

Project

***“Increasing incomes and food security of small farmers in West
and Central Africa through exports of organic and fair-trade
tropical products”***

GCP/RAF/404/GER

Project impact study in Sierra Leone

Cocoa



The designations employed and the presentation of material in this information product do not imply the expression of any opinion whatsoever on the part of the Food and Agriculture Organization of the United Nations (FAO) concerning the legal or development status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. The mention of specific companies or products of manufacturers, whether or not these have been patented, does not imply that these have been endorsed or recommended by FAO in preference to others of a similar nature that are not mentioned.

The views expressed in this information product are those of the author(s) and do not necessarily reflect the views of FAO.

All rights reserved. Reproduction and dissemination of material in this information product for educational or other non-commercial purposes are authorized without any prior written permission from the copyright holders provided the source is fully acknowledged. Reproduction of material in this information product for resale or other commercial purposes is prohibited without written permission of the copyright holders. Applications for such permission should be addressed to Chief, Electronic Publishing Policy and Support Branch, Communication Division
FAO, Viale delle Terme di Caracalla, 00153 Rome, Italy, or by e-mail to copyright@fao.org.

Project “Increasing incomes and food security of small farmers in West and Central Africa through exports of organic and fair-trade tropical products”
GCP/RAF/404/GER

Project impact study in Sierra Leone; Cocoa

Trade and Markets Division

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS
Rome, 2009

Introduction	4
1. PRESENTATION OF THE COCOA SECTOR IN SIERRA LEONE	5
2. PROJECT PARTNERS AND ACTIVITIES.....	7
2.1. <i>Introduction to KAE and Twin</i>	7
2.2. <i>Main project activities and results</i>	8
3. RESULTS OF THE FARMER SURVEY	9
3.1. <i>Characteristics of the sample</i>	9
3.2. <i>Training organized by the project</i>	10
3.3. <i>Changes in production area and yields</i>	12
3.4. <i>Impact on incomes</i>	13
3.5. <i>Marketing and group dynamics</i>	14
3.6. <i>Other impacts of the project</i>	16
3.7. <i>Problems and suggestions</i>	18
4. ECONOMICS OF PRODUCTION AND TRADE	19
4.1. <i>Prices</i>	19
4.2. <i>Yields</i>	21
4.3. <i>Cost of production and gross margin</i>	22
5. DISCUSSION AND CONCLUSIONS.....	24
ANNEXES	26

Introduction

The project has supported the cocoa farmers association Kpeya Agricultural Enterprise (KAE). This report presents the results of a survey among a sample of the cocoa farmers on the impact of the project.

The report first gives an introduction to the cocoa sector in Sierra Leone and the project partners and activities. Subsequently the survey results are presented. This is followed by an analysis of the economic aspects of cocoa production, using data from the survey, analysis conducted during the course of the project and external sources. Finally overall conclusions about the impact of the project are drawn.

Acknowledgements

The questionnaire was developed by Léa Jenin, Associate Professional Officer at the Trade and Markets Division of the FAO. The interviews were held in the local language by Catherine Sandy Margao, consultant. Antonia Caggiani, project assistant, input the data in the database and the analysis was conducted by Léa Jenin and Cora Dankers, technical officer of the project, who also wrote the report.

1. PRESENTATION OF THE COCOA SECTOR IN SIERRA LEONE

Cocoa is the most important agricultural export product in Sierra Leone. Until the early 1990s the Sierra Leone Produce Marketing Board (SLPMB) had a monopoly on cocoa exports. Because of a high export tax producers received only 55 percent of the world market price, which discouraged production and encouraged smuggling¹. After the liberalization of the cocoa sector, the SLPMB performed poorly and operations were terminated in 1992².

As explained in a study by UNCTAD³, trade liberalization of the cocoa sector in West Africa resulted in increased concentration in the export sector, with foreign cocoa trading companies integrating backwards into the origin. Those international buyers have access to financing at much lower interest rates than local exporters. However, according to the Diagnostic Trade Integration Study (DTIS)¹, in Sierra Leone poor infrastructure forces international cocoa traders to buy from local assemblers and prevents further backward integration to the farmer level. The liberalization did increase the share of the world market price received by producers (in 2006 estimated around 60 percent of CIF price, perhaps 67 percent of FOB price), but quality declined, depressing prices.

Quality problems were exacerbated by the civil war, during which many cocoa farms were abandoned or barely maintained for a long period. In addition, the war also reduced the transmission of cocoa farming knowledge to the younger generation.

Local trade agents started to loan rice to the farmers to be repaid by cocoa. This tied farmers to the traders. Apparently, for those local traders it is easier to increase their margins by paying a low price to the farmers (partly in the form of rice) than to insist on quality. Indeed, farmers receive more by selling wet cocoa, due to its higher weight, than by selling well dried cocoa. In 2006, Sierra Leone cocoa faced a standard discount of 70 pounds on the London cocoa market price and many shipments were discounted further due to inferior quality.

The rehabilitation of cocoa farms after the war has progressed slowly. Both main and feeder roads were in bad condition, increasing transport costs. Rehabilitation of the roads in the main cocoa areas only started in earnest in 2008.

¹ *Integrated Framework, 2006. Sierra Leone, Adding Value through Trade for Poverty Reduction; A Diagnostic Trade Integration Study.* www.integratedframework.org/files/english/Sierra_Leone_DTIS.pdf

² *National Commission for Privatization, Sierra Leone. No year. Sierra Leone Produce Marketing Board* <http://ncpsl.com/id55.html>. Accessed June 2009.

³ *UNCTAD, 2008. Cocoa Study: Industry Structures and Competition. By I. Muselli, Geneva.*

Table 1. Sierra Leone - production and exports of cocoa

	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08
Production in tonnes	6 000 ^a	8 000 ^a	4 500 ^b	7 000 ^b	6 300 ^b	12 000 ^b	10 000 ^b
Export in tonnes ^c	1 310	4 490	5 460	9 500	4 740		
Export value in US\$ ^d	266 000	1 219 000	2 573 000	5 260 000	5 659 000		

Sources: ^{a/} and ^{d/}: IF, 2006. DTIS citing Ministry of Agriculture and the Bank of Sierra Leone.

^{b/} and ^{c/}: ICCO, 2008. Assessment of the Movements of Global Supply and Demand.

Note: There may be discrepancies in the table due to different start and end dates of the cocoa year. ICCO provides data for years that run from 1 October-30 September, whereas in Sierra Leone the harvest starts in July and shipments continue until May.

Internationally, conventional cocoa trade is dominated by three processing companies, Cargill, ADM and Barry Callebaut, who in 2005 together represented 40 percent of the global grinding capacity. For a large part of their cocoa bean supplies they have integrated backwards into exporting, through subsidiaries in supplying countries. Barry Callebaut is also the largest manufacturer of industrial chocolate and final consumer products⁴.

Only two important trading companies (without processing activities) remain: ED&F Man and the holding that owns Continaf and Daarnhouwer. Continaf specialises in bulk trade whereas Daarnhouwer specialises in fine and flavoured cocoa from Latin America and the Caribbean. In the years after the war until 2006, most of Sierra Leone's cocoa was exported by ED&F Man Cocoa, but they withdrew their resident agent in 2006. Currently, the main importer is Theobroma, a smaller and independent trading company based in Quebec, Canada. According to Fold (2002), Theobroma specialises in trade in processed cocoa products and "*in producer countries where it is relatively difficult to trade, such as Nigeria and Sierra Leone*". Unlike other trading companies Theobroma does not pre-finance local export companies as risks are considered too high.

In this highly concentrated market, the Fairtrade/Max Havelaar trading system has carved out its own supply chains. In 1991 the first Fairtrade cocoa was imported into the Netherlands by Daarnhouwer and grinded by Dutch Cocoa (also the licensed liquor supplier for Mars) and they have remained the most important trader and processor in the Fairtrade supply chain. Since then other traders and processor have registered with FLO-Cert, including subsidiaries of Barry Callebaut and ADM. There are many (small) Fairtrade registered manufacturers of final consumer products, most of them specialised in Fairtrade labelled products.

During the project period world cocoa prices increased substantially from around 1 500 US\$/tonne to over 2 000 US\$/tonne. However, it was also reported that the price differential between good and bad quality cocoa widened.

⁴ Fold, N. 2002. Lead Firms and Competition in 'Bi-polar' Commodity Chains: Grinders and Branders in the Global Cocoa-Chocolate Industry. In: *Journal of Agrarian Change*, Vol. 2, No. 2 April 2002, pp 228-24.7

Table 2. Development of world cocoa prices

ICCO Daily Price = average of the daily prices of the nearest three active future trading months on the London Terminal market and on the New York Coffee, Sugar and Cocoa Exchange at time of the London close.

	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08
Price in US\$/tonne	1 580	1 873	1 534	1 571	1 557	1 854	2 234 (Oct-Mar)

Source: ICCO, 2008

2. PROJECT PARTNERS AND ACTIVITIES

2.1. Introduction to KAE and Twin

KAE

The partner for this project in Sierra Leone is Kpeya Agricultural Enterprise (KAE), an association of cocoa farmers in the Kailahun and Kenema districts. It was founded in 1996 and is a registered member of the National Association of Farmers of Sierra Leone. The aim of KAE is to provide a competitive market for small-scale cocoa producers and to facilitate solutions for problems affecting residents of cocoa growing areas.

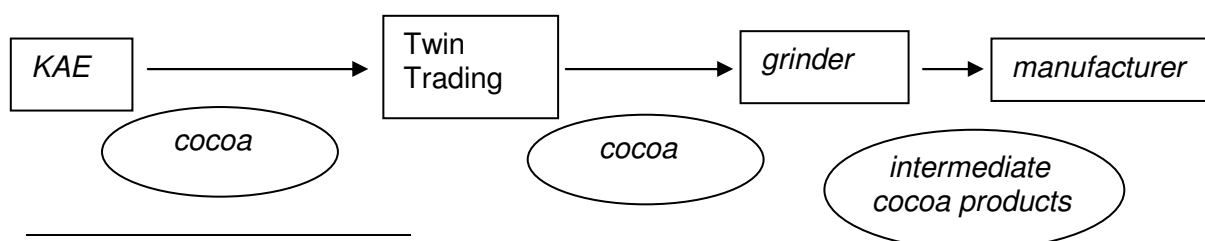
Kpeya (pronounced Peya) is an acronym of, **Kpeje** and **Yawei**; Peje West and Yawei being the two chiefdoms in the Kailahun District where the founding members came from. In the Mende language Kpeya also means “give way”. The founding members thought it was time for the traders to “give way” to the farmers in the trading activities, so that farmers could get a better deal.

When the project started in 2005, it was estimated KAE had around 700 members, but they were not registered. This number increased to 1 331 farmers who participated in the Farmer Field School programme in 2007. However, in 2008 KAE started to suspend members who did not pay membership contribution and only 300 full paying members remained.

Twin⁵

During the project formulation in 2004 the Fairtrade organization Twin in the UK proposed KAE as a candidate for project support. Twin is a producer-owned membership organization, registered as a charity in the UK. Twin was contracted by the project to provide technical assistance to KAE. Twin is the sole member of Twin Trading, a company limited by guaranty set up to trade on behalf of its producer partners. Any profit is re-invested in producer support through the charity. Since KAE became Fairtrade certified, Twin Trading has provided pre-finance to KAE and has been the buyer of the cocoa exported in 2009.

Figure 1: The KAE cocoa supply chain



⁵ <http://www.twin.org.uk/>

2.2. Main project activities and results

To be able to train a large number of farmers, the project opted for the Farmer Field School (FFS) methodology, making use of existing local experience of FFS in rice and the excellent FFS manual from the Sustainable Trees Crops Programme of the International Institute of Tropical Agriculture (IITA). The project adapted the STCP manual to the Sierra Leone situation and made it compatible with organic standards.

After a year, modules on collective marketing, membership responsibilities and gender were added to the curriculum. By September 2008, a total of 50 Farmer Field Schools had been running and 67 farmer-facilitators, 30 produce agents and 1 366 farmers had been trained.

Date	Farmer Field School programme
2006	FFS Curriculum preparation workshop
2006 - 01-14 May (?)	Facilitator training for Farmer Field Schools (FSS) programme
2006 - September – 2 days	FFS facilitator refresher training
2006 - June-October	29 Farmer Field Schools on underbrushing, pruning, shade management, harvesting, fermentation and drying
2007 – 25-30 May	Facilitator refresher training
2007 – 8-19 July	Facilitator training for new facilitators
2007 June – January 2008	50 FFS on underbrushing, pruning, shade management, harvesting, fermentation and drying, role of members in KAE, collective marketing, gender issues*
2008 May	facilitator refresher training
June-September 2008	#? FFS
2009 February	facilitator refresher training on shade management and pruning

* The FFS programme for 2007/08 is presented in Annex 5 to this report

In addition to farmer training, support was provided to KAE staff, especially the manager.

2006 – 14-22 May	visit by two managers of Fairtrade certified cooperative in Ghana
2006 July	study tour for KAE manager to Fairtrade certified cocoa cooperative in Ghana
2007 - 18-24 March	study trip for KAE manager to UK
2007 – 13-20 November	visit by FLO liaison officer
2006-2008	7 missions by Twin
2009	3 missions by West African Fair Fruits (WAFF)

Through these visits and through communication by email and telephone, the project assisted KAE management in improving its membership registration, developing the KAE constitution and organizing its first General Annual Assembly. The project supported KAE staff to improve its filing and other administrative procedures and personnel management. The project assisted the manager to develop the cocoa export operations, make budgets and cost-benefit analysis and prepare annual financial reports.

The group obtained Fairtrade certification from FLO in February 2008. KAE exported its first half container in early 2007, but did not manage to export in the following year. The first full container was exported in early 2009.

Table 3. KAE cocoa sales in tonnes

	2005/06	2006/07	2007/08	2008 /09
Export	0	6	0	12,5
Local market	?	?	3	15

3. RESULTS OF THE FARMER SURVEY

3.1. Characteristics of the sample

KAE members are cocoa farmers in Kailahun and Kenema Districts in the East Region of Sierra Leone. The KAE membership base has been changing continuously throughout the project period. The membership list submitted to FLO-Cert in September 2007 was taken as the sample population. One village has been selected in each of the 6 areas where KAE members were present at the time. In each village 7 farmers were interviewed for a total of 42 farmers in 6 different villages.

Even though the sample list of farmers dated back to September 2007, the consultant conducting the survey found that many of the listed farmers had not been involved in the training or were no longer living in the community. The consultant therefore used the full membership list of 2008 to complete the sample and even included some farmers who had followed the training but did not appear on the membership list of KAE, but for whom it was confirmed by the KAE manager that they were KAE members. Therefore, some of the interviewed farmers were not selected at random.

Most people joined the association in the period from 2005 to 2008, with a peak in 2005-2006. It appears that farmers from Pejewa and Baiwala were “early” members, whereas farmers from Benduma and Bakar only joined recently. The sample includes 12 female farmers and 30 male farmers.

It should be noted that after getting stricter on membership contributions in 2008, only 300 out of the 1 300 farmers on the FFS training list are considered full members. Most of the interviewed farmers were suspended and KAE is no longer present in Peje Bongre chiefdom.

District	Chiefdom	Village	Date respondents became members	# inter-viewed members	Of which full paying in 2008
Kailahun	Peje West	Pejewa	1996	7	1
	Yawei	Bakar	2006 and 2007	7	1
	Peje Bongre	Bawomahun	2005	7	0
	Mandu	Levuma Mandu	From 2004 to 2008	7	4
	Dia	Baiwala	From 1996 to 2008	7	3
Kenema	Malegohum	Benduma	All in 2006	7	0

The major crops grown by the farmers interviewed are cocoa, palm oil, rice, coffee and cassava. Farmers’ total cultivated area ranges from 2.4 ha (smallest) to 22.2 ha (largest), with an average of 6.2 hectares. Two large farms of 22.2 ha and 18.3 ha increase the average disproportionately; the median farm size is 4.9 ha. The area dedicated to cocoa production is on average 3 hectares (with a minimum of 0.8 ha and a maximum of 10 ha), representing on average 46 percent of the total cultivated area.

3.2. Training organized by the project

All respondents took part in project activities, almost all in both KAE meetings and FFS training sessions. The following table shows the type of training sessions the interviewed farmers attended. More details about answers to specific questions can be found the annexes to this report.

Training Subject	Attended by	Specific methods mentioned during interview*	
(probed question)		(open questions)	
Organic production methods	42	planting	8
		underbrushing**	40
		pruning	42
		shade management	39
		black pod sanitation	19
		pest/disease	17
		toileting (?)	1
		irrigation & drainage	1
Post harvest	33	harvesting methods	1
		fermentation	32
		drying	30
		processing***	13
		storage	1
Marketing	23	negotiation skills & cooperation for marketing	1
Association management	11		
standards and certification	10		
Record-keeping	3		

* Mentioned in one or more of the following questions: new method learned, method to use in future or method that was also applied by non-members.

** (Under)brushing is cutting the undergrowth, usually with a cutlass (=machete).

*** Processing at farmer level includes splitting the pods and scooping out the beans, washing, fermentation, cleaning and drying.

All respondents said that they had never received this type of training in the past and the level of satisfaction is generally high. Seven farmers were “satisfied” with the training received (17 percent) and 35 were “very satisfied” (83 percent).

It should be noted that whereas all farmers from Benduma, Bakar and Pejewa and 6 out of 7 farmers from Bawomahun received training on processing (fermentation and drying), only 3 farmers from Levuma Mandu and 2 from Baiwala mentioned these subjects.

Only 3 out of the 42 farmers mentioned some specific difficulties linked to the application of the new methods. These difficulties are:

- More labour is now required, which implies the need for more money to hire labour;
- A better quality cocoa was produced but it could not be sold through KAE because it was not collected.

This last point is not directly linked to the implementation of the new methods, but it highlights a critical fact: efforts to improve quality in the context of this project may not be rewarded if the group (KAE) is not able to fulfil its commitments to buy the cocoa produced. This may jeopardize the whole process of quality improvement.

All farmers declare that they plan to continue using these methods in the future, and all consider that the new methods learnt had an impact on the quality of the product obtained (only one farmer could not reply as she had just followed the training the previous month).

The following quality improvements were noted:

Level	Quality improvement	# respondents (out of 41)
plant	- good vegetative (vigorous) growth - planted seedlings grow well - fresher leaves - healthy plants	5 1 1 1
pod	- healthy pods - ripe pods - more pods per tree - big pods - better quality (not further specified)	20 15 14 13 1
beans	- brown beans* - better flavour/taste* - healthy / well dried /no mould - less broken beans - clean beans - big beans	24 21 10 9 2 2

* Well fermented beans are brown/mauve, not well fermented beans are purple. Good fermentation results in better chocolate flavour.

It should be noted that two of the mentioned quality improvements are related to training topics that were not mentioned earlier:

- The reduction of the number of broken beans is the result of more care at pod splitting;
- The ripeness of the pods depends on the moment of harvest.

Most respondents thought they needed more training on record keeping. Other training needs seemed to depend on the village. For example, respondents from Benduma, Pejewa and Bawomahun would like to be trained on marketing, whereas quite a few respondents from Levuma Mandu and Baiwala thought they still needed more training on post-harvest methods.

Topic	Ben-duma	Levuma Mandu	Bai-wala	Bakar	Pejewa	Bawo-mahun	total
Record keeping	5	5	4	5	5	3	27
Marketing	3				5	6	14
Adult literacy		1	2	3	3	3	12
Post harvest		4	3			1	8
Standards & certification		2	2				4
Business management	3						3
Produce buying	1						1
Other crops						1	1

3.3. Changes in production area and yields

As the orchards are old, all respondents were already producing and selling cocoa before joining the group. Quantities sold annually varied between 90 kilos and 2 tonnes but a substantial proportion of the respondents had no precise idea of the quantity sold (about 10 out of the 42 respondents), in particular because they used to sell in small quantities and did not keep records. They were all selling to traders or in some cases to middlemen or buying agents; some specify that they were selling to Lebanese traders. One farmer mentioned that he also sold to another producer group.

All respondents said they increased the area dedicated to cocoa production since the start of the project (or since they joined the group), mainly by rehabilitating old plantations but also by planting new plots under cocoa (74 percent of respondents).

Means of increasing area dedicated to cocoa production:	Number of respondents	Percentage
- Rehabilitation old plantations	11	26%
- New plantations and rehabilitation old ones	31	74%
Total respondents	42	100%

For 34 out of the 42 respondents, the quantity produced has increased since they started using the methods discussed in the FFS. The explanations given for these changes are:

Impact on quantity produced	# respondents	Percentage
Increase acreage & yield	26	62%
Increase in yield (only)	3	7%
Increase acreage & yield & price incentive	2	5%
Increase in acreage (only)	1	2%
Increase in acreage but not yet harvested	2	5%
No change	1	2%
Don't know / No answer	7	17%
Total farmers interviewed	42	100%

The table shows that a total of 31 farmers explicitly mentioned that cocoa yields had increased. From observations in the area by the project technical officer, she thinks that “increased area” can be mainly attributed to the rehabilitation of old plantations, and thus increase in production is more a question of increase in yield than from real expansion of the area under cocoa. This is confirmed by the respondents attributing higher income to higher yields and not to increased acreage (see next paragraph).

Two farmers mentioned the price incentive as a reason for increased production. The general increase in cocoa prices may have resulted in more cocoa being harvested. When prices are too low, farmers may judge it is not worth to hire labour for the harvest. One farmer explained that the increase in the quantity produced was also linked to better processing techniques.

All 42 farmers interviewed consider that the cost of producing cocoa has increased with the improved production methods, especially labour demands.

Type of expenditure	Increased	Decreased	No change	Don't know / No answer
Purchase seedlings and young trees	8	-	34	-
Time spent (only family labour)	42	-	-	-
Cost of hiring external labour	41	-	1	-
Purchase of specific equipment	6	1	35	-
Fertiliser purchase	-	1	40	1
Purchase of phytosanitary products	1	1	40	-
Transportation costs to the market	9	8	24	1
Interests on loans	19	7	15	1

A reason given for the increase in transportation costs is that in 2007, the quantity produced was bigger but as KAE did not buy the production, more time was spent transporting cocoa to the nearest market. The increase in the interest on loans is obviously not related to the production methods, but it seems an important factor in the local economy as it was mentioned by 19 respondents.

3.4. Impact on incomes

Apart from cocoa production, all 42 farmers have some other commercial activities. These activities are mainly producing and selling other agricultural products like oil palm, rice, coffee, banana, cassava, cola nuts, groundnuts, as well as some other fruits and vegetables.

Share of income from cocoa in total income	Number respondents	Percentage
A small part	5	12%
About half	6	14%
The major part of my total income	31	74%

Concerning the changes that farmers had noticed in the income obtained from selling cocoa since they got certified as fair trade producers, 28 farmers consider that their income from cocoa has increased, 13 farmers did not know and one farmer had observed no change in his income.

Reasons for increase in income derived from cocoa since certification	# respondents	Percentage
Higher yields	26/28	93%
Higher negotiated prices (even from agents)	8/28	28%
Increased acreage	5/28	18%
Prices more stable	2/28	7%
Improved quality of products (after training)	1/28	4%

The higher income was mainly attributed to the higher yields. Only 5 respondents (18 percent) attributed higher income to increased acreage. This is a remarkable difference from the answers on the reasons for increased production, where the increase in acreage seemed to be much more important.

Of note is that one farmer specified that as she is now less indebted to agents she can negotiate better.

A further 3 farmers reported that they could afford additional expenses, even though they did not report higher income since certification. One farmer explained that he/she did not sell to KAE, but had extra income because of better quality cocoa.

In an open question on what they normally used cocoa income for, most respondents (80 to 100 percent) mentioned school fees, food purchases and health expenses. Expenditures for hired labour, clothes and house improvements/construction were also mentioned quite frequently (by 20 to 50 percent of respondents). The 31 farmers who reported to have now additional income from cocoa sales reported this was used on the same expenditures. In addition, extra income was also spent on celebrations, funerals and secret societies (cultural institutions controlling rites of passage). For more details see Annex 2.

While 31 farmers answered that additional income was used for food purchases, later in the interview only 19 farmers confirmed that the project had a positive impact on food purchases, while 22 farmers said that there were no impacts and one farmer could not answer.

3.5. Marketing and group dynamics

Eight of the 42 farmers interviewed declared that they sold cocoa to KAE in 2007: two farmers in Levuma Mandu, one in Baiwala and five in Bakar. However, according to the minutes of the Annual General Meeting in March 2008, KAE did not collect any cocoa in these villages in the 2007/08 season. In 2007 KAE did not receive any prefinancing and depended on farmers to deliver the cocoa on credit and to be paid after KAE sold the cocoa⁶. However, according to KAE records one of the farmers from Bakar did sell cocoa to KAE in December 2006. In January 2007 cocoa was also bought from Levuma Mandu and Baiwala, but no records were kept on individual farmer sales.

Therefore, it is most likely the eight farmers referred to sales in the 2006/07 harvesting season and not to the 2007/08 season. Alternatively, produce agents (whether or not formally working for KAE) may have collected and traded cocoa in the name of KAE without informing KAE management.

When asked what had changed when they started to sell a certified product with the support of KAE, those who reported sales to KAE mentioned higher and more stable prices. Almost all respondents mentioned that price sensitization and information about prices was helping them negotiating with agents (other than KAE), although with mixed results.

“Not much has changed because cocoa collected in Benduma during 2007 harvest was not collected by KAE. Cocoa was therefore sold to Lebanese agent who paid less but I was forced to sell because of indebtedness. However, KAE sensitized farmers on prices”.

“Price sensitization has helped [farmers in] remote areas to be aware of price increases but indebtedness prevents us from taking full advantage” (Bawomahun).

⁶ According to these minutes, KAE did collect small quantities of cocoa in Nekabo, Jormu, Komende, Nyadyama, Vaahun, Teklenga and Majihun, all in Nongowa chiefdom in Kenema District, and in Kigbai and Batiama in Peje West chiefdom and in Gbaima and Massayeima in Yawei chiefdom.

In Levuma Mandu and Baiwala, farmers mentioned that KAE had built a store⁷ in the village and trained agents to buy cocoa. The farmers in Bakar (who reported to have sold to KAE) also noted that there was now a KAE produce agent in the village, which reduced transport costs. In Bawomahun, a store is being built but farmers mentioned that there was no KAE buying agent in the village.

Changes in marketing since certification	Respondents	Percentage
Better informed about prices	25 / 42	60%
KAE built store	12 / 42	29%
KAE will transport / no transport costs	9 / 42	21%
KAE agents trained to buy from farmers	8 / 42	19%
Stable and higher prices	7 / 42	17%
More cocoa marketed, not through KAE	3 / 42	7%
More loans to repay	1 / 42	2%
Collective marketing as a group	1 / 42	2%

Despite the problems in 2007, farmers seemed to be confident and to have a lot of hopes concerning the perspective of marketing the next harvest through the group and obtaining better conditions: particularly better and stable prices, and transport facilities. Transport to Kenema is a concern in Levuma Mandu (where a storage facility has been built).

A later question was whether the group was helping the farmers to sell her or his products, and to this 22 out of 42 respondents answered affirmatively. Again the main features of group support in marketing are: price information and sensitization, higher prices, the construction of a store in some villages, reduced transportation constraints and the presence of KAE buying agents in the village. One respondent specified that he *“learned to accurately read scales used for weighing cocoa so that traders will stop cheating me”*.

A large majority of respondents (41 over 42) noticed some changes in the group since they joined.

Changes in the group since joined	# respondents
More training organized	22
Improved production and processing techniques, gained new skills	16
More cooperation (incl. work exchange)	11
A store was built, KAE buying agents in the village	7
Better organized, more democracy	5
Better and stable price obtained (or to be obtained)	5
Supply of free cocoa seedlings, nitrogen fixing trees or other seedlings/suckers ⁸ (Levuma)	5
Supply of bicycles (Levuma)	2
Increased production	1
KAE provided drying platform (Levuma)	1
No changes	1

⁷ In fact, the Stabex project built a store for KAE.

⁸ KAE received seedlings and bicycles from the Stabex project.

When farmers mention that more training sessions are organized, they refer mainly to training in improved production and processing techniques. A female respondent insisted that “men and women are trained together and men and women work together”.

3.6. Other impacts of the project

Impact on other crops

Most respondents reported no changes in the production of food crops, but in some cases increased cocoa production constrained the production of food crops due to limited on-farm labour availability or necessitated increased food production to be able to feed the cocoa workers. But more often earnings from cocoa sales were used to hire more labour for food crop production.

Impact on the production of food crops	# respondents	Percentage
Yes, please explain:	11	26%
- Hire more labour to produce food crops	8	
- Increase food production to feed (cocoa) workers	2	
-Food production is reduced due to labour constraints	2	
No	30	71%
Don't know	1	2%

Impact on health

Surprisingly the impact on health is generally perceived as negative, because more farm work, sometimes in the rain, leads to health problems. One respondent specified this is especially a problem for women.

Health impacts	# respondents
Negative impact: more farm work leads to health problems such as body aches, colds, fever and headaches	24
Positive impact: able to afford medicines	1
No health impact	15
Don't know	2

Women

When asked about the specific impact on women, the majority of respondents mentioned project impacts that are not specific to women, such as learning about improved techniques. There are no evident differences between answers given by male and female respondents (the sample is composed of 12 women and 30 men). Specific benefits for women seem to be that they participate more in decision making, and are generally more involved in cocoa production (traditionally the responsibility of men).

Benefits for women* (open question)	# respondents
Women participate more in decision making	17 / 42
Women more involved in cocoa production	10 / 42
Women are more confident	3 / 42
More cooperation between men and women, between women	3 / 42
More income for women from marketing of their own cocoa	2 / 42

* Reported impacts that are not specific to women have not been included in the table.

Impact at community level

All farmers mentioned an impact at village level, including the fact that other farmers want to join the group and than non-KAE members have adopted better processing and production methods (mentioned as well by all 42 farmers interviewed).

Some of the mentioned impacts are not very likely to be real project impacts. For example, most cocoa farms are old, and the percentage of upland under cocoa has not changed significantly for a long time. Some benefits, such as the stores and bicycles, were obtained from the Stabex project and not from the FAO project.

Impact at community level*	# respondents
Also non-members adopted new techniques, specifically:	42/42
- planting methods	2
- underbrushing	15
- shade management	34
- pruning	36
- pest and disease control, especially removal of black pods	9
- toileting	1
- fermentation	21
- drying	14
processing	5
store**	11
bicycle**	8
higher prices (or hoping/expecting)	3 (2)
most/more upland now for cocoa so rice only in swamps	3
more information sharing	3
more cooperation	3
presence of KAE produce agent	3
drying platform	2
more democratic	1
more people engaged in cocoa	1
labour more expensive	1

* Answers referring to individual benefits only have not been included in the table.

** In the villages where interviews took place the FAO project did not fund a store, but the Stabex project did build a store in Levuma Mandu and provided KAE with some bicycles.

When specifically asked about employment opportunities, most respondents mentioned that more youths were now involved in cocoa production, either on their own farm or as hired labour. Youths form labour groups for hire or labour exchange. One farmer found that now youths also get better paid for underbrushing.

Project and new job opportunities (open question)	Number respondents
Youths more involved in cocoa production:	38 / 42
More work for women in cocoa production and processing	20 / 42
School boys work more on cocoa farms during holidays (underbrushing)	10 / 42
More work for all due to increased cocoa production	14 / 42

3.7. Problems and suggestions

The question asked to farmers at the end of the interview: “Is there anything you would like to add to help improve project implementation?”, resulted in all kinds of requests, some directly linked to cocoa production or KAE activities and some concerning issues that are far beyond the scope of this project, such as requests for health care facilities, etc. For full details of the answers see Annex 3.

A large number of farmers mentioned the need for pre-financing of cocoa production or access to credit facilities to prevent indebtedness towards Lebanese traders and their agents (mentioned by 37 out of 42 farmers interviewed). Provision of rice on credit during the “hungry” period or “food for work” was also mentioned by various farmers showing that access to food is still an issue⁹.

Other frequent requests or proposals were to improve the roads, to have KAE buying agents present in the village with enough funds to buy cocoa (especially requested in Pejewa) and to build a store in the village (especially in Bakar and Pejewa).

In addition to these problems and request by the farmers, the consultant also noted an unhealthy rivalry between KAE members and members of another cooperative. This was very obvious in the case of a former KAE member who had to leave the group. The KAE members explained that this was due to the fact that her husband was the head of the other cooperative. This is very unfortunate because the cooperatives still trade only a very small percentage of the total cocoa exports and the competition should be with the traders who pay low prices and do not differentiate between good and bad quality cocoa. All the cooperatives try to pay a better price for better quality and may benefit from more cooperation instead of rivalry.

⁹ Note: Food and rice are almost synonym in the region. Even if there would be enough other food sources, if a family does not have access to rice it is perceived as a lack of access to food. Labourers are also partly paid in the form of meals, and these meals are expected to be based on rice.

4. ECONOMICS OF PRODUCTION AND TRADE

4.1. Prices

Prices are paid in leone per pound, with 2.2lb equalling 1 kg, and an exchange rate in the years 2007 and 2008 of 2 900 leones for one US dollar.

The reported prices that respondents received before joining the group vary a lot according to the date of joining KAE and the location. The reported producer price paid by the local produce agents in 2007 varies even more, according to location. A farmer explained that the price he received was not fixed because he was indebted to the agents; indebtedness towards cocoa traders actually weakens farmers' bargaining power. It is thus unclear whether local market prices reported by the farmers are the real full prices or only the cash received after deduction of loan repayments to the traders.

Table 4. Producer prices of cocoa in leone/lb (1 kg = 2.2 lb) reported by interviewed farmers

Village	Average usual price received in past	Average price from local traders 2007	Average KAE price 2007
Benduma	900	929	1 200
Levuma Mandu	879	1 090	2 000
Baiwala	733	733	1 775
Bakar	500	929	1 500
Pejewa	680	771	1 500
Bawomahun	658	586	1 500
Total range Le/lb	500-1 000	500-1 500	1 200-2 000
Average Le/lb	729	829	1 491
Average in US\$/kg	0.55	0.63	1.1
# responses	38	39	29*

** Even though only 8 farmers sold to KAE, probably in the 2006/07 season, still 29 farmers claimed to know the KAE price in 2007.*

Even though possibly none of the respondents sold to KAE in the 2007/08 season, it is quite possible that farmers were aware of KAE prices as KAE tried to get cocoa on credit by advertising their relatively high prices to be paid at the end of the season.

As KAE seldom provided loans to the farmers, reported KAE prices may be considered full prices. Even though the KAE manager reported that the KAE price was 1 500 Le/lb in 2007 and 1 700 and 2 000 Le/lb towards the end of the season in early 2008, the KAE prices reported by the farmers ranged from 1 200 – 2 000 Le/lb.

In early 2008 KAE sold the three tonnes they had received on credit (from villages not included in the sample) to a local trader in Kenema for Le 13 608 000 or 2 062 Le/lb.

As already noted in the introduction, world cocoa market increased during the project implementation period. This was also translated into higher producer prices in Sierra Leone, as can be seen from the evolution of cocoa prices in Sierra Leone from 2004 to 2008 (in leone per pound).

Table 5. Estimated cocoa prices per in Le/lb from 2004-2008

Data collected by C. Sandy Margao (survey consultant) from various sources

Price (Le/lb)	2004		2005		2006		2007	
	Low	High	Low	High	Low	High	Low	High
Producer price KAE	900	950	1 000	1 050	1 050	1 100	1 200	2 000
Producer price local agents ^{/a}	500	700	500	600	700	800	500	900
Prices received by agents from traders ^{/b}	550	750	550	650	750	850	550	950
Wholesale price Kenema	600	800	700	700	800	900	600	1 000

a\ Producers may get less due to being indebted to agents or lack of price information.

b\ Village producer agents may sell directly to Lebanese traders in Kenema (who provide the cash beforehand and 1/3 of transport costs).

It is remarkable that while the highest prices of the season have consistently increased over the years, the lowest prices have remained at the same level, with a temporary increase in 2006 only. This even though the total production in Sierra Leone in 2007 was reported below average due to late but heavy rains, which would be expected to result in higher prices. In her report, the survey consultant explained that “*the agents offer very low prices at the beginning of the season and wait until cocoa supplies in a particular village are depleted before offering higher prices.*”

Trade margins at the village agent and local trade levels are consistently reported to be 50 leones per pound. From the difference between prices received by village agents and the wholesale price in Kenema, also transport costs need to be paid. This indicates that local traders who do not bring the cocoa as far as Freetown port do have quite small profit margins. When the price was low (2004) the village agent and local trader margins were around 10 percent of the producer price, but with the current prices it is only 5.5 percent of the producer price. In this light the 8 percent margin KAE intends to pay to its produce agents is quite high.

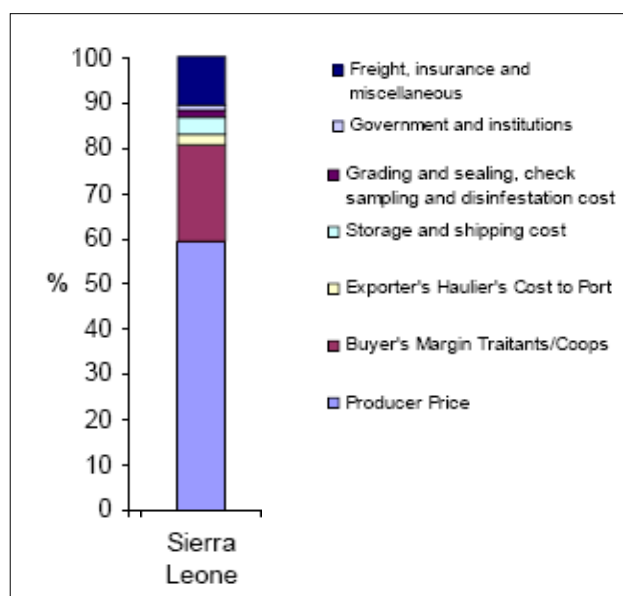
For comparison, the DTIS estimated that at a producer price of 800 leones per pound, the producer price was around 60 percent of the CIF price and the total buyer's margin was around 20 percent of that price (see figure). This 20 percent includes local village agents and local traders' margins and some local transport costs. If both data sets are correct, this would mean the largest part of this trade margin goes to the exporters and to the traders who bring the cocoa to the port.

Ms Sandy Margao also tried to collect FOB prices but exporters were not willing to provide the requested information.

The FLO Fairtrade Minimum price for cocoa is US\$ 1 600 per metric tonne (MT) FOB for Fairtrade standard quality cocoa beans. If the world market price for the specific origin or type of cocoa beans is higher than the Fairtrade minimum price, the world market price, which includes the quality differential, applies. On top of this the FLO Fairtrade premium is paid. This premium for all standard cocoa qualities is US\$ 150 per metric tonne (MT) FOB. The additional Fair Trade premium for certified organic cocoa beans, which is sold

as such, is US\$ 200.--/MT. The minimum price for FT organic cocoa beans including premiums is US\$ 1 950.-- /MT FOB¹⁰.

Figure 2: Costs in the supply chain as % of CIF N. Europe



Source: DTIS 2006

4.2. Yields

Cocoa is harvested from June to January with most of the harvest done at the end of the rainy season from August to October. It is difficult for farmers to estimate total yield in a given year because they harvest and sell in bits and keep no records of such transactions. Nevertheless the consultant collected their estimates, resulting in an average for the six villages of 386 kg/ha.

Table 6. Estimated yield of cocoa in KAE project areas (2007)

Estimated yield	Benduma	Levuma	Baiwala	Bakar	Pejewa	Bawomahun	Mean
lb/ha	750	850	800	900	850	950	850
kg/ha	341	386	364	409	386	432	386

This estimate is very high when compared to other data sources, even in the West African context. Furthermore, a difference should be made between total yield and marketable yields, as specified by the RPSDP study.

¹⁰ FLO, 2007. Fairtrade standards for cocoa for small farmers' organizations, version 15.11.2007.

Table 7. Yield estimates in kg/ha from various sources¹¹

Sierra Leone						West-Africa	
DTIS 2006	MAFFS 2005	CRS	RPSDP 2006/07		KAE farmers 2007/08	DTIS 2006	STCP 2007
			total	marketable			
100-200	225-350	370	370	315	385 (340-430)	300	200-400

4.3. Cost of production and gross margin

The survey consultants also collected data on costs of production in group discussions. As Sierra Leonean cocoa farmers normally do not use any external inputs, there are no data available for conventional production systems involving the use of agrochemicals. It is therefore impossible to make a comparison between organic and conventional production systems. However, we may compare the data with the earlier RPSDP study.

Table 8. Estimates of operational costs and margins of cocoa production per ha in Sierra Leone

Costs/ha	RPSDP data, 2006-07	data from 6 KAE villages 2007/08		
Variable costs				
Inputs (fertilizer, agrochemicals etc.)	0	0		
Labour		family labour*	hired labour	total
- Underbrushing & weeding	153 000	80 000	120 000	200 000
- Shade management	-	60 000	60 000	120 000
- Pruning	72 000	40 000	40 000	80 000
- Pest & disease management (scaring monkeys, collecting black pods, etc.)		20 000		20 000
- Harvesting (incl. transport to house)	144 000	120 000	20 000	140 000
- Washing, Fermentation and drying	102 000	100 000		100 000
- marketing	12 000			
Subtotal labour = variable costs	483 000	660 000		
Marketable yield	315 kg/ha	385kg/ha		
	local market	KAE price		
Price	2 400 Le/kg	2 200 Le/kg 3 300 Le/kg		
Revenue per ha per year	756 000	847 000 1270 500		
Operational margin Le/ha	273 000	187 000 610 500		
Operational margin in US\$/ha	94 \$/ha	64 \$/ha 210 \$/ha		

* Valued at opportunity cost

¹¹

- IF (DTIS), 2006 (see footnote 1).
- MAFFS, 2005, *Crop Production Guidelines for Sierra Leone, 2005*.
- Catholic Relief Services (CRS), communication to survey consultant in 2008.
- Rural and Private Sector Development Project (RPSDP) formulation (2006) and appraisal (2007) missions (funded by the World Bank).
- Sustainable Tree Crops Program (STCP), 2007. *The Analysis of Policies, Productivity and Agricultural Transformation in the Cocoa-Producing Rural Economies of West Africa. Technical report, Executive Summary*, By J. Gockowski, IITA-Ghana.

The main differences between the RPSDP and the KAE data are the labour costs for shade management and pest and disease management for the KAE members. This further confirms that KAE farmers are indeed using “good organic practices” on their farms.

In the draft for the RPSDP study, Ms Margao¹² tried to estimate fixed costs. For tools including the cutlass (machete), harvesting knives and plastic bowls she came to a cost of 80 000 leones per year. In addition, depreciation of drying floors could be included, divided over the number of farmers who use them. However, the project and KAE recommend using raised platforms from bamboo, for which some labour costs should be foreseen.

No information is available on opportunity costs for the land. Depreciation of plantation investment costs may be ignored since plantations are so old that they may be considered written off.

As with the price and yield data, again doubts exist as to the extent to which the data on production costs provided by the KAE members reflect reality. Comparing both RPSDP and KAE costs/kg with data from the STCP, it would seem cost of production is much higher in Sierra Leone than in Ghana and Côte d’Ivoire. This is hard to believe, especially because variable costs in Côte d’Ivoire also include considerable input costs and rural wages are not likely to be much higher in Sierra Leone than in neighbouring countries.

Table 9. Comparison of variable costs per kg of cocoa produced

	Sierra Leone		Ghana	Côte d’Ivoire
	RPSDP	KAE		
yield kg/ha	315	385	207	352
variables costs				
Le/kg	1 533	1 714		
US\$/kg	0.53	0.59	0.195	0.34

Source for Ghana and Côte d’Ivoire: Gockowski¹³ (Also includes family labour valued at opportunity costs)

The only aspect of the KAE data that is in line with STCP findings is that the earnings from cocoa are very low. Of interest is STCP’s finding that the largest 25 percent of producers had yields nearly four times greater and costs of production¹⁴ that were four times lower than the smallest quartile on average. The STCP also found that if family labour was assigned an opportunity cost, 44 percent of the more than 4 000 producers were estimated to be making economic losses.

¹² Ms Margao was a consultant for the RPSDP study as well as for the impact survey discussed in this report.

¹³ Gockowski, 2006 *Researching and Addressing the Competitiveness of Cocoa Supply Origins with a Focus on West Africa*, IITA/STCP. Presentation for the CIRAD workshop on international cocoa research, Paris.

¹⁴ Presumably costs per kg.

5. DISCUSSION AND CONCLUSIONS

It is clear that the KAE membership base has not been stable during the project period. In fact, whole villages were added to or left the organization. This has implications for the impact at farmer level as some farmers may have just participated in the FFS programme for one season, after which they were no longer member of KAE. At the same time, this high fluctuation in membership is also a result of the impact, or rather the lack of impact, due to the failure of KAE to export and bring real benefits in terms of higher revenue to the farmers.

The Farmer Field School programme can nevertheless be considered to have had a considerable impact, with 90 to 100 percent of farmers having learned about underbrushing, pruning and shade management. Whereas underbrushing is not a new method at all, the FFS programme helped to organise gangs to get abandoned orchards cleared again. Indeed, all farmers reported to have rehabilitated orchards during the project period.

Even as farmers have demonstrated to be very reluctant to prune trees as they did not want to cut off branches that may carry fruits, at least it is clear they have learned about it. If KAE continues its FFS programme, more attention should be given to sanitation for black pod control and other organic methods for pest and disease control. It may also be concluded that close to 100 percent of the respondents had received training on fermentation and drying, which is critical to improve quality and be able to get a higher price on the world market.

Whether the project had any impact on income remains inconclusive. Only 28 farmers, or 66 percent of the respondents, reported an increase of income, but these were almost all due to higher yields. As the project was implemented three to six years after the end of the war, it may be assumed most farmers in the area were rehabilitating their orchards, whether they received training by the project or not. As no data were collected from farmers not involved in the project, no comparison can be made with yield increases from these farmers.

One clear benefit of the project has been the better information on prices, which was reported by 60 percent of the respondents. Even if the negotiation position of the farmers remains weak if they are indebted to the traders, this price awareness may have helped to increase producer prices for those not indebted.

The most important conclusion is of course that KAE has not succeeded in exporting Fairtrade cocoa. Even if they did export 1 container in 2008, this is still far below the break-even point and represents a negligible volume compared to the total volume produced and sold by the farmers who KAE trained in the FFS programme.

In theory, farmers could advance significant volumes to KAE so that KAE could export it under Fairtrade conditions. But obviously most farmers are not in an economic position that they can wait the whole season before they will be paid, and there also may be a lack of trust in KAE as to whether they would really obtain a better price for them.

In her report, the consultant also noted that *“farmers wishing to join KAE are discouraged by the fact that KAE members who kept cocoa in 2007 to sell through KAE ended up selling to village agents because cocoa was not collected.”*

Furthermore, she also wrote that “KAE members complained of receiving less for their well fermented and well dried cocoa because of weight loss, while poorly dried cocoa of non-KAE members fetched more from traders and agents/subagents of Lebanese traders”¹⁵. Thus, improving quality is not rewarded if KAE is not able to fulfil its commitments to buy the cocoa produced; this may jeopardize all the project efforts to improve quality through change in production and processing methods.

The following recommendations were made by the consultant:

- There is a need to update the KAE farmer lists so as to reflect the current membership of very new members and removal of deceased members or members who no longer live in the villages where KAE is active.
- KAE needs to be empowered to be able to market cocoa produced by all KAE members so that the extra time and money spent on organic/fair-trade cocoa production and processing will not be perceived by members as a disincentive.
- KAE should pre-finance cocoa production or link up KAE members with credit facilities to avoid producers getting indebted to agents.
- KAE members need training on record keeping.

¹⁵ However, the point on the weight loss was not recorded in the questionnaires.

ANNEXES

Annex 1. Detailed overview of respondents' answers on questions regarding training subjects and new production methods (see paragraph 3.2.)

Training Subject	Attended by	Specific methods	Mentioned during interview*	New methods learned	Will use in future
<i>(probed question)</i>			<i>(open questions)</i>		
Organic production methods	42	planting	8	7	3
		underbrushing**	40	37	34
		pruning	42	38	38
		shade management	39	35	34
		black pod sanitation	19	5	15
		pest/disease	17	12	6
		toileting (?)	1	1	1
		irrigation & drainage	1	1	
Post harvest	33	harvesting methods	1	1	
		fermentation	32	16	30
		drying	30	15	23
		processing***	13	12	1
		storage	1		1
Marketing	23	negotiation skills & cooperation for marketing	1	1	1
Association management	11				
standards and certification	10				
Record-keeping	3				

* Mentioned in one or more of the following questions: new method learned, method to use in future or method that was also applied by non-members.

** (Under)brushing is cutting the undergrowth, usually with a cutlass (=machete).

*** Processing at farmer level includes splitting the pods and scooping out the beans, washing, fermentation, cleaning and drying.

Annex 2. Use of cocoa income (see paragraph 3.4.)

Income from cocoa is normally used for: <i>(open question)</i>	#	additional income is used for: <i>(probed question)</i>	#
school fees	41/42	school fees	31/31
food purchases	37/42	food purchases	31/31
health expenses	34/42	clothes	31/31
hired labour	19/42	health expenses	29/31
clothes	15/42	celebrations & funerals*	28/31
house construction/improvement	10/42	payment of debts/taxes	23/31
celebrations & funerals*	4/42	house construction/improvement	9/31
other household expenditures	3/42	land purchase	2/31
purchase of seedlings	1/42	purchase of agricultural equipment	2/31

* includes marriages and secret societies (cultural institutions controlling rites of passage)

Annex 3. Additional comments collected during farmer survey 2008

Is there anything you would like to add to help improve project implementation? (Answers that were given by more than 1 respondent)	Benduma	Levuma Mandu	Baiwala	Bakar	Pejewa	Bawo-mahun	TOTAL
Credit facilities / Pre-financing of cocoa production to prevent indebting farmers to traders and their agents	7	7	7	3	6	7	37
Improved road network (specifically rehabilitation of road to Kenema)	7	4	1	0	0	6	18
Presence of KAE buying agents with sufficient funds to buy 2008 harvest	1	0	3	0	7	3	14
KAE to build produce store in village	3	0	0	5	5	0	13
Better prices (than Lebanese traders)	0	3	4	0	1	2	10
Provide rice during hungry period on cost recovery basis	0	3	2	1	3	0	9
Provide/help with construction of drying place	0	0	0	0	3	4	7
Water wells	1	0	0	6	0	0	7
Provision of (cocoa) transport facilities	1	1	0	3	0	1	6
Rice mill to ease workload of women	0	4	2	0	0	0	6
Tools (to be sold in store)	0	0	1	0	0	5	6
Meeting place or community centre	0	0	0	6	0	0	6
Transparency and accountability	0	2	2	0	1	0	5
More training needed / KAE Facilitator to start visiting again	1	0	0	0	4	0	5
Jute bags	0	0	0	1	0	3	4
Health centre/medicines	0	0	0	4	0	0	4
Food for work	0	0	1	1	0	0	2
Toilet	1	0	0	1	0	0	2
Better link (communication) to KAE head office	0	0	2	0	0	0	2
Seedlings	0	0	0	0	0	2	2

Individual wishes included rain gear, seed rice, assistance with labour costs, payment in the form of zinc and even a market in the village and an Islamic school for children to learn Arabic. One respondent thought it would be useful for raising awareness if KAE had its own t-shirt. One respondent noted that KAE should export to benefit from the [Fairtrade, ed.] premium.

Annex 4. Weights and measures

1 kg (kilogramme)	=	2.2 lbs
1 Mt (metric tonne)	=	2 200 pounds
1 Mt (metric tonne)	=	1 000 Kg
1 cocoa bag	≈	200 lbs
1 container of cocoa	=	12.5 tonnes
1 ha (hectare)	=	2.47 acres
1 US\$	=	2 900 leones (2007 rate)

Annex 5: Farmer Field School programme for 2007/2008

(Actual implementation was delayed and not all facilitators continued until January)

¹ TOT = Training of Trainers (in this case training of farmers to be FFS facilitators)

	May	June	July	August	September	October	November	December	January
TOT¹	Facilitator training				Refresher course				
Number of sessions		3	3	3	3	4	2	2	4
Topics	1 st session	AESA + RK ²	AESA + RK ²	AESA + RK ²	AESA + RK ²	AESA + RK ²	AESA + RK ²	AESA + RK ²	AESA + RK ²
	2 nd session	Rehabilitation Pruning	Under-brushing+ Sanitation	Under-brushing+ Sanitation	Harvest/(pod selection	Fermentation ³	Drying + analysis	Rehabilitation	Shade management
	3 rd session	Pruning + shade management	Collective marketing	Responsibilities of KAE members	Fermentation+ drying Prepare platform	Fermentation ³			Gender
	4 th session					Fermentation ³ + Start drying exp			Responsibilities + prepare for AGA

² AESA = AgroEcoSystems Analysis (field observations and analysis) RK = Record Keeping

³ The fermentation experiment needs 7 short sessions plus final analysis in 8 consecutive days. These count for a total of 3 normal sessions.

Annex 6. Individual farmer questionnaire

Questionnaire number: _____ Country: Sierra Leone Code questionnaire (do not fill in)

1. Date of the interview (dd/mm/yy): _____

2. Name of the interviewer: _____

2a. Interview start time: _____

2b. Interview end time: _____

3. Name of the farmer: _____

4. Sex: Female (1) Male (2) (circle number)

5. Age: (Circle number in the first column)

- | | |
|---|----------|
| 1 | Below 25 |
| 2 | 26-30 |
| 3 | 31-35 |
| 4 | 36-40 |
| 5 | 41-45 |
| 6 | 46-50 |
| 7 | 51-55 |
| 8 | 56-60 |
| 9 | Over 60 |

6. Village: _____

7. Group: _____

8. Responsibility in the group: _____

9. Date joined group: _____

10. Export product concerned: **Cocoa****11. Have you heard of the project with FAO on export of organic and/or fair trade cocoa?**

(Circle number)

1 No 2 Yes 3 Don't know

→ If no, please briefly describe the project**→ If yes, proceed to the next question****12. If yes, in which project activity did you take part?****Type of activity**Fill with **Yes....1** or **No....2**

1. Training

2. Meeting

3. Other, please specify:

⇒ If NO is the only answer to Question 11 and 12, the interview cannot continue.Please select another farmer from the list that was given to you.

SECTION 1 – TRAINING & CAPACITY BUILDING

13. If you received one or more training organized by FAO, please specify the type of training received:

Type of training

Fill with Yes...1 or
No.....2

1. Production methods
2. Record keeping
3. Post harvest
4. *Collect of organic shea nut*
5. *Production of organic shea butter*
6. Marketing
7. Standards and certification
8. Association management
9. Other, please specify

Non applicable
Non applicable

⇒ If answer is No to all, go to Question 26

14. If yes, to what extent were you satisfied with the training received?

(Circle number)

- 1 Very unsatisfied
- 2 Unsatisfied
- 3 Neutral
- 4 Satisfied
- 5 Very satisfied
- 6 Don't know

15. If Unsatisfied/Very unsatisfied, please explain why:

16. Did you already receive this type of training before attending the training organised by FAO? *(that is: before this project)*

(Circle number)

- 1 No 2 Yes 3 Don't know

17. What are the new methods that you learnt in the training organised by FAO?

18. If you started using these methods, did you face some specific difficulties?

- 1 No 2 Yes 3 Don't know

19. If yes, could you please explain?

20. After the project is completed, do you think you will continue to use the new skills or methods you learned with the project?

- 1 No 2 Yes 3 Don't know

21. If Yes, what are they? List example(s)

22. If No, why not?

23. Has the training/assistance you received from this project helped in improving "quality" of the crop produced?

- 1 No 2 Yes 3 Don't know

24. If not, why not?

25. If Yes, what aspect of product “quality” has changed most?

26. Is there a subject on which you think you need training, but that was not included in the training organized by FAO? (Answer should be related to the export crop targeted by the project)

SECTION 2 – PRODUCTION, MARKETING, COST OF PRODUCTION

27. What are the major crops that you grow on your farm? (Indicate the 3 most important)

1. _____ 2. _____ 3. _____

28. What is the total area of land that you own or work?

_____ (Specify unit: ☐ hectare ☐ acre ☐ other:.....)

29. What is the acreage presently dedicated to cocoa production?

_____ (Specify unit: ☐ hectare ☐ acre ☐ other:.....)

******* The questions that follow focus exclusively on cocoa production *******

➤ BEFORE CERTIFICATION

30. Before starting to sell certified cocoa through the group, what was the quantity of cocoa that you used to sell every year?

_____ (Specify unit: ☐ kilo ☐ tonne ☐ other:.....)

31. How did you usually market your products before certification?

(Circle number (s))

- 1 State/marketing board
- 2 Local market
- 3 Private firm
- 4 Producers' group without certification
- 5 Trader
- 6 Other, specify.....

32. What was the price that you did usually get when selling cocoa before being certified in organic agriculture and/or fair trade (in local currency)?

_____ (Specify unit: ☐ kilo ☐ tonne ☐ other:.....)

➤ CHANGES OCCURED WITH CERTIFICATION

33. Since you joined the project, the area dedicated to cocoa production has:

(Circle number)

- 1 Decreased
- 2 Not changed
- 3 Increased

34. How do you explain this change?

- 1 Bought new land
- 2 New plantations
- 3 Sold land
- 4 Cocoa tree replaced by other crops
- 5 Other, specify:

35. Since you started producing organic cocoa, the quantity you produce annually has:*(Circle number)*

- 1 Decreased
- 2 Not changed ⇒ Q37
- 3 Increased
- 4 Don't know

36. How do you explain this change? (Only if answer 1 or 3 to Q35)*(Specify it is linked to a change in yields, area under cultivation, etc.)***37. Do you think that with organic production methods, the yield in cocoa production has:***(Circle number)*

- 1 Decreased
- 2 Not changed
- 3 Increased
- 4 Don't know

*(If necessary explain: Yield = production per unit of land or per tree; expressed in ton/ha, kg/tree, etc...)***38. The cost of producing cocoa has changed with organic production methods?***(Circle number)*

- 1 Decreased
- 2 Not changed ⇒ Q40
- 3 Increased
- 4 Don't know

39. If there had been a change in production costs, what has changed exactly?

Review the different types of cost of production and for each line write in the right column the number corresponding to the answer (1,2,3, or 4):

Increase...1 Decrease...2 No change...3 Don't know... 4

Select one answer per line**1****2****3****4**

- 1 Purchase of seeds and young trees
- 2 Time spent: weeding, harvesting, etc. (only family labour)
- 3 Cost of hiring external labour
- 4 Purchase of specific equipment
- 5 Fertiliser purchase
- 6 Purchase of phytosanitary products
- 7 Transportation costs to the market
- 8 Interests on loans
- 9 Other, specify :

40. MARKETING: What has changed for you in the marketing of cocoa when you started selling a certified product (organic/ fair trade) with the support of the group (KAE)?

(for instance: less time spent selling on the spot market, transporting products to the market easier, negotiating prices, price stability, etc.)

➤ **HARVEST 2007**

41. What was the quantity of cocoa sold to the group in 2007?

_____ (Specify unit: ☐ kilo ☐ ton ☐ other :.....)

42. During 2007 campaign, did you also sell cocoa to other buyers or on local market?

1 | No 2 | Yes 3 | Don't know

43. What was the price paid by the group for cocoa in 2007 (in local currency)?

_____ (Specify unit: ☐ kilo ☐ ton ☐ other :.....)

44. How much did you receive in total from the group from the cocoa sold in 2007 (local currency)?

45. Do you know the price of “non-organic” cocoa on local market in 2007?

_____ (Specify unit: ☐ kilo ☐ ton ☐ other :.....)

46. Do you have any other commercial activity (apart from cocoa sales)?

1 | No 2 | Yes

47. If yes, could you please specify what are these activities?

48. The income that you earn from selling cocoa represents what share of your total income: (Circle number)

- 1 A small part (<50%)
- 2 About half (50%)
- 3 The major part of my total income (>50%)
- 4 Don't know

49. Has the income you obtain from selling cocoa changed since you got certified as an organic/fair trade producer?

(Circle number)

- 1 Decreased
- 2 Not changed ⇒ Q51
- 3 Increased
- 4 Don't know

50. How would you explain the difference?

51. How do you usually spend the money you receive from selling cocoa (specifically before certification)?

52. What are the additional expenses that you managed to afford since you started producing organic/fair trade cocoa?

(Select number(s))

- 1 Purchase of agricultural equipment
- 2 Purchase of fertilisers and phytosanitary products
- 3 Purchase of land
- 4 Household improvements
- 5 Other investments, specify
- 6 Health expenses
- 7 Schooling fees
- 8 Clothing items
- 9 Food purchase
- 10 Paying debt or taxes
- 11 Funeral expenses
- 12 Other, specify:

53. Has the project had any impact on your food purchases?

1 No 2 Yes 3 Don't know

54. Has the project had any impact on the production of other food crops?

(For instance if organic production methods are used to grow food crops or if you managed to buy fertilisers, etc.)

1 No 2 Yes 3 Don't know

55. If yes, please explain

56. Do you feel that the training/new production methods have had an effect on your or your family's health?

1 No 2 Yes 3 Don't know

57. If yes, please explain

SECTION 3 – GROUP

58. Have you noticed any change in your group since you joined it?

(if possible try to see if these changes are specifically linked to project activities)

1 No 2 Yes 3 Don't know

59. If yes, what are these changes?

60. Being a member of the group, does it help you in selling your products?

1 No 2 Yes 3 Don't know

61. Could you please explain?

SECTION 4 - IMPACT

62. Does organic/fair trade certification bring you some other benefits that were not mentioned before? *(We already talked about changes in production, marketing, prices, and income)*

1 | No 2 | Yes 3 | Don't know

63. If the answer is yes, could you explain what other benefits?

64. Are there negative impacts, problems, difficulties?

1 | No 2 | Yes 3 | Don't know

65. If the answer is yes, could you explain which one(s)?

66. Do you think that organic/fair trade certification has had any impact(s) on your community/village?

1 | No 2 | Yes 3 | Don't know

67. If Yes, what are they? List example(s)

68. Can you think of any ways that women could have specifically benefited from the project?

1 | No 2 | Yes 3 | Don't know

69. If yes, how? List example(s)

70. Has the project created new job opportunities in your community?

1 | No 2 | Yes 3 | Don't know

71. If yes, for whom and doing what exactly?

72. Have you noticed if some new people are interested in joining the group?

1 | No 2 | Yes 3 | Don't know

73. Do you know if some people who are not members of the group and do not participate in the project have also adopted these new techniques (organic production methods in particular)?

1 | No 2 | Yes 3 | Don't know

74. If yes, which technique(s)?

75. Is there anything else that you would like to add to help improve project implementation?

Thank you