, working conditions, and labour rights, through training, awareness raising and unannounced auditing. If there are barriers to new practices, these need to be examined. This may imply that training and information methods used need to be assessed and possibly revised.
- Make regular on-farm follow-ups in areas where poorer knowledge and implementation scores are apparent for children's and labour rights. These follow-up can be supported by monitoring and non-compliance-reporting mechanisms.
- Support the provision of schools and day care.
- As problems linked to children's and labour rights are rooted in a combination of factors, Cargill and Solidaridad should continue partnerships, including with the government, to work towards solutions.

Include workers and particularly women and youths in future programme activities

Given the ageing farmer population, farmers' general pessimism about the future of cocoa farming, as well as how tenure is commonly organised in Côte d'Ivoire, a more targeted inclusion strategy is recommended.

- The programme should include more female farmers and workers in training activities. The women farmers' groups, nurseries and learning groups, supported by Cargill, Solidaridad, UTZ Certified and other traders in Côte d'Ivoire, provide role models. They also provide opportunities for exchanges between different women's groups about which activities and methods work best. Supporting youths to develop agricultural-based businesses is another potential activity.
- Knowing that farmers do train others, including women and youths, testing the levels of knowledge and skills of these underrepresented farmers and workers is needed to determine the effectiveness of farmers training others. It would also enable a comparison of this 'passed-on training' compared to lead farmer training, farmer field schools and field apprenticeships.



Diversify livelihoods

Most farmers are highly dependent on cocoa, which makes their livelihoods vulnerable in the long run. The programme can help decrease vulnerability and maintain cocoa production by many of the already mentioned recommendations. In addition, the program may help diversify livelihoods by:

- Strengthening the business case for young entrepreneurs to farm cocoa
- Testing new business models (such as intensification and contract farming), and engaging women farmers and labourers to explore their role in these.
- Although cocoa is a major livelihood source for farmers it is not the only one. Support activities need to holistically consider alternative crops, bearing in mind that farmers - both male and female – find it important to minimise risks and create more diversified farms and livelihoods.

Enhancing loyalty between farmers and Cargill by “doing more of the same”

Farmers' loyalty is influenced both by financial gains, social capital and the different services and support provided by their cooperative and Cargill. Most farmers sell their cocoa to their cooperative. A major motivation to do so was to obtain the premium. Half indicated their group prefers to sell to Cargill but a fifth does not know who their group sells to. It is not evident that the full mix of support activities provided to the longest participating groups increased their loyalty towards Cargill. To maintain farmer and cooperative loyalty, it is recommended to continue to:

- Aid cooperatives to increase transparency about the how the premium and buying price is determined.
- Continue dialogue and partnerships, such that farmers and their groups obtain access to the knowledge, skills and services they need, if not through Cargill or Solidaridad, then through other partners.
- Continue to support cooperatives to provide the services their members need, to ensure farmers stay happy and satisfied. Cargill could help ensure that farmers' areas of grievance and satisfaction are known and monitored by their cooperatives and that this knowledge is relayed back to Cargill.



Continue to build partnerships and dialogue

The approach has been to provide both farmer support, technical, certification and community services through partnerships with the private sector, civil society, and the government. This appears to be effective in bringing in different and relevant expertise to meet the diverse needs of farmers and ensure viable livelihoods for farmers and their children. A concerted dialogue, such as through platforms with other traders, with the government and with lead farmers is essential to address issues outside of Cargill and Solidaridad's sphere of influence. Specific issues for dialogue with farmers and their cooperatives are:

- Tailor services and support to specific individual cooperatives and to farmers' priorities. This entails a reappraisal of the services offered. Take into account farmers' and cooperatives' satisfaction and appreciation of different services, their needs and the low level of awareness of the farmers interviewed of the programme.
- Farmers have indicated that they would like higher buying prices. Experimenting with different cooperatives, offering different combinations of (higher) market prices and/or premiums and different levels of service delivery may provide solutions.

Focus on farmers' and cooperatives' priorities and implementation bottlenecks

It is recommended to focus future activities more on the areas indicated by farmers and their cooperative they are least satisfied with and the services they state as most needed. Individual needs assessments with cooperatives are recommended. The priorities that can be expected are:

- Aiding cooperatives to provide credit and inputs to members, and continued on-farm training and support.
- Weaknesses in cooperatives such as transparency about costs and prices, accounting structures, management and governance mechanisms to avoid corruption.
- The GAPs where farmer knowledge and implementation levels are lowest were: weeding, record keeping, soil conservation practices, fertiliser use, field buffer zones, crop protection products, waste management, dealing with diseased pods, inputs use, productivity, shade trees, pruning and soil and water management. The training and information methods used to impart knowledge need to be assessed and possibly revised, to ensure that knowledge about rights results in effective implementation.
- The area of certification where farmers had low levels of knowledge and difficulty meeting certification standards concerning child labour, working conditions and labour rights.



Box 1: Farmers' and other stakeholders' recommendations

Many farmers indicated that they will continue to produce cocoa as long as it is profitable, but they do not see it as a viable future commodity for their children. To meet this challenge, farmers and their cooperative managers proposed the following recommendations:

- Support farmers' sustainable, diversified livelihoods from other subsistence and cash-crops that complement cocoa
- Maintain and increase the certification premium to enable costs to be fully covered for farmers and for producer groups
- Provide more professional training on managing revenues and farming
- Offer support to replace old trees and introduce seedling businesses and improve farm soil fertility
- Provide increased and more regular in-field extension services with farmer field schools
- Provide training on improved cultivation techniques, particularly regular on-farm training and follow up
- Continue with the support to obtain competitively priced inputs and planting materials
- Continue with support to producer groups to provide services such as inputs to members
- Strengthen and professionalise producer groups and producer group managers
- Stimulate women farmers' participation in producer groups
- Pre-finance cooperative cocoa purchases and/or for producer groups and families to obtain credit.
- Offer training and strengthening of village level trainers on good agricultural practices
- Stimulate activities supporting young farmers and women's empowerment
- Strengthen the business case for young entrepreneurs to farm cocoa
- Offer further support to producer groups to provide services to their community (water, health care and education etc.)
- Attract other companies and organisations to invest in cocoa production areas.

Source: Focus groups meetings November 2012-April 2013 and verification meeting Abidjan April 2013.



Combining rigorous quantitative data collection with qualitative interviews

In 2012, Solidaridad and Cargill commissioned this independent impact assessment and baseline study. 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 Ivorian research organisation Agriculture et Cycles de Vie (AC&V). A rigorous, quantitative and qualitative interview-based assessment was conducted early 2013, based on a representative sample of 368 farmers, belonging to 55 cooperatives participating for different periods of time in the programme and located in three main agro-ecological zones across the country. In-depth interviews were conducted with 19 cooperative managers, village chiefs, groups of villagers, chiefs and support organisations and the size of 21 farms was measured.

Establishing representative indicators with stakeholders

Fifteen environmental, economic, and social indicators (shown in the overview of impact indicators below) were used to measure the impact of the support activities implemented between 2008 and 2012. The preliminary results were presented and verified at a meeting of 42 farmers, cooperative managers, village chiefs and representatives from ANADER, Cargill, Solidaridad and the research team. Statistical and qualitative analyses of the indicators were then conducted. Using the results of the interviews, farmers' perceptions of changes in the indicators were analysed. Comparisons were made of indicators for farmers participating in the programme for different periods of time, farmers located in different agro-ecological regions, and between participating farmers who are certified or in the process of being certified, to detect any significant differences. Results were also benchmarked to existing data about the indicators.



Box 2: Farmers interviewed

Year of UTZ certification	Number of farmers interviewed
2008	3
2009	21
2010	35
2011	75
2012	135
2013	17
2013 - about to be certified	18
Uncertified	64
Total number of farmers interviewed	368

Box 3: Support activities implemented in sample of cooperatives analysed

Implementing organisation	Certification, grouping and farmer training						Input provision		Community development		
	Solidaridad, Cargill				Solidaridad, ANADER	Mars, Solidaridad, Cargill	Syngenta, ANADER	CNRA & ANADER	CARE, IECD	CARE	
Program Activity	Pre-audits	Setting up groups and ICS	Gender training	Plant nursery	Farmer Field School	Cocoa Development Centre & Cocoa Village Clinic	Fertiliser & Pesticide supply	Seedling supply	Education	Infrastructure	Schools
% sample of total cooperatives participating	81%	81%	2%	0%	98%	0%	0%	22%	3%	3%	0%



Conclusion	Results
<h3>How inclusive was the programme?</h3>	
<p>The programme has been inclusive in reaching targeted farmers, but women are underrepresented, actions to mitigate this are being undertaken</p>	<ul style="list-style-type: none"> All farmer groups included in support activities had received training. A smaller number of farmers have been included in farmer field school training (3%), nurseries (3%), seedlings (10%), women's empowerment (3%) and community and social programmes (6%). The support activities led to 100% of farmers becoming a member of a cooperative. This is a greater proportion than is common in Côte d'Ivoire. The participating farmers are typical in terms of age (on average 46), nationality (Ivorian, Burkinabé, and Malian) and sex, with 95% male; they appear representative of most cocoa farmers in Côte d'Ivoire except that they are all members of cooperatives. As activities have targeted registered cooperative members who own or sharecrop farms, younger farmers, female farmers and labourers have had less opportunity to be included in support activities and appear underrepresented in programme activities. As the role of women in cocoa production became clearer, a small number of activities specifically targeted to involve and empower women were included, which were reported as being appreciated by female farmers.
<h3>Did the programme lead to reliable, available, high quality and certified volumes of cocoa?</h3>	
<p>Programme participants perceive their productivity has increased, but this is not yet confirmed by quantitative data</p>	<ul style="list-style-type: none"> Programme participants produced on average 493 kg/hectare. No significant positive differences in productivity per hectare were found between participating farmers who are already certified and those not yet certified, between agro-ecological zones or between different durations of participation in the programme. Farmers participating longest in the programme have much higher productivity (932 kg/hectare) than those in the first year of the programme (486 kg/hectare) and the average. There were no significant differences between participating farmers who are certified and those not yet certified. As 25% of a sample of farmers overestimated their farm sizes, productivity is likely to be higher. Farmer's productivity is slightly lower compared to other certified farmers (between 576 and 620 kg hectare) in Côte d'Ivoire, and low compared to other countries, where averages of 400 to 800 kg per hectare are common.¹ 60% of farmers in focus groups perceived GAP had led to productivity increases.
<p>Programme participants produce good quality cocoa</p>	<ul style="list-style-type: none"> On average 98% of beans sold by participants to their cooperative meet quality requirements.

¹. Baah, F. (2010). Cocoa yields on research farms and how to close the gap with farmers. IITA, Cocoa Research Institute of Ghana (COCOBOD).

ICCO. (2013). "Growing cocoa." Retrieved 13 september 2013, <http://www.icco.org/about-cocoa/growing-cocoa.html>.

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Mohammed, D., D. Asamoah and F. Asiedu-Appiah (2011). Cocoa Value Chain - Implication for the Smallholder Farmer in Ghana. Ghana, Department of Information Systems and Decision Sciences.

KNUST School of Business, Kwame Nkrumah University of Science & Technology, Ghana. Retrieved 13 september 2013. http://www.swdsi.org/swdsi2012/proceedings_2012/papers/Papers/PA157.pdf

Conclusion	Results
<p>Early programme participants spend slightly more to produce cocoa than participants that just entered the programme</p>	<ul style="list-style-type: none"> • Farmers spend on average CFA143 (€0.21) per kg of cocoa on total production costs for labour and inputs, with no significant difference between certified and non-certified farmers. Production costs were difficult for farmers to provide and calculate. Opportunity costs (time lost on farm due to attending training or cooperatives) were not included. • Farms in marginal agro-ecological zones have higher labour and production costs per kg of cocoa and per hectare. Compared with the average of CFA82 per kg (€0.12) spent on hired labour, farmers who have participated for one year and for five years spent least, while farmers participating for two years use the most hired labour and have the highest costs. • Programme participants have an average economic efficiency ratio (gross income/total production cost) of 14. Participating farmers who are certified have lower efficiency ratios than those not yet certified and early programme entrants have similar ratios to later entrants.
<p>Farmers have concerns over the long term viability of cocoa farming and possible discontinuing the premium for certified cocoa</p>	<ul style="list-style-type: none"> • Farmers have a high dependence upon cocoa: it provides the main source of household income for almost all participating farmers (93%). • Farmers who had participated longer in the support activities earned more (with an average income of CFA3,333,894/€5,089) than the average for all participants (CFA1,685,000/ €2,572). Compared to the average per capita gross income in Côte d’Ivoire of €1,478 in 2012, cocoa farmers connected to the programme earn a relatively good income. • Certified farmers had been paid a premium of between CFA30 and 50 per kg, with 60% receiving CFA50 (€0.10). • 50% of farmers perceive that the premium sufficiently covers their costs to produce certified beans. • As well as the premium, higher prices also motivate farmers to participate in the programme. On average, farmers reported that cooperatives paid higher buying prices for cocoa in the last three years than other buyers. • Farmers and farmer groups expressed concerns that, if payments of the premium were to be discontinued, one of the main added values of maintaining their certified status would disappear. • Although most farmers intend to continue cocoa production over the next five years, they feel that cocoa farming is not an attractive source of income over the long term. Farmers are interested in other, low risk, low cost, cash crops that can provide regular incomes.

Conclusion	Results
<h3>Has loyalty between farmers and Cargill been enhanced?</h3>	
<p>Loyalty is high with no change over time</p>	<ul style="list-style-type: none"> • Most cooperatives (50%) preferred to sell to Cargill between 2010 and 2013. The certification premium, service delivery and higher and fixed prices are important reasons for farmers to sell cocoa to cooperatives, and for cooperatives to sell cocoa to Cargill. • 80% of farmers do not know who their group sells to. • 94% of farmers indicated they were satisfied with the programme.
<h3>Are cooperatives professional with regard to providing services to their members?</h3>	
<p>The programme led to professional cooperatives, though some services can be improved</p>	<ul style="list-style-type: none"> • Cooperatives and 19% were not satisfied. Farmers were very satisfied with access to training, selling their cocoa, access to pesticides, and information on ANADER services. • Farmers believe their cooperatives can be further professionalised by enhancing access to fertilisers, credit, seedlings and market information and the timeliness of their payments.
<h3>Have livelihoods improved?</h3>	
<p>The programme may have led to improved levels of knowledge and implementation of best practices</p>	<ul style="list-style-type: none"> • Knowledge levels, and especially the implementation of good agricultural practices and safe working practice are higher among farmers participating longer in the programme than for farmers just joining the support activities, although on average both knowledge and implementation are still low. For example, improved waste management and reduced pesticide usage is better for farmers participating longer than those that recently started.
<p>Respect for labour rights could be improved</p>	<ul style="list-style-type: none"> • Twenty-five percent of farmers interviewed hire labour to work on their cocoa farms. Of these farmers, half used contracts with their labourers. • There is limited awareness of workers' rights. Twenty-one percent of farmers have contact with lead farmers who are contact points for labour rights issues.
<p>Respect for children's rights could be improved</p>	<ul style="list-style-type: none"> • Farmers have adequate knowledge of the practices that can be performed by children. • Knowledge is weak concerning the appropriate age for children to begin work on a farm, with 34% of farmers able to specify the minimum age limits for the cocoa farming tasks that children may do according to the UTZ Code of Conduct. • Children on average spent 83 hours a year assisting their families on farm, generally on non-hazardous activities. This is significantly under the maximum number of hours (728) specified in the UTZ Code of Conduct. Of the time spent by children, 78% was on non-hazardous activities. • Certified farmers report lower rates of children working on prohibited activities than those who have joined recently and those as not yet certified. • A lack of access to schools and of teachers was noted in some farming communities as a constraint to children's education. This points to the possibility that a lack of schools may be one of the causes of children working on farms.

Conclusion	Results
Generally living and working conditions are safe, but could be improved in some areas	<ul style="list-style-type: none"> • Seventy-three percent of farmers reported positively about on-farm working conditions. • Farmers reported using personal protective equipment in line with the requirements of the UTZ Code of Conduct. • Nearly a third (29%) of farmers reported having farm accidents in 2012, typically machete wounds. There was with no difference between earlier and later programme participants.
Livelihoods appears to improve with participation in the programme	<ul style="list-style-type: none"> • Farmers are generally satisfied with their livelihoods • Farmers who have participated longer in the programme are more satisfied than those who just started. • Farmers reported that higher cocoa production and incomes resulted in a larger proportion of this income being given to their spouse, who is then used to meet basic family needs, and of spending more money on children’s education.

Are the support activities relevant and adequate, addressing the needs of the farmers?

Farmers indicate the programme leads to best practices, increased productivity and income and that the added value of a certification programme is access to premiums and services.	<ul style="list-style-type: none"> • Sixty-nine percent of farmers indicate that certification is valuable, as it provides them with access to training on GAP. 12% also indicate that the programme led to higher productivity and 7% that it led to higher income. Farm owners and those participating in farmer field schools have higher productivity than others in the programme. However, productivity is highly likely to be influenced by factors other than the programme and certification. • Forty-one percent of farmers stated there were benefits in being in a cooperative - reinforcing the strategy of the programme to create and deliver services via producer groups. • Farmers and cooperative managers indicated that they need to further strengthen the management and transparency of their cooperatives, accounting structures and understand costs better. Better governance mechanisms are needed to avoid corruption. • Farmers stated that an added value of the programme is that they can access certification premiums and that cooperatives have been set up, which provide services farmers are satisfied with. • Cooperatives provide valuable services and have value for farmers. Farmers indicated that advantages of being a member include higher fixed prices and prompt payment. Most sell their cocoa to their cooperative and prefer selling to their cooperative, rather than to traitants or independent buyers • Farmers stated that support activities in which they had participated generally addressed their needs and enabled them to improve farm management. • Farmers who own their farms had better levels of implementation of GAP and certification standards, higher productivity, incomes compared to farmers who did not own their farms in the programme.
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Ingram V., Waarts Y., van Vugt S.M., Ge L., Wegner L., Puister-Jansen L., 2013. Towards sustainable cocoa: Assessment of Cargill and Solidaridad cocoa farmer support activities in Côte d'Ivoire 2008-2012. LEI, Wageningen UR. Wageningen.

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