Organic cocoa production in Cameroon and Togo

Feasibility study by KIT Royal Tropical Institute, AgroEco/Louis Bolk Institute and Tradin

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Executive summary

1. Early 2008, the prospects of the organic market were very favourable. In response to increasing global demand, organic cocoa production was booming, and organic cocoa of some origins was fetching premiums between USD 500 and 1,500 per tonne above the spot market price of conventional cocoa. Large traditional chocolate processors and manufacturers moved into organic chocolate and organic cocoa by-products. In recent years, many organic chocolate brands have been launched worldwide.

2. The emergence of strong organic brands and the entry of mainstream food corporations in the organic cocoa market reflected the growing market for organic cocoa. So far, Latin American and Caribbean countries have been the main producers of organic cocoa beans.

3. In response to this compelling market potential, an ICCO/CFC-funded feasibility study was conducted to assess the potential of organic cocoa in West Africa, building as much as possible upon existing initiatives. The study focused on two countries, Cameroon and Togo. The objective of the study was to identify the best production areas, producer organizations and support activities for boosting organic cocoa production in both countries. In case of positive outcomes we were invited to present a proposal for a follow-up project.

Method

4. The Royal Tropical Institute (KIT) conducted two surveys. In Cameroon, KIT interviewed 14 cooperatives involving around 2500 farmers. In Togo, approximately 600 farmers were interviewed, located in 16 different villages. The project organized four multi-stakeholder workshops in Cameroon and Togo. This participatory approach helped experts from KIT to pre-select production areas and farmer groups. It also helped KIT to gain insight in main opportunities and bottlenecks in both countries. Experts from KIT also undertook field visits to the pre-selected cooperatives, individual farmers and private traders. In addition, several in-dept discussions took place with key stakeholders and (potential) partners in both countries. Their perspectives and roles were explored. KIT embedded the study in current relevant international and national policy/sector debates. Furthermore, KIT did a desk-study on market developments. The projects' findings and results were disseminated by KIT on several occasions. Provisional findings were shared with key-stakeholders in Cameroon and Togo. In March 2009, KIT presented the findings of the feasibility study at the Second Roundtable for a Sustainable Cocoa Economy (2RSCE) in Trinidad and Tobago.

Outcomes of the study

5. The study revealed that organic cocoa production in Cameroon and Togo is feasible, but in both countries under different conditions. In Cameroon, it is possible to build upon multi-stakeholder partnerships, such as the UPCOCOA project and the Sustainable Tree Crop Programme (STCP). In Togo, more emphasis has to be put on strengthening of the supply chain and building new partnerships. Especially in Togo the availability of improved planting material is a problem. In both countries, pests and diseases are a major bottleneck.

6. The study also demonstrated that the feasibility of organic cocoa production depends on a number of variables. Of which the most important are the number of farmers involved, their yields per hectare, and their loyalty with respect to selling their cocoa to their organizations. Premiums are also important. The study revealed two important challenges:

- First, due to its origin, prices for West African cocoa on the world market are relatively high. Organic cocoa coming from this region may price itself out the market when the premiums for certified organic cocoa are too high. However, premiums are generally seen as the main incentive for cocoa farmers to shift from producing conventional cocoa to the production of certified organic cocoa. Furthermore, fetching an attractive premium depends largely on market factors that are beyond the direct control of farmers. Therefore, the advantages of organic cocoa production should preferably not be limited to obtaining a premium for organic, but should include other tangible economic and social gains. For example, it should contribute to higher yields, more stable and direct trade relations, and prompt payment.

- Second, the occurrence of pests and diseases in both countries is a major bottleneck for producing high volumes of cocoa beans. In Cameroon, myrid bugs, especially *Sahlbergella singularis* and the pathogen *Phytophthora megakarya*, the cause of Black Pod, are the main problems. In Togo, cocoa also suffers from losses due to the myrid bug *Distantiella theobroma*, the pathogen *P. palmivora*, and Cocoa Swollen Shoot Virus (CSSV). In order to make organic cocoa production a feasible option for farmers, increased on-farm knowledge of biological ways of dealing with pests and diseases is required, as well as improved access to alternative agricultural inputs.

7. Biological ways of pest management in cocoa farming have been a major area of research, involving institutes and companies such as IRAD/IRAD, ITRA, Masterfoods and USDA, already for a number of years. There have been successful experiments with for example *Trichoderma* to combat the Black Pod disease. Nevertheless, such alternative inputs are not yet accessible to farmers and have not been integrated in the training curricula provided to farmers (e.g. integrated pest management –IPM strategies in the farmer field schools). So far, the effectiveness of alternative inputs has been tested in isolated experimental plots, not taking into account socio-economic parameters for success at farmers' level.

8. Successful promotion of organic cocoa production at farmers' level requires on-farm research and on-farm training into the effectiveness of biological ways of pest management in relation to socioeconomic parameters. In view of the findings and following the objectives stated at the beginning of the feasibility study, a follow-up action plan was formulated by KIT (**see Annex 2**). The proposed follow-up action plan, entitled "Organic Cocoa Package: an Integrated Approach Towards Organic Cocoa Production in West Africa" aims at improving the knowledge gaps on biological ways of pest management among cocoa smallholding farmer by reinforcing the following three areas: a) on-farm research for new methods of biological controls; b) on-farm training on new ways of biological controls and; c) socio-economic research on the impact of organic cocoa production.

Table of Content

Executive Summary ……..2

1 Introduction.....7
1.1 Background and objectives of the study 7
1.2 Terms of Reference for Feasibility study 8
1.3 Project Outputs, Activities and Methodology.....9

2 The State of Organic Cocoa in the world..... 10
2.1 Organic cocoa in West Africa: a business approach….....12
2.2 The feasibility study..... 16

3. Cameroon..... 16
3.1 Socio-economic conditions.....16
3.2 Local cocoa economy 17
3.3 Local governance and development management.....19
3.4 Natural environment.....20
3.5 SWOT analysis as basis for selection of producing areas and producer organizations…….... 23
3.5.1Selection of cocoa producing regions and producer organizations..... 25
3.6 A value chain analysis 36
3.6.1 The cocoa value chain.....36
3.6.2 Feasibility study for organic cocoa in Cameroon 40
3.6.3 Costs comparison.....46

4 Togo..... 47
4.1 Socio-economic conditions.....47
4.2 Local cocoa economy 48
4.3 Local governance and development management.....50
4.3.1 Natural environment.....50
4.3.2 A SWOT Analysis as basis for the selection of producing areas and Producer organizations.....52
4.4 Selection of cocoa producing regions and farmers 53
4.5 A Value chain analysis..... 61
4.5.1 The cocoa value chain.....61
4.5.2 Feasibility study for organic cocoa in Togo.....63

5 Recommendations and Conclusions..... 67

Annex 1 A comparison on costs: traditional, conventional, organic and Hi-tec cocoa..70

Annex 2. Organic Cocoa Package: An Integrated Approach Towards Organic Cocoa Production in West Arica……71

List of Tables

Table 1.1Growth of the global organic cocoa market..... 11
Table 1.2 Price premiums for organic beans (USD/tonne) 13
Table 1.3 Overview of organic inputs and tests results..... 15
Table 1.4 Production trend in cocoa beans (thousand tonnes) 17
Table 1.5 Control methods of farmers..... 21
Table 1.6 Uncertified producer organizations in the South West.....32
Table 1.7 Profile of selected cooperatives..... 36
Table 1.8 Major export companies and percentage of quantity exported in 2008. 38
Table 1.9 Multinational companies..... 38
Table 2.0 Value shares of actors in the conventional chain 39
Table 2.1 Certification costs Cameroon..... 42
Table 2.2 Feasibility calculation Cameroon..... 43
Table 2.3 Variables in feasibility (sensitivity analysis)..... 45
Table 2.4 Cost involved in Organic Practice Ghana…….. 46
Table 2.5 The national production of cocoa 1996-1997 – 2004/05 49
Table 2.6 Value shares of actors in the conventional cocoa chain in Togo..... 62
Table 2.7 Certification costs Togo..... 63
Table 2.8 Feasibility study in Togo..... 64
Table 2.9 Variables in feasibility (sensitivity analysis)..... 67

List of Figures

Figure 1.1 A SWOT analyses for organic cocoa production in Cameroon..... 24
Figure 1.2 Total area of cultivated surface (ha) in the four regions of the study..... 25
Figure 1.3 Mean cocoa yields (kg/ha/yr) in the four regions …….. 25
Figure 1.4 Mean quantity of fungicides used (kg/ha/yr) in the different regions …… 26
Figure 1.5 Mean quantity of insecticide used (lt/ha/yr)..... 27
Figure 1.6 The Cocoa Chain in Cameroon …… 36
Figure 1.7 A SWOT analysis for organic cocoa production in Togo …….. 53
Figure 1.8 Area under cultivation in Agou (ha) …….. 54
Figure 1.9 Production in tonnes in Agou …….. 55
Figure 2.0 Area Under cultivation in FOWOKPO (ha) …….. 55
Figure 2.1 Production in tonnes in FIWOKPO …….. 56
Figure 2.2 Area under Cultivation in Badou …….. 56
Figure 2.3 Production in Badou …….. 57
Figure 2.4 Area under cultivation in Klabe Azafi …….. 57
Figure 2.5 Production in Klabe Azafi …….. 58
Figure 2.6 Area under cultivation in Zobegan …….. 58
Figure 2.7 Production in Zobegan …….. 59
Figure 2.8 The Cocoa Value Chain in Togo …….. 61

List of Boxes

Box 1.1 Organic Agriculture..... 14
Box 1.2 Institutional embedding of organic cocoa production..... 35
Box 1.3 Internal Control System……41

List of Maps

Map 1.1 Main cocoa producing zones in the South West province 29
Map 1.2 Agronomic values of soils of the South West Province..... 30
Map 1.3 Levels of rainfall within South West 31
Map 1.4 Togo 48
Map 1.5 Selection of cocoa producing areas..... 60

Abbreviations

ACDR Association de Conseils et d'Appuis pour le Développement Rural

APAF Association pour la Promotion de l'agro Foresterie

CFC Common Fund for Commodities

CICC Cocoa and Coffee Interprofessional Board

CIG Common Initiative Groups

COPAL Cocoa Producers' Alliance

CSSV Cocoa Swollen Shoot Virus

FFS Farmer Field Schools

FUPROCAT Fédération des Unions des Groupements de Producteurs de Café et Cacao

GROUPEX Société Coopérative des Exploitants Agricole

ICCO International Cocoa Organization

IITA International Institute of Tropical Agriculture

ITRA *Institute Togolais de la Recherche Agronomique*

IPM Integrated Pest Management

KIT Royal Tropical Institute

KONAFCOOP Konye Area Farmers Cooperative Society

LBA Licensed Buying Agents

LBI Louis Bolk Institute

NCCB National Cocoa and Coffee Board

ODECO Organisme de Développement d'Etude, de Formation et de Conseil

ONCPB Office National de Commercialisation de Produits de Base

OPAT Board of Agricultural Products of Togo

SOCAMAC Société Coopérative d'Agriculteur de la Mefou et Akono

SODECAO Société de Développement du Cacao

STCP Sustainable Tree Crop Programme

SWOT Strengths Weaknesses Opportunities Threats

UGPCC Union des groupements de producteurs de Café et Cacao

1. Introduction

1.1 Background and objectives of the study

9. In April 2008, when the International Cocoa Organization (ICCO) and the Common Fund for Commodities (CFC) decided to fund this feasibility study, the prospects of the organic market looked very favourable. Organic cocoa production was demand-driven and booming, fetching premiums between USD 500 and 1,500 per tonne above the spot market price of conventional cocoa. As a result supply of organic cocoa grew rapidly and large traditional cocoa traders and chocolate manufacturers (such as Barry Callebaut, Olam, Cadbury, Blommer and Puratos, and Mars) moved into organic chocolate and cocoa by-products. In recent years different organic chocolate brands have been launched worldwide. Most of these feature in the high quality, some in the single origin segment. Most of the supply of organic cocoa beans comes from the Caribbean and Latin America, very little from West Africa.

10. This feasibility study aimed to clarify the potential of West Africa in this new market, building –as far as possible- upon existing initiatives. West Africa produces around 70 per cent of world's cocoa production. The region is known for its smallholder-dominated agriculture. Only a quarter of the West African area under cocoa cultivation is treated with agrochemicals. Hence, there are major opportunities to start organic cocoa production. However, recent price-developments (high commodity prices) and increases in the supply of organic cocoa affect this potential.

11. The main objective of the project is to identify the best production areas, producers' organizations and support activities for organic cocoa production in Cameroon and Togo. The project will provide a detailed analysis of the value chain of cocoa in the two countries, as well as an assessment of the current status and the opportunities for organic cocoa production and export, taking into account the recent trends. Finally, the study will develop an action plan for supporting organic cocoa exporters in selected areas, with selected producers' groups and stakeholders.

12. This feasibility study has been a participatory process, building upon existing initiatives and existing partnerships in the field of sustainable cocoa production in these countries. The results of this study are presented in this report. The study has been funded by a Fast Track Grant of the CFC headquarters in Amsterdam.

13. The Royal Tropical Institute (KIT) has been the leading executing agency, with AgroEco and Tradin in a supportive role. KIT is a knowledge centre for international and intercultural cooperation, which engages closely with the private sector in finding market-based solutions to rural poverty. AgroEco is an international company with more than 20 years of experience in setting up organic projects in developing countries. Recently it has successfully set-up the first organic cocoa production in Ghana. In January 2009, 250 Ghanaian smallholders were involved in organic cocoa production. In 2009, AgroEco merged with the Louis Bolk Institute (LBI).

14. Tradin Organic Agriculture is a world-leading trading company in organic commodities aimed at the food and bakery industry, based in Amsterdam. Tradin and AgroEco/LBI have already explored opportunities for organic cocoa production in Togo in 2007. This study builds upon this knowledge.

15. Staff from AgroEco's office in Ghana has been actively involved in the data collection process, with support from associated consultants in Togo and Cameroon.

Cameroon

16. In Cameroon local representatives of UPCOCOA, a multi-stakeholder initiative consisting of ISCOM, ADM Cocoa B.V., Masterfoods B.V/Mars Inc., RIAS (a consultancy organization within the Rabobank) and IITA/STCP, participated in the feasibility study and contributed with their experience. A number of the cooperatives falling under the UPCOCOA umbrella have been pre-selected for phase two.

17. In Cameroon, a main partner is the Institute of Agricultural Research and Development (IRAD). Another important partner is the Sustainable Tree Crop Programme (STCP), a public-private partnership. The training curriculum on organic cocoa production can be build within existing training modules on good farm practices and integrated pest management, given to 'trainers of trainers' in farmer field schools (FFSs). The Agro Eco consultant, Wanjii Terence cooperated with Jonas Mva Mva from STCP.

Togo

18. In Togo, the project builds upon earlier work done between Agro Eco, *Institut Togolais de la Recherche Agronomique* (ITRA) and European Union/STABEX COM. The Stabex programme aims at the reduction of Swollen shoot disease and rehabilitation of the cocoa plantations. Any organic project fits well in these objectives. Agro Eco's local office in Togo is managed by a Togolese consultant, Julien Nyuiadzi who has a long experience with the production and processing of agricultural products for the organic market. Being local, and active in organic agriculture, he has a valuable network and experience, of use for this project.

1.2 Terms of Reference for Feasibility study

Project Rationale

19. West Africa is world leader in the production and export of cocoa. The sector is characterized by smallholder production; millions of rural families depend on cocoa for their livelihoods. Despite the important contribution of the cocoa sector to the national economies, the problems in the sector are numerous. Farmers are trapped in a poverty cycle characterized by low incomes, low productivity, difficult access to credit, deteriorating quality, low access to information, low organizational capacity, lack of leadership, and more.

20. Organic cocoa provides a possible solution out of the poverty cycle. Organic certification potentially adds value to the untreated "organic by default" cocoa beans from West Africa. Currently, many cocoa farms in the countries included in this project use little or no agrochemicals. Involvement in organic cocoa production can support smallholders to improve the quality of their cocoa beans and to increase and stabilize their incomes. Involvement in organic cocoa can create more stable trade relations and guarantees traceability along the supply chain.

21. Organic cocoa potentially also has other beneficial impacts, for example:

- Local economic development: African organic cocoa can be promoted as a single-origin cocoa in the international markets

- Institutional development: producer associations can be engaged as fully-fledged business partners and can serve as a leading example for other farmer organizations in African countries

- The environment: the exclusive purchase of organically certified cocoa promotes sustainable
- management of cocoa plantations, without the use of agri-chemicals

1.3 Project Outputs, Activities and Methodology

22. To identify the best production areas, producer organizations and support activities for organic cocoa production in West Africa, three project outputs have been identified and the following activities have taken place.

Output 1: Value chain analysis of cocoa

In Cameroon and Togo value chains have been analysed, distinguishing conventional cocoa producing areas (where currently no chemical are used: 'organic by default'). Some comparisons are made with Ghana, where AgroEco/LBI has already experience with the production of organic cocoa.

Activities

1.1. Identification of, and meeting with, key stakeholders from the public and private sectors in each country. The meetings served to define the focus of the subsequent field work.

1.2. Field work for the analysis of costs, bottlenecks and capacity gaps in the value chain. Based on the identification of key stakeholders, a selection of production areas has been subject to a value chain analysis. This involved fieldwork starting at the farm level, mapping all prices and costs, issues and bottlenecks, up to the export port.

1.3. The analysis and reporting of the fieldwork data in the Netherlands.

Output 2: Assessment of the current status and the opportunities for organic cocoa export

Activities

2.1. Feasibility study and investment plan for conversion to organic agriculture.

2.2. Stakeholder meeting on opportunities for organic cocoa. Recommendations have been made about the most promising producing areas, partnership constellations and intervention strategies.

2.3. Selection of areas, producer organizations and stakeholders for further action. The project partners have come to a selection of most promising production areas and partners for future action.

Output 3: Action plan for supporting organic export in selected areas, with selected producer groups and stakeholders.

Activities

3.1. Follow-up visits to the most promising producer organizations and exporters have resulted in a draft plan for further action to support organic cocoa exports

3.2. Develop project plans and budget for organic cocoa export support.

Methodology

We used different quantitative and qualitative research methods:

- Farmer surveys in Cameroon and Togo: In Cameroon the field work included visits and interviews with 14 cooperatives with together 2500 farmer- members. In Togo around 600 farmers have been interviewed. The sections on Cameroon and Togo give more information on the respondents.
- Two multi-stakeholder workshops in Cameroon and two in Togo
- In-dept discussions with key-stakeholders and (potential) partners in both countries
- Sharing the idea with stakeholders, getting to know their perspectives and explore the role that different actors can play in a second phase
- Field visits to cooperatives and individual farmers, and private traders
- Embedding of feasibility study in current relevant national policy/sector debates
- Desk-study on market developments

2 The State of Organic Cocoa in the world

23. A sustainable cocoa economy is a major concern for everyone involved in the cocoa industry, from cocoa farmers to chocolate manufacturers. The common understanding that a sustainable cocoa economy is in the interest of all stakeholders is also reflected in the round table meetings on a sustainable cocoa economy, which took place in Accra, Ghana in 2007 and in March 2009 in Port of Spain, Trinidad & Tobago.

24. A sustainable cocoa economy refers to the three pillars of sustainability: economic, environmental and social. Often economic sustainability is put forward as a prerequisite for small producers to take up environmental and social challenges. Productivity levels of small-scale producers of cocoa are generally low. Reasons for this are the prevalence of pests and diseases, soil degradation and the generally high age of farmers and their farms and the trees. This in combination with the relatively high costs of inputs, weak institutional support and a lack of credit facilities, make it difficult for small-scale cocoa farmers to make cocoa production a lucrative business. At the same time one sees the environment deteriorating. In striving towards a sustainable cocoa economy this makes it both a challenge and necessity to look for win-win opportunities, where environmental and social objectives are being reached and at the same time economic opportunities are being created for cocoa smallholders.

25. Organic cocoa production has been put forward as win-win opportunity, having an intrinsic environmental value, being economically profitable and as engine for sustainable development of the sector.

26. At the moment of submitting the proposal, the prospects of the organic market looked very favourable. Between 2003 and 2005 the annual growth rate of organic cocoa was 38 per cent, with a total production of almost 21,865 tonnes in 2006, mainly in Latin American countries. In 2008, total organic cocoa production was around 40,000 tonnes (see Table 1.1).

Table 1.1 Growth of the global organic cocoa market

YEAR	1998	2000	2002	2004	2006	2008
Production in tonnes	8,390	13,050	18,065	21,865	28,575	40,000
Growth rate	-	56%	38%	21%	31%	39%

Source: ICCO, 2007 and personal communication Tradin 2008

27. If we look at the origin of organic certified cocoa, this cocoa is mainly produced in Latin American countries. The Dominican Republic is by far the largest supplier. According to estimations of Tradin (2008), the Dominican Republic produced around 30,000 tonnes of organic cocoa in 2008, which is around two-thirds of world's total organic cocoa production. In African countries 3,000 tonnes were produced, mainly coming from Tanzania, Uganda and São Tomé. In Latin America around 10,000 tonnes were produced (with Peru and Ecuador as main contributors). This means that the organic market only represents a very small share of the total cocoa market, estimated at less than 0.5 per cent (ICCO, 2007). However, the demand for organic cocoa products is growing at a very strong pace, as consumers are increasingly concerned about the safety of their food supply along with other environmental issues.

28. Cocoa is a very suitable product for organic trade. It is consumed in large quantities, has structured trade channels, and is processed into a luxury item that has a high perceived value and few substitutes. For this reason, large traditional chocolate processors and manufacturers have moved into organic cocoa by-products and chocolate, making the organic sector more and more mainstream (for example Barry Callebaut, ADM, Cargill, Cadbury, Blommer and Puratos). The only issue is that organic cocoa needs to be processed separately from regular and not all factories have the facilities or are in the habit of processing smaller batches.

29. In recent years, many organic chocolate brands have been launched worldwide. In Europe, various supermarket chains feature own brand organic chocolate. Green & Blacks (UK, 1991) is actually the biggest in turnover with an estimated turnover of USD 100 million (2006) and still growing fast. The producer of Green & Blacks is ICAM (Italian). The only other "old" brand is Rapunzel (German). Other brands that have been launched in recent years are e.g.: Viviani (German), Dagoba (USA) and Newman's own (USA).

30. The emergence of strong brand and the entry of large food corporations in the organic cocoa market are a clear signal that the demand for organic cocoa beans will increase fast, but the quality must be high. This project aims to unleash the potential of West Africa in this new market. It takes stock of

existing initiatives in making cocoa more sustainable, in order to identify the best production areas, producer organizations and support activities.

2.1 Organic cocoa in West Africa: a business approach

31. West Africa is world leader in the production and export of cocoa. The sector is characterized by smallholder production; millions of rural families depend on cocoa for their livelihoods. Despite the important contribution of the cocoa sector to the national economies, the problems in the sector are numerous. Farmers are trapped in a poverty cycle characterized by old trees, small/split farms, low productivity, low incomes, difficult access to credit, deteriorating quality, low access to information, low organizational capacity, lack of leadership, and more. The question in this study is under what conditions organic cocoa production in West Africa can provide a solution to this poverty trap. This is important as a lack of profitability of small-scale cocoa-farming poses a serious threat to the future supply of cocoa.

32. Only a quarter of the West African area under cocoa cultivation is treated with agrochemicals. Hence, in West Africa there are opportunities to start organic cocoa production. However, there is a considerable threat of pests and diseases, whereas the problem of soil degradation and decreasing soil fertility might be even more difficult to solve. It is important to realize that most farmers are interested in applying chemicals on their farm, but simply cannot afford them or lack knowledge on how to apply chemicals in the right way. Therefore, organic cocoa production should have a clear focus on management of pests and diseases, and should go hand in hand with appropriate training and affordable organic inputs.

33. Organic cocoa production has an intrinsic environmental value, promoting and enhancing agro-ecosystem health. Also from an economic perspective organic cocoa production can be profitable. Organic cocoa commands a higher price than conventional cocoa, attracting a premium (ICCO, 2007). This premium should cover both the cost of fulfilling organic cocoa production requirements and fees paid to certification bodies. The high costs of certification can be problematic, especially when volumes of production are low.

34. A farm gate premium continues to be an important incentive for farmers. The price for organic cocoa beans is determined as a price premium above the spot market price of mainstream cocoa, and is subject to market fluctuations. There are no official numbers on the development of the height of premium paid for organic cocoa, as this depends on who is the buyer and who is the seller, and the negotiation between these two. Organic premiums fell sharply in 2001 to USD 100–200 per tonne above conventional cocoa prices. Premiums began to recover in 2003, reaching USD 200–300 per tonne at the end of the year. However, while the average price of conventional cocoa beans in the New York market stood at US$1,580 in 2005, US$1,540 in 2006 and US$1,950 in July 2007, the average premium of organic cocoa for the same period varied between USD 500 and 1,500 per tonne above the spot market price of mainstream cocoa. This maximum of 1,500 USD was also paid in mid 2008 (table 1.2). Since then, the height of the premium drastically declined to a value of a few hundred dollars, and even to zero when there was a situation of oversupply as the organic market had come to a temporary halt (February 2009).

Table 1.2 Price premiums for organic beans (USD/tonne)

YEAR	AVERAGE 2005	AVERAGE 2006	JULY 2007	JULY 2008	JANUARY 2009
Average price New York (conventional beans)	1,580	1,540	1,950	2,910	2,585
Average price for organic beans	1,782	1,923	3,050	4,410	2,585
Average premium	202	383	1,100	1,500	0

Source: personal communication AgroEco/LBI and Tradin 2009

35. Based on experiences with organic cocoa production in Ghana (AgroEco/LBI) it is estimated that a premium of USD 200 per tonne is the minimum to sustain organic production. Economy of scale and farmers' organization are important factors. The feasibility of organic cocoa production also depends on farmers' willingness and ability to invest time and money in/on their farm; organic farming demands a business approach. At the start of an organic project, farmers should be encouraged to replant, to pool fields together; to organize viable farms. This implies the need for training and investments. Investments in organic cocoa farming require farmers' commitment to produce organic cocoa and sell it to the farmer organization of which they are a member, providing a stable trade channel for organic cocoa.

36. We would also like to emphasize that dealing with pests and diseases in an organic manner is not only a matter of making alternative inputs available. It also has to do with a change of mind-set, awareness raising and training. Organic cocoa production requires active on-farm (pest) management and postharvest practices, which require relatively more time and labour. Its farm practices are based on the more general principles of organic agriculture (Box 1.1).

Box 1.1 Organic Agriculture

Organic agriculture
*Environmentally, socially and economically sound and sustainable, an holistic approach
*Based on Natural and Local conditions, situation specific

Basic principles
*Soil, water and nature conservation
*Reduced external inputs
*Use of locally available organic materials
*Nutrient recycling- shade trees
*Diversity, natural surroundings
*Natural Pest and disease management

NO Synthetic Fertilizers, Pesticides or Herbicides

Key-issues in the organic chain
*Quality
*Traceability
*Training
*Marketing
*Trust
*Economic incentives
*Organisational capacity

Source: AgroEco, 2008

37. Two diseases are of particular concern in West Africa and a major bottleneck for cocoa production. In Cameroon, Black Pod is the main disease that affects production levels. In Togo, Cocoa Swollen Shoot Virus (CSSV) is a major problem.

Black Pod

38. In the case of Black Pod, the fungus infects seedlings, flowers, pods, shoots, leaves and roots of a cocoa tree. It can be recognized by spots, developing into brown patches which spread over the whole pod surface and turn black.

39. Control measures are removal of the pods and spraying of fungicides like copper and Ridomil. In Cameroon, biological control has been researched using and antagonistic fungi, various Trichoderma species (see table 1.3).

Swollen-shoot

40. This disease completely destroys a cocoa tree. It is recognized by swellings that develop on the roots. Affected trees look generally yellow. Pods become mottled and the content of the pod is smoother and contains fewer beans. There is no chemical control. The only way of controlling this disease is by breeding for resistance. At the same time, the same Trichoderma that is used to control black pod was found to be effective against CSSV in Brazil.

Myrids

41. The pest feeds preferably on fresh leaves. In later stages they attack less juicy parts of the plant, including the pods. They do especially well when there is insufficient shade, or when there is a flush

after a relative period of drought, or when there is succulent growth due to use of nitrogen fertilizers, or a combination of these. They are generally controlled by applications of insecticides. Populations can be monitored by pheromone traps, in Ghana a technique has been developed to control populations by pheromone mass trapping.

42. A number of organic inputs are already available on a commercial scale and tested. The next table gives an overview.

Table 1.3 Overview of organic inputs and tests results

DISEASE	DETAILS	APPLICATION	LIMITATIONS
Black Pod	Copper	Copper is applied in conventional cocoa production and is allowed for organic as well. In combination with field sanitation and/or combination treatments with bio-pesticides this would certainly have a positive effect.	In high rainfall areas the copper is washed off and yield losses are still considerable. A disadvantage is that copper is a 'heavy metal'. The use of copper is accepted but restricted in organic as it affects soil micro-organisms. This can be a problem in case of the rainfalls.
	Trichoderma	*Trichoderma:* A new technology, which has been developed in Cameroon, by IRAD in cooperation with CIRAD (both institutes are proposed as partner in the follow-up), with funding of the USDA. Field trials have been conducted within the framework of the IITA/STCP project. It is a promising technique and is ready for field application. In Cameroon the technique, which is fairly simple, is already available. In Togo, the technique is not yet available. In the follow-up proposal we will be clear on this. Our proposal will be to start the use of *Trichoderma* in Cameroon and after one year introduce this technique in Togo. The main investment in Togo is the establishment of a lab. It is part of the follow-up project to determine the commercial viability of such a technique on a regional scale.	With a combination of these techniques the effect of black pod should be less or at least equal compared to conventional farming.
CAPSID	*Botanical insecticides*	For Capsids there are botanical insecticides. The use of spot-sprays (instead of total cover) is recommended.	*Unknown*

	Pheromone	*Pheromone*: A synthetic female sex pheromone is commercially available and good for population monitoring but could also be used for mass-trapping ('bait').	With pheromone the level of control is the same as in conventional.
	Natural control	A third method is natural control through predatory ants (*ecofilia*).	This method is not popular because farmers are bitten by the ants.
	Neem	*Neem:* Neem sprays are also possible. This technology is approved by CRIG (Ghana) and applied in all organic projects in Ghana and Ivory Coast.	With neem and pheromone traps the level of control is the same as in conventional.
Swollen shoot	*Replanting resistant varieties*	Replanting with swollen shoot resistant hybrid varieties from Ghana. This goes hand in hand to combine good flavour characteristics with trees that have a stable production under managed shade.	High costs involved (also because it takes several years before new tree bears fruit).
Soil erosion	*Organic fertilizer*	Approved organic fertilizer (chicken manure)	Available in small quantities

43. Within an organic cocoa programme a tailor-made combination is sought between manual practices and application of organic inputs.

2.2 The feasibility study

44. The feasibility of organic cocoa production has been studied in two West African countries, Cameroon and Togo. This has been a participatory process, building upon existing initiatives in the field of sustainable cocoa production. The results of this study are presented in this report. The study has been funded by a Fast Track Grant of the CFC headquarters in Amsterdam.

45. To identify the best production areas, producer organizations and support activities for organic cocoa production in West Africa, value chains have been analysed in Cameroon and Togo, distinguishing conventional cocoa producing areas (where currently no chemical are used: 'organic by default'). Some comparisons are made with Ghana, where AgroEco/LBI has already experience with the production of organic cocoa. Identification of, and meeting with, key stakeholders from the public and private sectors in each country resulted in recommendations about the most promising producing areas, partnership constellations and intervention strategies.

46. Field work helped to analyse costs, bottlenecks and capacity gaps in the value chain. This involved fieldwork starting at the farm level, mapping all prices and costs, issues and bottlenecks, up to the export port.

3 Cameroon

3.1 Socio-economic conditions

47. The former French Cameroon and part of British Cameroon merged in 1961 and form the present country, which is located in Western Africa. Cameroon with its population of around 16 million is

multicultural with various ethnic groups. Its climate varies from tropical along the coast to semi-arid and hot in the North (IITA and ODECO, 2003)[1].

48. Because of its oil resources and favourable agricultural conditions, Cameroon has one of the best endowed primary commodity economies in sub-Saharan Africa. Nevertheless, the country faces numerous problems, such as a top-heavy civil service, a generally unfavorable climate for business enterprise and corruption. Just like many other countries in the region, the World Bank and IMF introduced structural adjustment programmes in the country, the latest enhanced structural adjustment agreement was signed in October 1997. Progress toward privatization of remaining state industry is expected to support economic growth (IITA and ODECO, 2003).

49. Despite being the fifth biggest oil producer in sub-Saharan Africa, the backbone of Cameroon's economy is agriculture. With agro-processing an important part of Cameroon's industry, agriculture is the livelihood basis for over 70% of the population (IITA and ODECO, 2003).

50. Within the agricultural sector cocoa is the main cash crop to more than 50% of the farming population in Cameroon. The great majority of Cameroonian farmers are small-holders, generally obtaining low yields from small plots of land using traditional methods. Cash crop production is also done by small holders; 90% of the cocoa plantations are less than three hectares (IITA and ODECO, 2003).

3.2 Local cocoa economy

51. Cocoa (Theobroma Cocoa) was first introduced in Cameroon, in 1886 and presently it is one of the main cash crops in Cameroon, most of it being grown in the humid, forested south of the country. The South West alone produces a third to half of Cameroon’s harvest. The Centre Province is Cameroon’s second main producing region. Since 1994, farmers have sold their cocoa on the international market.

52. In Cameroon around 420,000 hectares are used for growing cacao. Cocoa is Cameroon major cash crop. In 2009 cocoa accounted for 14% of the country’s total export income. Processed cocoa products such as paste and butter accounted for around 15% of cocoa export earnings. There are approximately 250,000 cocoa farms and 1.4 million people depend on cocoa for their livelihoods.

53. Cameroon is recognized as one of the main cocoa producers in Africa. Production of cocoa has gradually increased during the past years. Nowadays, the capacity of cocoa production lies at over 185,000 tonnes. This quantity position Cameroon as the fourth largest producer of cocoa in Africa and fifth in the world after Ivory Coast, Ghana, Nigeria and Indonesia. The next table (Table 1.4) gives the production trend of cocoa from 2000 till 2008 cocoa season.

Table 1.4 Production trend in cocoa beans (thousand tonnes)

YEAR	2000	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08
Quantity (1000t)	131	112	130	147	158	172	183	187

[1] IITA and ODECO. 2003. DRAFT Overview of the cocoa sector in Cameroon: findings from the stcp baseline survey conducted in 2001 IITA = international Institute of Tropical Agriculture. Sustainable Tree Crops Programme. ODECO = Organisme de Developpement, d’Etude, de Formation et de Conseil

54. One problem facing cocoa producers is that of ageing trees. Slow payment in the past, by the state run commodity buying agency, discouraged farmers from investing in replanting programs, and now up to half the plantations are more than thirty years old. The age of the farmers is another problem; most of the farmers are over 60 years old and are not ready to transfer their farms to their children. Another problem is the generally small size of the farms (average 2 hectares) and the low productivity levels (average is between 200 and 400kg/ha). There are different reasons for these low levels of productivity. There are many farms that use little or no input. Inputs are expensive and farmer extension services are underdeveloped. Another problem is the lack of organizational and management skills amongst farmer groups (which is related to the collapse of farmer cooperatives in the 1990s).

55. Liberalization of the cocoa sector is partly responsible for the current problems of the sector. Until the 1990s, the cocoa sector has been controlled by the *Office National de Commercialisation de Produits de Base* (ONCPB). It was a structure set up by the government to organise the trade and finance the sector. Prices and marketing margins were fixed by the state through ONCPB which was the heart of the cocoa sector performing the role of stabilizer and manager. Farmers had a specialised role which was to deliver their products to local collecting points which were to transfer it to provincial collecting points. There the pre-control was done by ONCPB and the farmers were paid according to the quality of their products. The pre-controlled cocoa was transported to the storage facilities of the ONCPB where it was re-packed, before being exported to the international buyers.

56. In the 1990s reforms were introduced rapidly in the country, which had an effect on prices, quality, and costs of inputs and on the overall organization of the chain, including its institutional environment. The reforms removed restrictions on who could engage in cocoa trading, which caused a large number of new (foreign) traders and middlemen to enter the field. These newcomers were often inexperienced and bought any cocoa, regardless of its quality. The absence of local funds to strengthen the domestic buyers has resulted in the total take over by international traders of the domestic buyers. The number of licensed exporters increased rapidly (from around 60 to over 300) but the criteria for licensing were rarely adhered to. In 1997 the situation became more stable. The number of active exporters had declined to around fifty, although the ten largest companies accounted for over 70 per cent of total export of cocoa beans. At that time, four of the five largest exporters were foreign owned.

57. Officially, the prices are still annually fixed by the NCCB, but these prices are hardly respected by the buyers. The result is that prices vary over time (being subjected to price fluctuations on the world market) and even across the country. Recently the situation has somewhat improved. Farmers have been able to improve their bargaining position, as they have better access to information on the official NCCB price.

58. As part of the last phase of the reforms some public reinvestments took place in information systems. Furthermore, the state restructured its extension services and started to provide unified extension. In Cameroon credit facilities generally diminished, and while well-developed arrangements for the export sector existed, there were only few credit facilities for the farmers, which made it hard to pay for the higher costs of production. These high production costs were a direct result of the removal of subsidies on inputs.

59. In response to these developments, global buyers, mainly through public-private partnerships, became involved in the provision of extension services, setting-up information systems and the strengthening of farmer organizations. The Sustainable Tree Crop Programme (STCP) was involved in developing a production information system to establish information essential for developing business plans at the farm level, to build capacity of farmer organizations and to develop targeted extension approaches such as Farmer Field Schools and integrated pest management (IPM). Also the STCP aimed

at setting up an information system to track production practices and product attributes for marketing and/or environmental purposes (Gockowski, 2000)[2]. In 2006 the 'UPCOCOA project[3] came into existence. This multi-stakeholder initiative is a four-year project which focuses on upgrading the capacities of cocoa farmers and their organizations. Recently, the project has come to an end.

3.3 Local governance and development management

60. Despite the reforms, in Cameroon cocoa is still high on the political agenda. For the Cameroonian government the cocoa production sector remains the best means of managing and protecting forests, land, water and all other issues of biodiversity as a means to promote sustainable development and combat rural poverty and hunger. Solutions that the governments seeks are in the field of: increasing capacity building within cocoa-producing communities, build infrastructure, provide government support for effective production, provide loans for infrastructure development for farm-to-market roads and farm-to-farm roads. Also, they acknowledge that support is needed for capital loans to purchase inputs like spraying machines, fungicides, transportation vehicles (trucks), and build warehouses to preserve dried cocoa.

61. Therefore the government aims at:

- Improvement of the logistics, from primary production to shipping;
- Product quality and land productivity improvements;
- Implementation of economically, socially and environmentally sustainable production methods.

62. This has given impetus for a cocoa rehabilitation project, implemented by the Ministry of Agriculture and Rural Development. This project seeks to:

- Maintain cocoa producer incentives at appropriate levels;
- Increase the efficiency and effectiveness of the public enterprise *Societé de Développement du Cacao* (SODECAO) and increase planting, pest control, research and road programs;
- Review and improve the operations of cocoa marketing cooperatives and supporting agencies;
- Launch a private medium-size plantation development program;
- Strengthen the Ministry of Agriculture and Rural Development's capability for implementing the cocoa development strategy incorporated into this project and monitoring its extension.

63. The objective of the government is to double the cocoa production from over 185,000 tonnes at present to 280,000 tonnes by 2015. To accomplish that, special attention will be put on the creation of new plantations. For the moment, 40% (ca 140,000 ha) of the cocoa plantations are very old and must be renewed or regenerated. The actual strategy is to assist farmers and follow them for the implementation of good agricultural practices that will help boost the production yield from 0.4 tonne per ha now to 0.7 tonne by 2010, to 1 tonne in 2015. Concerning areas to be regenerated and/or to be created, good planting material must be used that will help to increase the production yield from 1 to 1.2 tonnes per

[2] http://www.treecrops.org/country/cacaoproduction.asp

[3] http://www.iscom.nl/upcocoa/ Access date 13 February 2008.

hectare in long term period. The strategy is then to support the creation of 5000 ha per year in ten years period. This strategy will benefit the young and the economic operators of the cocoa sector.

64. Institutions in charge of follow-up are the National Cocoa and Coffee Board (NCCB) and the cocoa and Coffee Interprofessional Board (CICC). The Cocoa Development Company (SODECAO) is another important institution involved.

3.4 Natural environment

65. While the government of Cameroon has repeatedly campaigned for self-sufficiency in food, until 1987 the only significant state involvement in agriculture focused on commercial crops, with cocoa as its main cash crop. Other cash crops grown in the south of the country include oil palm and rubber. In the North cotton is an important cash crop. Coffee is grown in all provinces, except for the North. The Regions of South West, Centre, South and Littoral are the most important cocoa producing zones of the country. The altitude of this area varies between 300 m and 750 m. The mean annual temperature ranges between 24 and 26 °C with a mean annual rainfall of 2000 mm. In part of the South West and Mungo Division of the Littoral, the soils are volcanic in nature. Because of the soil fertility the West has been traditionally the most densely populated part of the country. This pressure of population is unfortunately leading to significant soil erosion. The soils in the South and Centre Regions are Oxisols and Ultisols, which constitute 80% of the soils in the humid forest zones of Cameroon with pH values varying from 4.3 to 5.4. High rainfall and relatively high humidity offer very favourable conditions for the development of Black Pod Disease, caused by *Phytophtora megakarya*, which is the main pathological constraint to organic cocoa farming in the country.

66. The majority of the farmers interviewed in Cameroon in 2008-09 identified the Black Pod as the predominant disease of cocoa pods. The spores that grow on the infested pods are mainly spread by wind. According to the farmers, Black Pod decreased their yields by 30%, and can cause total yield losses in the wet season. Removing the infested pods from the fields is a first measure to reduce yield losses.

67. Myrids are perceived as another important threat to cocoa production. It is perceived as the most important insect pest within cocoa farms causing 70 % of the damages. Although, actual yield losses due to this pest are estimated considerably lower (rarely above 10%), this perception encourages farmers to use chemicals to spray their farm. This makes it even more urgent to invest in training and awareness raising and to make alternative approaches to control both diseases and pests more widely known and alternative inputs more widely accessible.

Picture 3.1 Package of chemicals in cocoa farm

68. The table below gives an idea on how farmers are trying to control pests and diseases[4]. This information is based on the farmer survey held within the South West Province of Cameroon.

Table 1.5 Control methods of farmers

TYPE OF PEST/DISEASE	DESCRIPTION OF DAMAGES CAUSED	SOME CONTROL METHODS PRACTICED IN THE SOUTH WEST PROVINCE(S.W.P)
1. Capsids	These insects prick young pods and small branches and suck out plant sap While pricking they secrete hytotoxic saliva that causes dark necrotic sports, which: Cause drying of young pods as well as death of twigs Open an inlet to secondary parasites especial microscopic fungus (colonectria rigidiscula) that causes leading to the death of the branches and even the whole tree	Cultural Practices Pruning Clearing Controlling shade Chemical treatment Most farmers use broad base insecticide e.g. Thiodan 35EC, Actara, Calisulfan from December to February
2. Black Pod	Caused by the fungus phytophtora Palmirora Recognized by the appearance of brown spots on attacked pods The sport spread to cover the whole pod which eventually becomes black Cause great loss of yields in Cameroon	Cultural Practices Proper maintenance of plantation Regular clearing Controlling shade Pruning Sanitary harvest (Jan- March all other and dried pods from

[4] Mineral fertilizer application in cocoa plantations is inexistent, in the small and medium scale farms. However, there is a progressive use of abandoned cocoa pods as organic manure, even though they are not sufficiently recycled. There is a gradual introduction/use of mineral fertilizer application in some large scale farms.

		previous harvest Chemical treatment. Some farmers use: Caocobre (copper hydroxide derivative) Kocide 101(copper hydroxide) Nordox(copper hydroxide) Ridomil plus (copper metalaxyl)
3. Root rot disease Forms *lignosis* (commonly called brown spots as a result of the characteristic brown coloration of the inner wood, at collar level). *Armillaria Mella* Forms white sheets of mycelium between the back and the inner wood, at the collar level. If these sheets are numerous, the bark cracks hence the common name' collar crack' given to disease	- The fungi perpetrates in a lateral root, to progress its growth towards the collar, then moves down inside the tap root and up inside the stem -Cause rapid yellowing of leaves due to the hindrance of sap circulation from root to leaves -Root and stem are decomposed slowly until the tree loses completely it stability and cracks	-As at now farmers do not yet know any effective control measure. They have tried chemical treatment to no avail -Extension services are advocating for proper choice of farmland, Eliminate all primary and secondary hosts
4. Mealy bug (Plant pouse)	-They are small insects mostly seen on leaf or pod pestioles -Their damage is not very important but it is alleged that they are transmitters of other diseases e.g. swollen shoot	Farmers use broad based insecticide e.g. Thiodan 15Ec, Dursban, Action
5. Psyllids (jumping plant lice)	-Small insects whose multiplication is in direct line with the vegetative growth of the tree twigs -Easily recognized by the waxy cotton like substance that the larva secretes -Damage young twigs and terminal buds particularly	Farmers use broad based insecticide e.g. Thiodan 1.5Ec, Dursban, Action, Actara
6 .Stem borers (Larva of beetles)	-The are long antenna insects -Adult female bores a circular opening at the apical (upper) part of stems or branches in which she lays a single egg -When the egg hatches, the larva feed for about 10days on the dead part of the stem or branch above the opening -It latter reaches the living parts where it bores a gallery downwards -Plant latter dries up and dies	-Farmers use broad based insecticide e.g. thiodan 15Ec, Dursban, Action, Sevin,Actara -But do not always have satisfactory results
7.Defoliating Caterpillar	-They devour the foliage of cocoa trees. The butterfly itself is not harmful to cocoa	-Farmers use broad based insecticide e.g. thiodan 15Ec, Dursban, Action, Sevin, Actara, Calisulfan

69. Heavy use of chemicals can cause disease resistance, negative effects on beneficial micro-organisms, and are harmful for humans and the environment. But, awareness raising does not only need to take place at the level of the farmers. There is a serious lack of awareness and knowledge on the benefits of organic cocoa production and on the requirements of organically certified production. All interviewed stakeholders in Cameroon express the view that many farmers are already organic. While, at best they are 'organic by default'. Awareness has to be raised that the production of high quality organic cocoa is a time consuming process that requires transfer of know how and building up capacities if the product is to be satisfactory. This means good farm management and a higher input of labour.

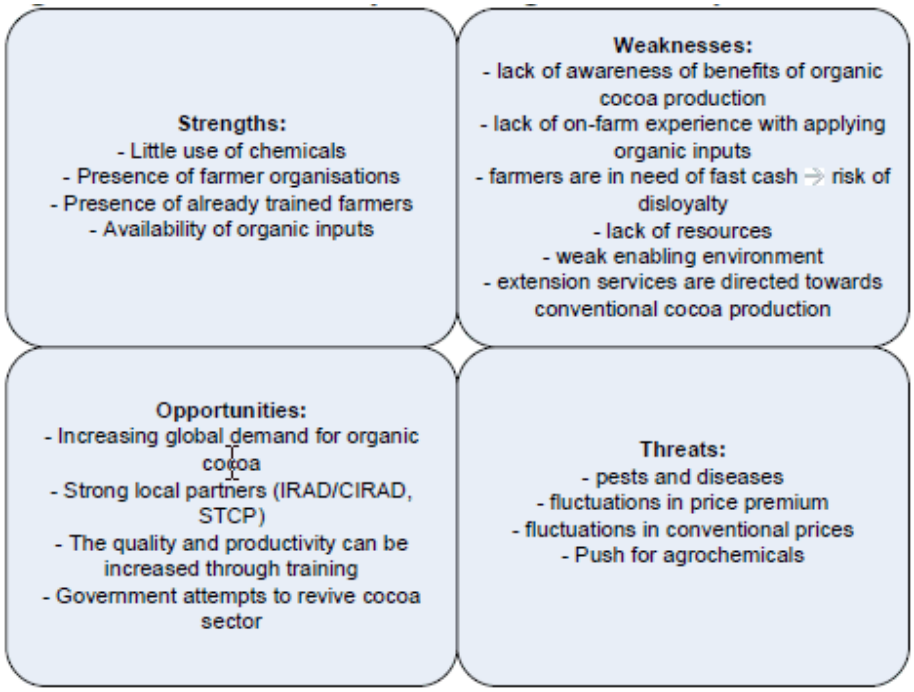
3.5 SWOT analysis as basis for selection of producing areas and producer organizations

70. In order to select producing areas and producer organizations in Cameroon for organic cocoa production one has to understand the strengths, weaknesses, opportunities and threats for organic cocoa production in the country. This SWOT analysis partly reflects developments on the world market and partly it reflects the current status of cocoa production in Cameroon.

71. Developments on the world market that are favourable for organic cocoa production are for example the increasing demand for organic cocoa, the availability of organic inputs that can combat pests and diseases, the local presence of strong public-private partnerships (such as STCP) and international research institutes (such as CIRAD/IRAD). Global threats are price fluctuations that tend to go hand in-hand with fluctuations in premium prices. Another threat is a push for the use of agrochemicals, in order to increase productivity levels. Also a concern is the lack of experience with on-farm application of alternative (organic) inputs.

72. Cameroon's strength is that generally little use is made of chemicals. But, at the same time cocoa production is threatened by pests and diseases. Many farmers would like to spray their farm if they would have the necessary resources available. Alternative (organic) inputs are available but not yet at farm-level. Farmers also lack awareness on organic production methods and how these can benefit them. A potential strength within Cameroon is that there are already many farmer groups operational, but many of them are still weak. A positive development is that an increasing number of farmers are receiving training as part of their involvement in programmes resulting from public-private partnerships (such as STCP and UPCOCOA). In addition, within Cameroon there are quite some opportunities to increase levels of productivity and the quality of the produce through training. The government is also anticipating on this option in its strategy to revive cocoa production in Cameroon. What is lacking for farmers is cash and prompt payment, which obstructs on-farm investments and discourages farmers' loyalty to sell to their farmer groups. In Cameroon there are also some other constraints to cocoa production, including technical, socioeconomic and institutional factors. Obstacles are poor knowledge on farm practices, poor extension services, poor cocoa quality, fluctuation in prices, access to market, etc.

Figure 1.1 A SWOT analysis for organic cocoa production in Cameroon



Source: Composed by author

73. This SWOT analysis provides the basis for the selection of producing regions and producer organizations. In assessing the regions and farmer groups the following criteria are important:

Regions:

- Cocoa production
- Favourable climatic conditions for organic cocoa production
- Little use of chemicals
- Presence of strong partners

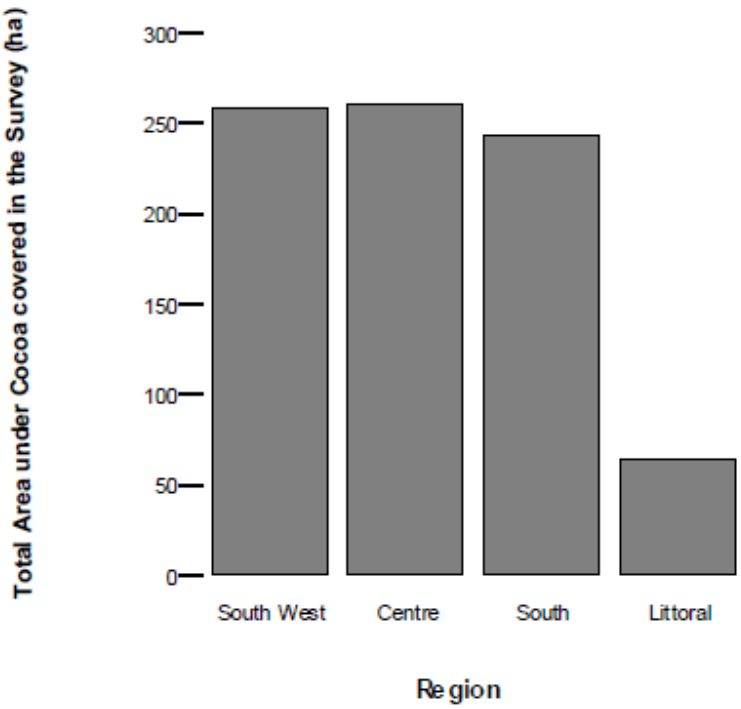
Groups:

- Organized and trained farmers
- Established links with partners

3.5.1 Selection of cocoa producing regions and producer organizations

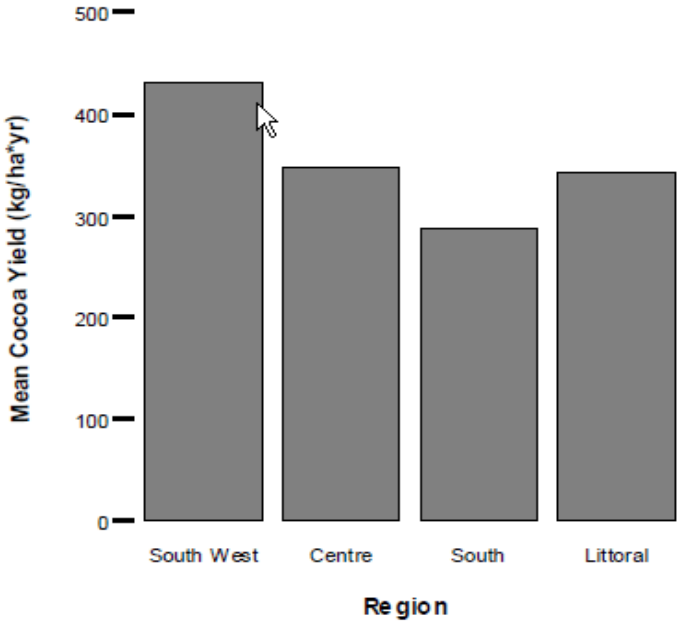
74. The main areas of production are the South West producing almost 40% of cocoa in Cameroon, followed by the Centre with 30%, South 18%; East and Littoral share the rest 12%. In order to get insight in the differences between the cocoa growing regions, a total of 340 cocoa farmers were interviewed in the 4 regions (excluding the Eastern region), including 12 Divisions and 28 farmers' associations, unions, common initiative groups (CIG) and farmers' organisations. A sample of 10 to 20 farmers per organisation was interviewed. The total area of cocoa production that is covered by the survey is illustrated in the next figure.

Figure 1.2 Total area of cultivated surface (ha) in the four regions of the study.



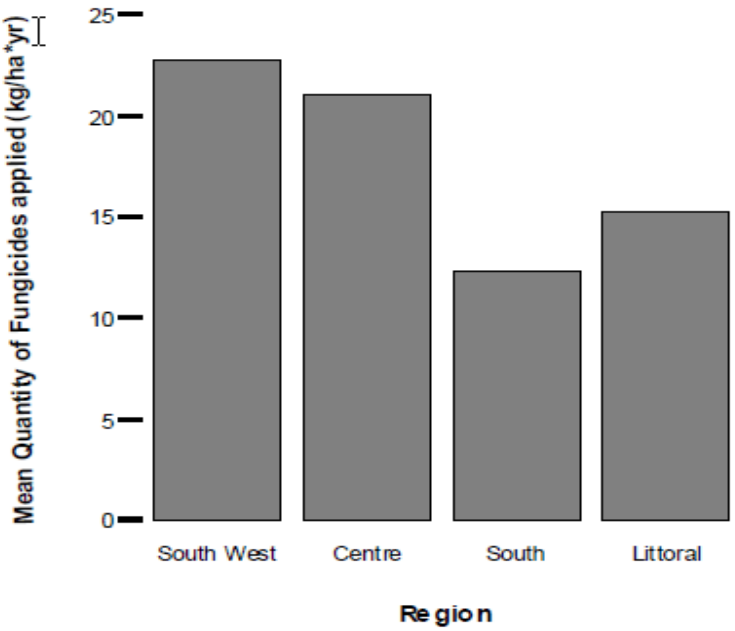
75. The South West has the highest output averaging more than 425 kg per ha (Figure 1.3). It is the most important region of production, accounting for more than half of the country's output. In the Centre, the average surface area is 2.5 ha with yields averaging 360 kg per hectare. In the South region, the areas cultivated are small with an average size of 2.3 hectares per farm and in this region the yields are low oscillating between 200 and 300 kg per hectare. The Littoral region has the least surface area and the average yield is 350 kg per hectare. This can be explained by the fact that cocoa culture is relatively recently introduced in this region.

Figure 1.3 Mean cocoa yields (kg/ha*yr) in the four regions



76. The use of chemicals to combat pests and diseases differs per region. For example the use of fungicide to combat Black Pod is highest in South West (the mean average fungicide applied in the region is 22.5 kg/ha/yr) and lowest in the South (Figure 1.4).

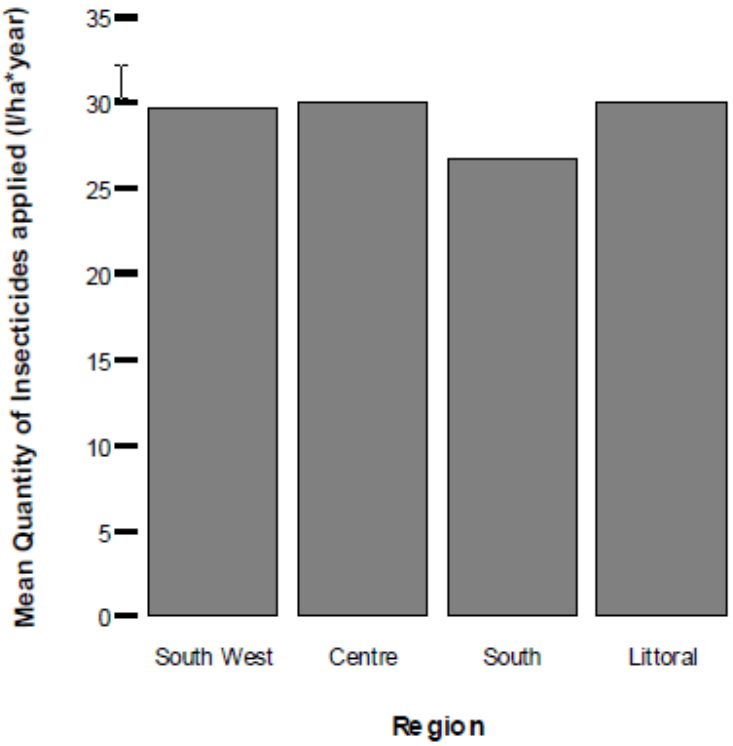
Figure 1.4 Mean quantity of fungicides used (kg/ha*yr) in the different regions



77. Due to a price increase for chemicals, which was a result of the process of liberalization, in Cameroon the application of fungicides to control black pod decreased. Since the reforms also the availability of fungicides decreased. This has stimulated farmers to become involved in new methods of pest management (such as Integrated Pest Management), where fungicides are mixed with plant extracts.

78. The mean quantity of use of insecticides is more or less the same for the different regions (Figure 1.5). For individual farmers the use of pesticides is rather difficult. Because insects move to untreated plots, insecticides have to be applied over a wider area in order to be effective. In order to realize this, group of farmers organize and form a spray gang that treats all farms in an area or village at the same time.

Figure 1.5 Mean quantity of insecticide used (l/ha*yr) in the different regions



79. An outcome of the survey is that the use of fungicides and pesticides varies among villages within the same province. For example in the South West the mean quantity of application with insecticides is 29.5 l/ha/yr. Within the South West the villages Konye and Mamfe are identified as zones of less pesticide application; 90% of the interviewed farmers attributed the lower use of pesticides due to the effect of training from Farmers' Field School (FFS). Respondents in Konye were all members of the cooperative KONAFCOOP, which is in the process of obtaining Fair-trade certification. In Mamfe, interviewed farmers were members of a cooperative called MACEFCOOP, which is involved in fair trade cocoa production. Members of MACECOOP have also learned some organic practices from organic coffee farmers in the locality.

80. The Centre region applied 22 kg/ha/yr of fungicides and 30 l/ha/yr of insecticides. Within the Centre Region there is high application of fungicides and pesticides in the villages of Metet, Mengang, Akoemen, Nfou. The majority of the farmers in Ngumou, Ngomezap, Ayos and Okola however declared that they use little pesticides to treat their farms. Approximately 10 % stated they use no pesticides at all to treat their farm. They attribute the reduced use of pesticide to the fact that they have benefited from training acquired from FFS; FFS exist in almost all the surveyed cooperatives in the Centre region but the impact varied between cooperatives.

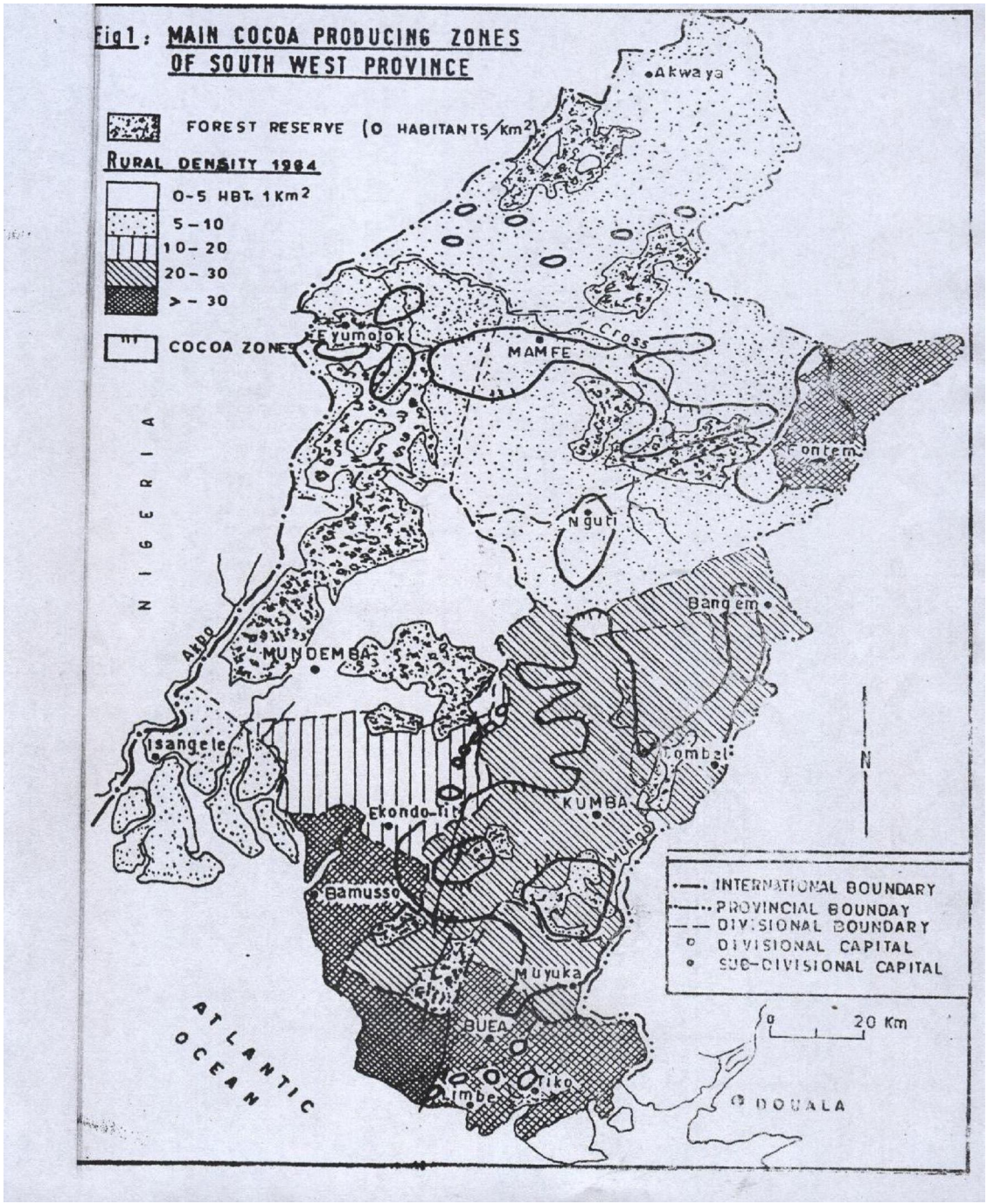
81. There is generally minimum use of pesticides in the South: 23 kg/ha/yr of fungicides and 27 l/ha/yr of insecticides were recorded. About 60 % of farmers in the South region in the villages of Biyeyem-Ebolowa, Akie-Mvengue, Sangmelima and Ebolowa explained that they mix plant extract with insecticides and fungicides to treat their farms. This practice was common after the cocoa crisis, but today most farmers rely on pesticide use. The farmers who mix pesticides with plant extracts consider this practise to increase the effectiveness of the pesticides and improve yields at low cost. According to them, the reduce use of fungicide in the region is linked to the climatic conditions of the area that make the plants less susceptible to the black pod disease. The farmers state that they lack the means for

chemicals. Especially lack of liquidities to purchase agrochemicals and limited access to the market are considered as major obstacles to obtain pesticides.

82. In the Littoral, there is mass use of pesticides, derived from the influence of a Parastatal company located in this region.

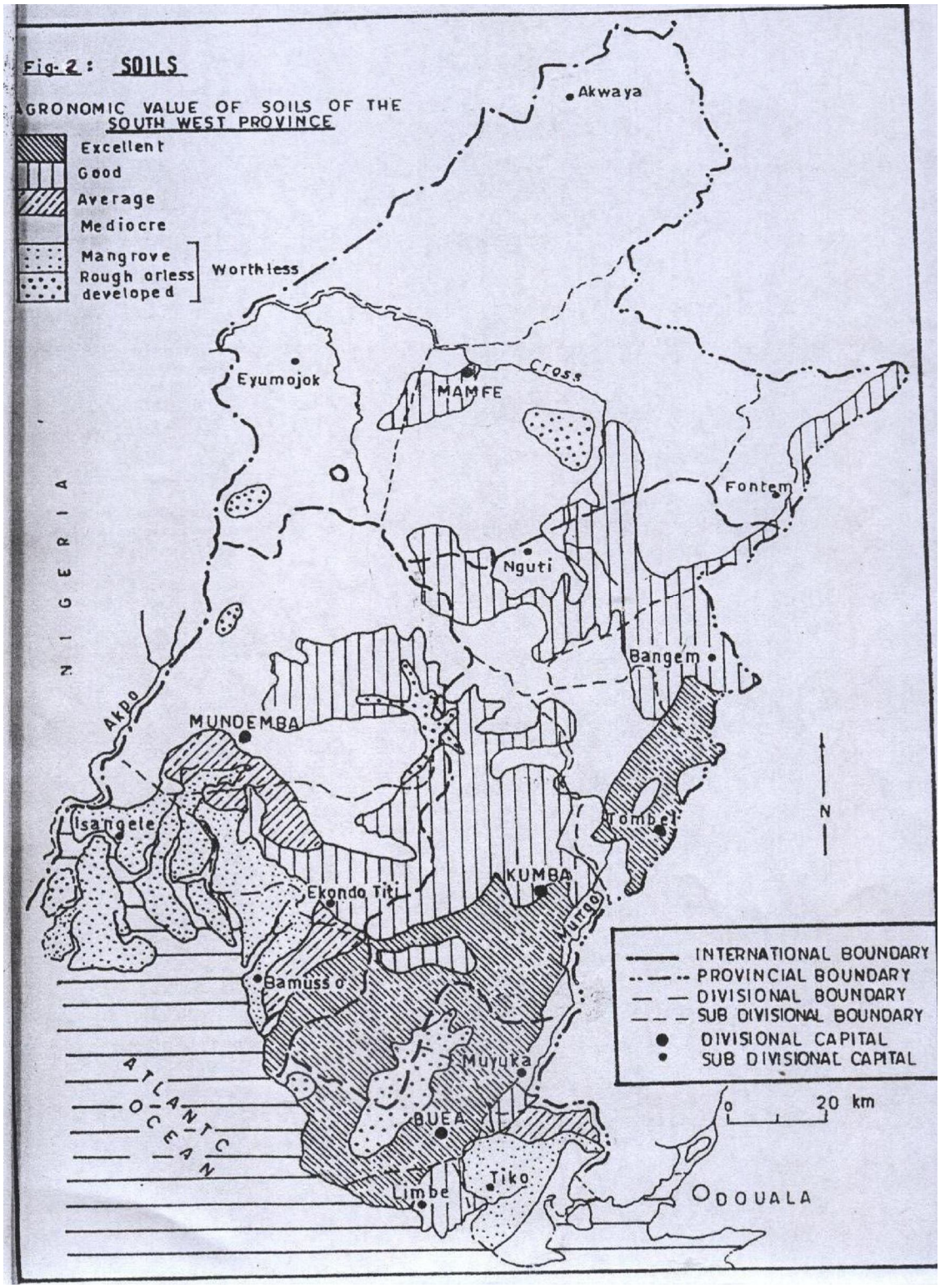
83. One of the outcomes of the study was that the region of the South West holds the greatest production potential. This region is characterised by a strong dynamic of cocoa farming, of relatively young cocoa farmers (average age of 35 years among respondents!). Cocoa cultivation in some localities of this region corresponds to a semi-intensive farming system. The average size of a cocoa plot in the South West amounts to 3 ha. The main cocoa producing zones of this province are captured in the next map.

Map 1.1 Main cocoa producing zones in the South West province



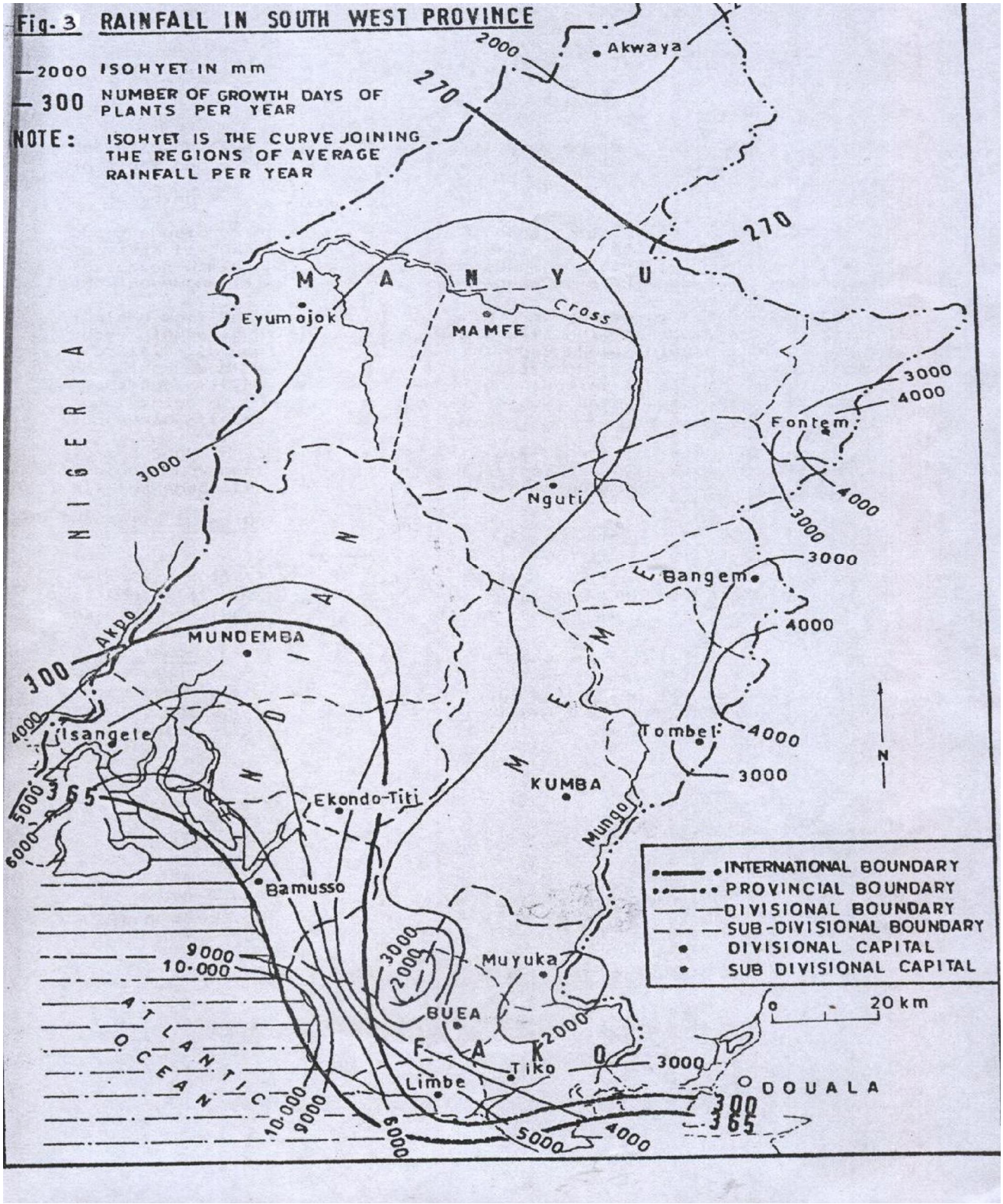
84. The agronomic value of soils of this province varies (map 1.2). In the selection of production sites that are potentially of interest to the farmers, it is important to take the existing differences within a specific province in to account.

Map 1.2 Agronomic values of soils of the South West Province



85. The next map (1.3) shows the variation in levels of rainfall within the South West Province. As we have argued earlier high levels of rainfall together with high humidity create favourable conditions for the development of the Black Pod Disease.

Map 1.3 Levels of rainfall within South West



86. Based on the maps of the South West province (drawn by local AgroEco consultants in 2009), where cocoa production is concentrated, the following areas could be recommended for organic production:

- Tombel-Ngusi Area
- Mamfe-Upperbayang area
- Nguti – Manyemen-Babubock area
- Muyuka – Muyenge area
- Mbonge area
- Western Bakossi area
- Kumba-Matoh area

87. But, whether or not specific sites are more favourable for organic cocoa production does not only depend on the natural environment and current production methods but also on whether or not farmers are organized and have already received some kind of training. In the South West a number of potentially interesting producer organizations were identified.

Table 1.6 Uncertified producer organizations in the South West

AREA	DIVISION	NAME OF CO-OPERATIVE	HEADQUARTERS
Tombel-Ngusi	Kupe-Muanenguba	1.Tombel Area farmers Cooperatives Society	Tombel
		2.Central Bakossi Area Farmers co-operative	Ngomboku
Nguti-Manyemen-Babubock Area	Kupe-Muanenguba	1.Nguti farmers co-operative Society	Nguti
		2.Ekenge farmers co-operative	Ekenge
		3.Babubock Area farmers cooperative	Babubock
Western Bakossi area	Kupe-Muanenguba	1.Western B cooperative	Mekom
Mamfe-upperbayang area	Manyu Division	1.Boh-Abbeytakor Area farmers co-operative	Eyangatemako
		2.Upperbayang co-operative	Tinto
Mbonge Area	Meme Division	1.Mbonge area farmers cooperative	Mbonge
		2.Bai area farmers cooperative	Bai-panya
		3.Ekombe Bongi area farmers society	Ekombe Bongi
		4.United farmers co-operative	Kombone Mission
Kumba-Matoh	Meme Division	1.Matoh area	Matoh

area		farmers society	
		2.Kossala farmers organization	Kossala
		3.Eagle co-operative society	Kumba
		4.Motaka area farmers cooperative	Kurume bafaw
Muyuka-Muyenge area	Fako Division	1.Muyenge farmers cooperative society	Muyenge
		2.Bafia farmers co-operative society	Bafia
		3. Muyenge area farmers cooperative society	Muyenge
		4.Ikata farmers co-operative	Ikata
		5.Owe farmers co-operative	Owe

88. There are also a small number of already certified producer organizations (Fair Trade). Hence, there is the possibility of capitalizing on their experiences. These co-operatives are:

- Konye Area farmers co-operative.
- Mamfe Central farmers co-operative
- Chedemuafcoop

89. In the other provinces, there also potential farmer groups that could convert form conventional to organic cocoa production. After the first stakeholder meeting in October 2008, it was decided to visit cooperatives in three provinces of the country: Littoral, South west and the Centre. Although the South region appears to have more potential to easily and quickly adapt to organic cocoa production (as it registered the least mean quantity of both fungicides and insecticides used), we decided not to include the South. In the South, rainfall is highest. Farmers in this region hardly make use of pesticide spraying as wash-off is a large contributing factor for its decreased efficiency. This could also explain the lower use of inputs in this region.

90. In total a number of 13 cooperatives were selected, of which three have been pre-selected coming from the South West and from the Centre regions:

- Konye Area Farmers Cooperative Society (KONAFCOOP) in the South West
- Société Cooperative d'agriculteur de la Mefou et Akono (SOCAMAC) in the Centre Region
- Société Cooperative des Exploitants Agricole (GROUPEX SC) in the Centre Region

91. The selection is based on various criteria, which came up as relevant during the first stakeholder meeting held in 2008:

- Cocoa production
- Application of pesticides
- Training
- Climatic conditions
- Logistics and infrastructure
- Presence of strong partners

92. The conditions for organic cocoa production in the selected regions are positive. The conditions for procuring high-quality organically certified cocoa from both regions are good. The soils are fertile, the farmers are well organised, conscious and motivated, the cooperatives are business oriented and well informed about the market prices; and they have long experience in growing cocoa. Another positive feature is the presence of strong partner organisations, who are involved in organizing and the training of farmers.

93. Farmers in SOCAMAC and GROUPEX SC have been trained by UPCOCOA which focused on upgrading the capacities of its members. The project aimed at tackling problems on all levels in the cooperatives like marketing, institutional capacities, quality management and social issues in order to benefit the interest of it members. KONAFCOOP also have a strongly business oriented focus with well organized and dynamic members. The cooperatives are all business oriented and seem to function relatively well. The average age of the farmers is around 40. The cooperatives all have short lines towards the exporters. Some are capable of exporting themselves.

> *One old farmer (Diodoné Zama) aged 64 years old, who is a member of GROUPEX SC cooperative, said he has been cultivating cocoa for over 40 years on a 2 hectare farm land. After the cocoa crisis of the 1990s he neglected his farm and his yield was below 500kgs with pesticides cost being as high as 90.7 €/ha*yr. With his participation in the FFS he could realise yields of 650kg in 2007 and 625kg in 2008 with reduction of pesticide cost at 43 €/ha*yr. He explained that this additional money increased his family income and will be used to sustain his household.*

94. The selected production areas have used little chemical inputs in the cocoa in the past. In cases where no chemicals were used, the conversion to organic cocoa can take place within a year. In other areas, however, we have seen the indications of chemical input use, in that case the conversion to organic cocoa can take up to three years. This period can be used for focusing on improving the quality of the cocoa and quality premiums can be fetched on the market.

95. The warehouses identified in these cooperative areas are suitable for temporary storage of cocoa. The stores are well aerated though they need to be adapted to suit the standards of an organic cocoa store with netting and insect (pheromone) traps to control cocoa moth. All three cooperative offices are equipped with basic office equipment for the administration. The cooperatives in the Centre region are well served with paved roads for evacuation of cocoa from the farms. The road linking Kumba to Konye is an earth road which poses some transportation difficulties during the rainy season.

Box 1.2 Institutional embedding of organic cocoa production

Based on these visits, interviews, the field survey and outputs from the stakeholders meetings it was decided that the best way forward is to work in close cooperation with the STCP program. Starting up and organising farmers for organic cocoa farming means a high level of organisation of the producer groups. Therefore it is recommended to establish close partnerships with partners that are locally present. Currently, there are two organisations that have expressed their interest to become involved in a follow-up: the STCP and IRAD/CIRAD.

The STCP has successfully organised and trained a number of farmers in Farmer Field Schools (FFSs). These trainings have been positively evaluated. As a way of diversifying business opportunities for farmers the STCP is interested in inserting an organic training module in their programs. Farmers that belong to the visited cooperatives and that participate in these schools hardly use pesticides and fungicides on their farms.

SOCAMAC and KONAFCOOP are privileged to be like experimental fields for experts from IRAD. Most cocoa experimentation is conducted in these areas and that is why farmers can benefit from the effect of experimentation. A classic example is the research work of Dr. Kuaté Jean, a researcher working on IPM measures of controlling black pod diseases in Ngumou area. More so, a team of researchers at IRAD is working on biological methods of controlling *Phytophtora*. The implementation phase of the findings of these researchers can go hand in hand with the development of organic cocoa production in the country. IRAD/CIRAD has expressed it interest to participate in a follow-up proposal (a proposal for follow up is attached to this document).

96. In a multi-stakeholder meeting in Cameroon, we discussed the advantages and disadvantages of the different areas. Of course, the incidence of pests and diseases was an important factor that we have taken into account. Here we did not only look at regional figures but also at the application of fungicides and pesticides by the involved cooperatives. For all three involved cooperatives, it was indicated that their farmers use very little or no pesticides, and have already benefited from training (Farmer Field Schools and Institute of Agricultural Research for Development (IRAD)). In addition, the farmers in this region were generally better organized. The choice for the Centre region was based on its favourable climate, but also because the population of farmers in this region is generally young. Less rainfall in this region is not only favourable for low black pod disease incidence but also for adequate drying of the cocoa. An additional reason for the choice of these different sites is that on these sites cocoa is under differential parasitic pressure, which makes it possible to evaluate the possibilities for organic cocoa under different conditions. The choice for these locations is also based on the fact that STCP/UPCOCOA is active in these areas. It is found important to further build on good work already done by these organisations. The next table (Table 1.7) summarized the profile of the different selected cooperatives.

Table 1.7 Profile of selected cooperatives

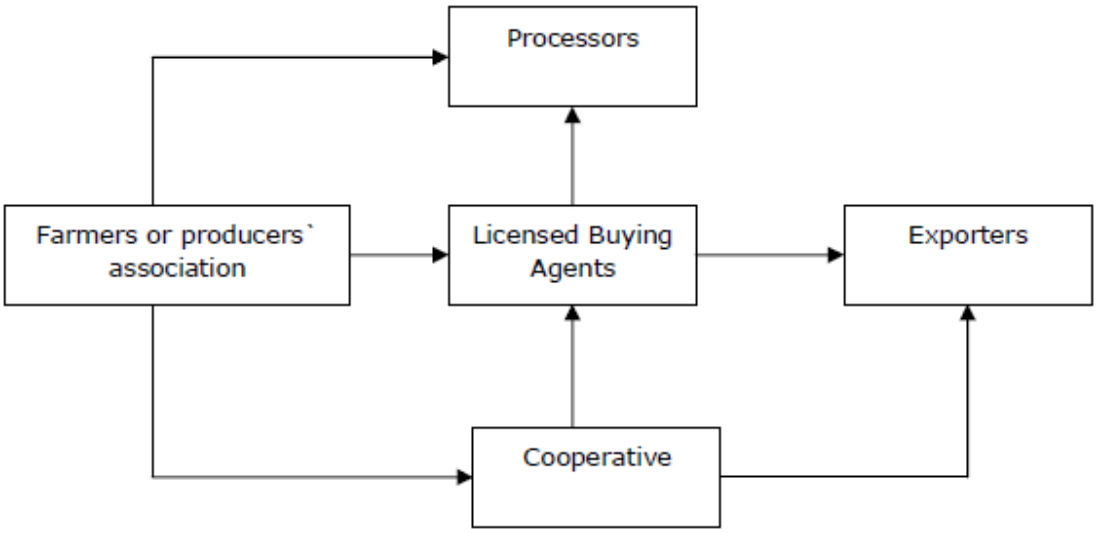
CRITERIA	KONAFCOOP	SOCAMAC	GROUPEX
Cocoa production	500 tonnes (169 members)	100 tonnes (235 members)	135 (348 members)
Application of pesticides	Little/no pesticides	Little/no pesticides	Little/no pesticides
Training	Farmer Field Schools	Farmer Field Schools	Farmer Field Schools
Climatic conditions	Less favourable (high rainfalls)	Favourable	Favourable
Logistics and infrastructure	Well-equipped office, but dirty roads	Well-equipped office, paved roads	Well-equipped office, paved roads
Presence of strong partners	STCP	STCP/UPCOCOA	IRAD/CIRAD

3.6 A value chain analysis

3.6.1The cocoa value chain

97. The value chain of conventional cocoa is visualized in Figure 1.6. The different chain actors are discussed briefly below.

Figure 1.6 The cocoa chain in Cameroon



Cocoa farmers

98. In Cameroon there exist three major categories of cocoa farmers:

- *The Small Holders*: They posses less than 5 ha of cocoa land. This group constitutes about 65% of the sub sector. Here there is a relatively low level of investment and intensity of production.

- *The Medium Size Farmers/farms*: They posses between 5 ha to 15 ha of cocoa land. This group constitutes about 30% of the sub sector. There is s slight increase in the level of investment and intensity of production as compared to the small holders.

- *Large Sale Farmers/Farms*: They posses above 15 ha of cocoa plantation. This group constitutes about 5% of the sub sector. There is a high level of investment and a relatively high intensity of production.

99. On average the size of the farms of the farmers that were interviewed is 3 hectares. These farmers are generally young people. For example, in IKILIFCOOP, near Kumbe in the South West region, the average age if its members was 35 years. Young people have become interested in cocoa farming because of the good earnings over the last years. This even enabled them to generate income that they can invest in other business, for example moto-taxis, providing them an income in non-harvest period.

100. In principle farmers sell their cocoa beans to the producer organization of which they are a member.

Producer organizations

101. Producer organizations (or cooperative societies) buy the cocoa from the farmers and store the cocoa on a village level. They are responsible for transporting this cocoa to central depots and the harbour, from where it is being exported. Farmer cooperatives that fall under the UPCOCOA project sell their cocoa to an umbrella organisation which has a direct trading relation with the multinational trader and processor ADM. Farmer organisations that do not fall under this platform sell to middlemen or directly to exporters.

Middlemen and exporters

102. In Cameroon two main buyers are distinguished: The Licensed Buying Agents (LBA) and Co-operative societies:

a) The LBAs buy their cocoa directly from the farmers and the farmers' organizations and sell to the exporters. Between the LBA and the producers, there exist middlemen who have the responsibility of buying and collecting the goods to the main centre (LBA). The middlemen are scale buyers who have cocoa stores in cocoa producing communities. These scale buyers mostly use the strategy of advanced payment, where they pay the farmers in advance to secure the cocoa. In most of the cases, the exporter provides the finance to the middlemen.

b) The Co-operative Societies: Co-operative societies are made up of organised groups of farmer. The co-operative collect the produce of its members and at times buy cocoa from non-members and sells to exporters. These co-operatives usually work in accordance with the law on co-operatives and common initiative groups of 1992.

Table 1.8 Major export companies and percentage of quantity exported in 2008.

EXPORTERS	MARKET SHARES (%)
1. TELECAR COCOA LTD	33.59
2. CAMACO	12.57
3. OLAM	12.30
4. GIC ROBA	9.51
5. Ets NDONGO ESSOMBA	7.76
6. NYAMEDJO	5.86
7. OTHER	18.41

Processors

103. Processors are involved in processing cocoa beans to cocoa powder and manufacture chocolate for Cameroon and neighbouring countries. The only processing unit in the country is *Societé Industrielle Camerounaise de Cacaos* SA (SIC Cacaos), 70 % of it share is owned by the multinational Barry Callebaut. Other multinationals that are operational within Cameroon are listed in Table 1.9.

Table 1.9 Multinational companies

MULTINATIONALS	BRIEF DESCRIPTION
Archer Daniel Midland (ADM)	A US-Dutch firm with office in Douala. Deals with semi-finished and finished products
Barry Callebaut	A Belgian-Swiss based firm with headquarters in Douala Deals with semi-finished and finished products
CARGILL	A US based firm with office in Douala Deals with semi-finished products
CONTINEE	Greece based firm with office in Douala Deals with semi-finished products
OLAM CAM	Singapore based firm with office in Douala Deals with semi-finished products

104. The Netherlands, with Amsterdam as world's largest cocoa port, is the major importing country of Cameroon cocoa followed by Spain and Malaysia.

105. The value share of actors in the conventional cocoa chain in Cameroon is illustrated in the next table. There is a difference between the way value is distributed for marketing through middlemen and marketing through a cooperative.

106. Table 2.0 illustrates that farmers selling to a cooperative receive slightly better prices than farmers who sell to private buyers. The main reason why farmers continue to sell to private buyers is that these middlemen pay farmers immediately for their cocoa. Farmers that are known to be often in need for fast cash bypass the cooperative for this reason, as cooperatives tend to delay their payments. The value chain does not function in isolation and is surrounded by various other actors and institutions.

Table 2.0 Value shares of actors in the conventional chain

	VALUE SHARE OF ACTORS IN THE **CONVENTIONAL** CHAIN				**USD/KG**		
	Chain actor	Variable cost	Revenue	Gross income	Added value	Gross margin	Value share
			Selling price/Kg	Revenue cost	Revenue minus previous actor's revenue	Gross income *100/ revenue	Added value
							Retail price
1. Marketing through **middle** men	Farmer	0.91	2.44	1.53	2.44	63%	75%
	Middleman	2.46	2.53	0.06	0.09	2%	3%
	Exporter	2.62	3.27	0.65	0.74	20%	23%
Total					**3.27**	**85%**	**100%**
2. Marketing through **cooperative**	Farmer	0.91	2.48	1.57	2.48	63%	76%
	Cooperative	2.57	2.57	0	0.09	0%	3%
	Exporter	2.66	3.27	0.61	0.70	19%	21%
Total					**3.27**	**82%**	**100%**

International Partners

107. They assist financially, technically and with consultancy services. Examples are UPCOCOA, STCP, ITRA and IRAD/CIRAD.

Transporters

108. Transporters are involved in the evacuation of cocoa from collection points to exporter's warehouses and the port of shipment. Given the sometimes deplorable state of the roads this part of the chain should not be underestimated.

Usinage Café et Cacao (USICAM)

109. It is the country's biggest plant for drying, cleaning, grading and warehousing cocoa beans. It secures the quality of cocoa before exportation. The Singapore based cocoa buyer OLAM has jointly acquired the Cameroon cocoa processor (Usicam) together with ADM.

Government and other partners

110. *Ministry of Agriculture and Rural development*, Assists farmers to stimulate and improve production, develops agricultural co-operatives. Supports farmers for securing handling, transportation and marketing of their products.

111. *National Cocoa and Coffee Board*, Deals with issues related to commercialisation of cocoa and coffee.

112. *Inter-professional Cocoa and Coffee Board*, Technical structure in charge of monitoring the execution of task necessary to assist cocoa and coffee producers.

113. *Ministry of Commerce*, Play a role in implementing trade policy reform on cocoa to be in line with the market oriented economic system.

114. *Institute of Agricultural Research for Development (IRAD),* Improvement of field techniques in establishment and maintenance of cocoa. Study is being carried out to develop biological methods for the management of *Phytophtora*. A team of researchers develop *Trichoderma* micro organisms that have been shown to have effect against *phytophtora*.

115. *International Institute of Tropical Agriculture*, The strategy of IITA under the project of Sustainable Tree Crop Program (STCP) is to attain full economic potential of cocoa production and an environmental sustainability of the farming system by keeping the production cost at a low level. This is done through the Farmers' Field School program.

116. *Ecocert.* This is the main international organic certification body active in Cameroon. It has an office in the country and guarantees that the product and process respect the norms and standards of organic production through inspection and certification.

3.6.2 Feasibility study for organic cocoa in Cameroon

117. In the feasibility calculation all costs involved in the cocoa production and processing have been included up to the point of shipment (FoB). The data were gathered from the relevant parties involved in the cocoa chain in Cameroon. Especially the Cooperatives have given their input. Major assumptions were:

- The organic market continues to grow and the organic cocoa from Cameroon finds buyers who pay a premium
- The exporter pays an organic premium to farmers
- The rate of currency exchange is stable
- All cocoa is exported as organic
- We are not taking into consideration 'newly-created' cocoa farms, but only organic by default and extensive cocoa production.

118. Figures are taken from 11 February 2008 when the NY stock exchange spot market price was US 2,400/tonne and the farm gate price in Cameroon 900 CFA/kg. The premium paid by the buyer for organic is $200. The U$ 200/tonne organic export premium is a rule of thumb. It means that for a small organic project, exporting 175 tonnes, U$ 35,000 is available for various extra costs associated with maintaining the organic status, like a farm gate premium paid to the farmers, some extra 'organic' inputs like alternative pesticides, the cost of maintaining an Internal Control System that allows for group

certification, the external certification body and various costs to keep the organic cocoa separate from regular cocoa.

Box 1.3 Internal Control System

The Internal Control System (ICS) is a prerequisite for group certification. Originally developed for organic farming it is a concept also used by Rainforest Alliance and Utz Certified. Regulations in the main markets require all farmers to be inspected annually. When this is done by external inspectors, the exercise would be far too costly for individual smallholder farmers. For organised smallholder farmers, the field staff, which is normally providing extension services to farmers, can also do an internal inspection. This is much cheaper. In this case it is the duty of the farmer organisation to sanction non-performing farmers –farmers not keeping to the rules- and provide the external certification body with a list of approved farmers. The **external certification body** then does a spot check of the farmers. A risk is that when they detect one or two farmers who are not producing according to the organic standards, the whole group may be decertified as it would mean a malfunctioning of the internal control mechanism.

How does it work?

- All farmers should be registered/contracted by the organisation.
- There is an internal standard (That is necessary because much of the language of the foreign regulations is too complicated and also not relevant for cocoa smallholder farmers).
- The standard is a simple but comprehensive instruction in local language on how to grow organic cocoa, with do's and don'ts.

The field officers must be trained in how to do the internal inspections. They usually do not inspect farmers they usually work with. This is to avoid conflict of interests. Together with the farmer, the internal inspector discusses the growing practices and also makes a yield estimate. The annual internal inspection form is a wealth of information on how the farmers are producing cocoa, where one can see the impact of the different trainings and practices. There can also be information on some socio-economic questions. The inspector gathers information on the impact of the conversion from conventional (organic by default) to organic farming.

The cooperative or exporter must have a Documentation Officer, who processes all the information. He/she intervenes when some farmers do not follow the internal standard and do not comply with the organic standard. The Documentation Officer, together with the Field Supervisor, compiles the list of Approved Farmers which is sent to the external certification body.

Once certified, the sales of the approved farmers to the buying centres is recorded and compared with their estimated yield. The clerks in the buying centres must be trained in keeping the organic cocoa separate. When farmer delivers significantly higher volumes, this is investigated. This is also the duty of the Documentation Officer/Field Supervisor.

Normally, the field staff acts as trainers-extension agents during 9 months of the year. During 3 months, they change positions and act as internal inspectors. Different organisations have developed different ways of allocating the costs of this double function, sometimes it is just under field staff, it can also be split out. In this case the costs are part of the field staff. Also the cost of the stationary, the office, the computer is supposed to be made available by the cooperative (AgroEco/LBI 2011).

119. The costs of certification are often presented as a major issue in organic agriculture and would have a significant impact on the economic viability of organic cocoa production in Africa. (The calculation of the costs involved in organic certification (by Ecocert) and ICS are based on the farmer surveys and experiences of AgroEco/LBI in Ghana). In Cameroon the total costs involved in certification are estimated at only 2% of FoB (total certification costs/FoB price Cameroon, i.e. 60USD/ 2,600 USD). The next table illustrates the composition of these costs. We make a distinction between internal (involved in ICS) and external costs (external certification costs). For Cameroon (200 farmers, of which 163 tonnes is exported- 175 minus the 7% grading losses) the costs are estimated at 9,813 USD, which comes down to 60USD per tonne. These costs will reduce if more farmers become involved in the project. In principle these costs are covered by the premium.

Table 2.1 Certification costs Cameroon in USD

INTERNAL	**CAMEROON *(163MT)***
Field staff	1,704
Transport (motorbike)	618
External	
Organic certification (Ecocert)	5,618
Internal Control System costs	1,873
Total cost	9,813 (60USD per tonne)
	2 % FoB

120. The feasibility of organic cocoa is not directly threatened by the involved costs of certification. What is often perceived as a threat of certification has more to do with sovereignty issues and also with a lack of capacity to work with the scheme; this requires training. The costs for certification are included in the next table under ICS costs (internal costs) and organic certification Ecocert (external).

121. The next table presents a calculation of the feasibility of organic cocoa production in Cameroon under the actual circumstances. Important variables are:

- FoB price and producer price
- The number of farmers (200)
- The average yield/ha (457 kg/ha)
- A capture rate of 66%.
- Premium price

122. These three figures are coming form a field survey conducted among 9 cooperatives in November and December 2008. The 66% default rate is an estimation based on experiences of farmer groups who buy cocoa from their members. Loyalty of farmers is not guaranteed. We have talked to a number of farmers who sell their cocoa to private traders when they are in need for fast cash. This capture rate can be increased if a good relation with the farmers is established and farmers receive incentives to remain loyal to the groups.

123. The premium is determined on the world market: between buyer and seller. At the time of writing this report, the premium was 300 USD, which would be 15% if the FoB is 2,000 USD.

Table 2.2 Feasibility calculation Cameroon

Cost-Price FOB Douala	
Nr Farmers	200
Hectares per farmers	2.9
Hectares cocoa	580
Yield per hectare	457
Total yield	265,060
Capture rate	66%
Cocoa captured kgs	174,940
Cocoa captured tonnes	175
Grading losses	7%
Cocoa exported	163
Kgs per bag	70
# of bags	2,324
# of containers	8.3

Rates	
CFA/USD (Nov 2008)	534
USD/Euro (Nov 2008)	1.26
# of cocoa bags per container	280

Cocoa Price (FOB)		
	CFA/Kg	USD/tonne
Farmer price (organic)	1,035	1,938
FOB price	-	2,600
Farm gate % of FOB (USD)		74.5
Farm gate (conventional)	900	1,685

Inputs		Units	Quantity	Unit Cost (CFA)	Total Cost (CFA)	Total Cost (USD)	Cost per mt (USD)
Jute bags		bags	2,499	350	874,698	1,638	10
Equipment		lump sum	580	10,680	6,194,400	11,600	71
Total Input Cost					**7,069,098**	**13,238**	**81**
Conventional Price		CFA/kg	174,940	900	157,445,640	294,842	
Organic Premium				15%	23,616,846	44,226	
Cocoa farmer price				**1,035**	**181,062,486**	**339,068**	**2,084**
Transport to warehouse		bags	2,499	37	92,468	173	1
Grading		bags	2,499	225	562,306	1,053	6
Export bags		bags	2,324	500	1,162,099	2,176	13
Taxes		bags	2,324	200	464,840	870	5
Field staff		technician	13	70,000	910,000	1,704	10

Inputs		Units	Quantity	Unit Cost (CFA)	Total Cost (CFA)	Total Cost (USD)	Cost per mt (USD)
Motorbike running cost		lump	11	30,000	330,000	618	4
Coop					**3,521,712**	**6,595**	**41**
ICS costs		lump			1,000,000	1,873	12
Organic Certification Ecocert		lump			3,000,000	5,618	35
Certification					**4,000,000**	**7,491**	**46**
Grading and analysing		tonnes	163	20,900	3,400,301	6,368	39
Warehousing		tonnes	163	13,154	2,140,075	4,008	25
Loading		tonnes	163	5,929	964,612	1,806	11
Exporter					**6,504,987**	**12,182**	**75**
Fobbing		CFA	8.3	6,000	49,804	93	1
Transit documents		CFA	3	35,000	96,842	181	1
Transfer		CFA	163	2,629	427,722	801	5
DIT Handling		CFA	8.3	79,000	655,756	1,228	8
Customs		CFA	3	80,000	221,352	415	3
Taxes		CFA	163	1,298	211,177	395	2
Certificates		CFA	8.3	15,000	124,511	233	1
Insurance		CFA	163	1,125	183,031	343	2
Regulatory bodies		CFA	163	16,500	2,684,448	5,027	31
Port handling					**4,654,642**	**8,717**	**54**
Cost FOB Douala					**206,812,925**	**387,290**	
Cost FOB per tonne							**2,380**
Sales price FOB							2,400
Organic Premium							200
Total FOB price							**2,600**
Profit per tonne						35,714	220
Margin on cost							9.22%

124. In 2008 organic cocoa production seems to be feasible in Cameroon for the selected producing regions and producer organizations. The feasibility study shows that conversion from conventional cocoa (organic by default) to certified organic cocoa can be highly profitable. One factor that has a major effect on profitability is the price paid to the farmers. This price seems to be very high, also compared to surrounding cocoa countries. But we have reason to believe that this data is accurate. Prices highly fluctuate (within seasons) and can also differ among regions. This price is based on data obtained in the field: up-country in the South West area farm-gate price.

125. The feasibility of organic cocoa production for a producing organization exporting directly is highly dependent on the distinguished variables. This interdependency is illustrated in a sensitivity analysis (Table 2.3).

Table 2.3 Variables in feasibility (sensitivity analysis) for an exporter and/or a cooperative exporting directly

SITUATION	A.	B.	C.	D.	E.
	Actual situation	No premiums	New York $ 2,000 and farm gate 675 CFA	Improved yield and capture rates	Improved yield, capture rates and # of farmers
Premium	200	**0**	200	200	200
Margin	9.22%	0.82%	**18.31%**	11.25%	12.22%
Yield	457	457	457	**600**	**600**
Capture rate	66%	66%	66%	**75%**	**75%**
Number of farmers	200	200	200	200	400

126. In situation A, the margin on costs is 9,22%. This is based on the situation in February 2008. This is a reasonable but also quite a small margin. Earlier in this document we highlighted that the premium for organic cocoa production is subject to change. In February 2008 organic cocoa sales took place at conventional prices. Let us suppose that the market for organic does not improve in the remaining part of 2008 (situation B). This means that there are no premiums from the importer (the 15% for the farmer will be maintained.) The margin drops immediately to 0.89% (still profitable).

127. A characteristic of the local Cameroonian cocoa market is the high price paid to farmers: 900 CFA per kg compared to for example 417 CFA in Sierra Leone, 500 CFA in Cote d'Ivoire. These high farm gate prices put the profitability of an organic cocoa chain under pressure.

128. Another fact that puts the feasibility of the organic cocoa chain under pressure is the high prices for cocoa at the NY future market. If NY drops to $2,000 and farm gate to 675 CFA, the margin will immediately go up to 18.31% (situation C.)

129. The outcomes of the feasibility study form the basis for the recommendations on how to develop organic cocoa production in West Africa (see attached document). As presented, we suggest an integrated cocoa package where the different variables that determine the feasibility of organic cocoa production are explicitly targeted. For example, the package, which included on-farm training, will increase average yield/ha. Because of building up already existing relations with cooperatives and further investment in these relations, it is expected that the loyalty of the farmers (in terms of selling to

the cooperative instead of private buyers) will increase, which will positively affect the capture rate. If we increase (situation D.) yields to 600 (yield/ha) and the capture rate to 75% (instead of 457 kg/ha and 66%). We see that the margin on costs will rise from 9.22% towards 11.25 %. If at the same time more farmers join the cooperative (400 in stead of 200) the margin will even increase up to12.22% (situation E.).

3.6.3 Costs comparison

130. So far, the information provided in our feasibility study does not present a complete picture of the comparison of conventional versus organic cocoa production. We lack that data for Cameroon, but we can build upon the example of Ghana, where AgroEco/LBI has experience with organic cocoa production. For Ghana, we already have all the necessary data in order to make a comparison between organic by default, conventional, certified organic and high-tech cocoa (Annex 1). When looking at this table, it becomes clear that high-tech cocoa is most optimal for farmers in terms of income, organic cocoa production is second (more interesting than conventional cocoa). It should be noted that, in the example of Ghana, farmers received besides a premium for organic cocoa also a fair trade premium. We do not consider this price premium, as this project is dealing only with organic certification. However, the involvement of farmers in high-tech production involves high risks. These risks are partly related to the nature of high-tech production: it requires large investments (dependency on credit), both in terms of labour and in terms of inputs. Partly risks have to do with the use of fast producing hybrids. These varieties which are often planted without shade, produce fast and a lot, but their lifespan is limited. Our experience is that in general farmers are hesitant to become involved in more intensive ways of farm management, especially older farmers.

131. Organic cocoa production, which according to the comparison is “2nd best”, has some additional benefits. For example, organic (shaded) cocoa production contributes to less erosion, biodiversity conservation, water detention, less problems with inappropriate application of pesticides, lower pest infestation, green services micro-climate management, carbon sequestration (green services) and less fluctuation in yields (more reliable income).

132. The next table (Table 2.4) lists the costs involved in organic cocoa production for Ghana.

Table 2.4 Costs involved in Organic Practice Ghana

COST (IN USD) PER ACRE	
Organic practices	
Input costs	
Poultry manure	43,20
Spot spray neem	11,00
Fungicide	1,92
Labour costs	
Fertilizer application	10,00
Insecticide application	10,00
Fungicide application	6,00
Weeding/mulching	4,00
Fixed costs	
Protective clothing	5,00

External certification	8,00
ICS/training	6,00
Replanting	1,80
Total costs	106,92
Revenue	
Yield (bags/acre)	5,00
Standard price per 63 kg bag	56,30
Farm gate premium (10%)	5,60
Export premium	7,40
Fair trade premium	9,45
Organic premium per bag	78,75
Gross income	393,75
Costs	106,92
Net income	286,83

133. The cost of conversion from conventional to organic certified cocoa varies depending on specific farm and region situation. The aim of organic farming is to enhance the natural biological cycles in the soil (nutrient cycling in the soil) and crop (encouraging natural predators of crop). As such, organic agriculture seeks to work with natural processes instead of trying to dominate them, and to minimize the use of non-renewable natural resources such as synthetic fertilizers and pesticides. For the specific case of this project, there are significant variations between country cases. For Cameroon, the study showed that the South West area holds the greatest potential for organic certified production. Among the characteristics evaluated, the dynamics of cocoa farming and the good soil conditions were key factors for the selection of the areas. This means that the conversion process would be easier to apply in this case. For Togo, the process is more complex, as farmers are less organized, there is little application of good agricultural practices by farmers and the soil conditions in general are poorer. In Togo, the costs of conversion will mainly involve replanting of cocoa trees and training of good agricultural practices.

134. The feasibility study only contemplated the option of converting organic by default to organic certified. For this case, the cost of conversion is minimal, as it is more about substitution from conventional inputs to organic ones. Farmers will have adapt their farming practices in accordance to organic farming practices, were there will be an increase in cost due to the additional practices. These costs will vary significantly each year, as the cost can increase when extra labour is needed outside the labour peaks.

4 Togo

4.1 Socio-economic conditions

135. Togo covers an area of approximately 57,000 square kilometres (22,000 sq mi) with a population of approximately 6.7 million, Togo is a tropical, sub-Saharan nation, highly dependent on agriculture, with a climate that provides good growing seasons. Togo's small sub-Saharan economy is heavily dependent on both commercial and subsistence agriculture, which provides employment for 65% of the labour force. Cotton, coffee and cocoa together generate about 40% of export earnings. Togo is self-sufficient in basic food goods when harvests are normal, with occasional regional supply difficulties. In the industrial sector, phosphate mining is no longer the most important activity, as cement and clinker export to neighbouring countries have taken over. It has suffered from the collapse of world phosphate

prices, increased foreign competition and financial problems. Togo's GNI per capita is US$380 (World Bank, 2005).

Map 1.4 Togo

4.2 Local cocoa economy

136. Cocoa production is limited to Région des Plateaux, the south-western part of Togo at about 100 – 150 km from Lomé and that detains 91% of the cocoa production area. The second production area is Région Centrale at about 200 km from Lomé.

137. Cocoa production in Togo has always been linked to its coffee production. Cocoa and coffee were introduced in the 1920s. Since then, they have represented an important percentage in Togolese products exports, although production fluctuated over the years, and shows an overall decline since the 1970s.

138. The decrease in production of both crops has been explained by the advanced age of the plantations, pests and diseases and the lack of agricultural training. Both for coffee and cocoa, productivity decreased.

139. In the late 1960s, some initiatives were taken to overcome the problems and technical constraints that coffee and cocoa farmers faced, first by the French Institute for Coffee and Cocoa, and later by the 'Society of Renovation for the Development of Coffee and Cocoa Plantations'. In twenty years, this society renewed the plantations on the basis of agricultural technologies proposed by research centres and by introducing new varieties (hybrids) from neighbouring countries. This resulted in the doubling of the volume of cocoa (as well as for coffee) produced in a period of ten years (from 5,000 to 10,000 tonnes). However, productivity levels remained low, mainly due to bad agricultural practices. Productivity levels are currently estimated at 400 kg/ha. The main challenges for cocoa production are

the decrease of soil fertility and pests and diseases. Another type of challenge is the current organisation of the sector and its enabling environment. Besides opportunities, also incentives are lacking for farmers to invest more in the cocoa farms.

140. Just like other cocoa producing countries in the region, Togo liberalized its internal and external marketing system in the 1990s. The objective of the reforms was to improve producer incentives and income and develop private participation in marketing and export activities while maintaining the country's reputation as a reliable supplier of quality products in international markets. This process also involved institutional reforms. Prior to liberalization in 1996 the state intervened directly in management or support for farmers, replanting programmes and supply of inputs, through the Board of Agricultural Products of Togo (OPAT).

141. Initially the volume of production decreased as a result of an increase in the price of inputs. In order to combat this development, new partnerships have been formed between input providers and producers' organizations. Potential private exporters, as well as representatives from the banking community and the administration participated in the design of the reforms. The resulting regulatory framework covered criteria for domestic and external marketing, including bank guarantees, quality control and information dissemination. A Coordination Committee, with representatives of the private sector, producer cooperatives, and the government was established to oversee the reform process. The participatory process that was followed in Togo is presented as the main reason for some of its successes.

Table 2.5 The national production of cocoa 1996-1997 – 2004/05[5]

Exporting year	Quantities (tonnes)
1996/1997	14,497
1997/1998	5,710
1998/1999	6,843
1999/2000	6,943
2000/2001	6,435
2001/2002	5,586
2002/2003	7,835
2003/2004	21,522
2004/2005	13,347

Source: CCFCC / DQM

142. The farmers' share of the FoB price increased considerably (from 60 to an average of 80 per cent in 1996-97), as well as the volume of production. In 1999/2000, the producer price was 377 FCFA/kg. In 2002/03 the highest registered price was 900 FCFA/kg[6]. In order to maintain the quality standard, producers intensified their crop maintenance efforts. Problematic however was that the state withdrawal from cocoa extension services without any replacement plan. The high costs of inputs lead to low adoption of recommended practices and institutional support for research and extension is necessary (COPAL, 2004).

143. Since 1996 chain support comes from new actors:

[5] Frederick A Kouwoaye. Cocoa and Organic cocoa production situation in Togo.

[6] REPUBLIQUE TOGOLAISE. 2008. Travail-Liberté-Patrie. MINISTERE DU COMMERCE DE MINISTERE DE L'INDUSTRIE DE L'ARTISANAT DES L'AGRICULTURE DE PETITETS ET MOYENNES ENTREPRISRES L'ELEVAGE ET DE LA PECHE. Stratégie de relance et de développement des filières café et cacao.

- ACDR: *Association de Conseils et d'Appuis pour le Developpement Rural*
- APAF : *Association pour la Promotion de l'agro foresterie*
- ITRA/CRAF : *La Recherche Agronomique*

4.3 Local governance and development management

144. In August 2008, the Togolese Ministry on Trade and SMEs, together with the Ministry of Agriculture and Fisheries shared their vision on a national strategy to revive the coffee and cocoa chains in Togo. This is a response to the reforms that were introduced in the 1990s, and the impact of these reforms on production levels, volume of production, quality of the produce and applied technology. The objective of the strategy is to revive the cocoa and coffee sector in the country by strengthening institutional support to the sector, higher levels of productivity, better quality of the produce, safeguarding the environment and support research activities[7].

4.3.1 Natural environment

145. Togo is divided in five regions. In the north, the land is characterized by a gently rolling savanna in contrast to the center of the country, which is characterized by hills. The south of Togo is characterized by a savanna and woodland plateau which reaches to a coastal plain with extensive lagoons and marshes.

146. Kpalime is one of the four urban centres in the "plateaux region". This region, which is characterized by mountains, plateaux and plains, is divided in five provinces, and two sub-provinces. Its total surface is 7,750 km2 and the population is composed of several ethnic groups (e.g. Ewe, Akpossi, Akebou). Its total surface consists of two distinct zones with various climatic conditions: the East zone is favourable to the cotton production and the West zone to the culture of coffee and cocoa (Wegbe et al., 2007)[8].

147. Pests and diseases are a major threat to cocoa production in Togo. Swollen-shoot is the most prevalent and dangerous disease to the cocoa farm and caused losses of more than half of the production.

[7] As part of the feasibility study we shared our project with governmental representatives. This led to the request to write a chapter on opportunities for organic cocoa in Togo. If the prospects for organic cocoa look good, the follow-up of this project will be embedded in the national cocoa strategy.

[8] Wegbe, Komlan et al, cited in Bugingo Leonard, 2008 'Agroeco West Africa, Baseline survey and feasibility analysis on Organic Cocoa, Coffee project in Agou, Kloto and Badou - TOGO. Rural Development and Innovation. Larenstein, University of Professional Studies, Wageningen-the Netherlands. AgroEco Partners in Organic Growth.

Picture 4.1 Swollen Shoot

148. Black pod is another major disease in Togo. Another threat on Togolese cocoa farms consists of insects called *Myrids*. Borer's attacks also constitute a major problem.

149. In Togo, there is a number of causes identified that contributed to the spread of pests and diseases:

- Cocoa monoculture
- Bad location of farms (e.g. too dry)
- Poor soil conditions (lacking organic matter)
- Too dense spacing of similar plant species
- Lack of shade management
- Lack of hygiene on farm (no clearing on farm)
- Bad harvest practices

150. Besides the high prevalence of pests and diseases, the use of chemicals is relatively low. Generally, Togo seems a favourable environment for organic agriculture (Togo was among the first countries involved in the organic agriculture in West Africa). The first organic company, Togo Bioferme, was certified in 1985 by Demeter for banana, pineapple, ginger, coconut, avocado and lemon which were exported to Germany. Experiences with organic cocoa production started in 1989 in different zones in Togo, among them Agou. Organic production started of in some villages in the mountains (Agou, Akebou, Amou). These villages were difficult to access for the implantation of the mass spraying programme of the government. Organic cocoa operator got also small quantity of its supplies from Alokoegbe and Gape production sites. As far as disease management is concerned, the operator used cupric oxide for cocoa treatment. The first cocoa was certified as organic by Ecocert and called "Cacao bio des montagnes". This cocoa was sold to a French company, Kaoka. The last field inspection goes back to 2003. According to the manager (Amewokounou Zinse Pierre), the annual export quantity was about 140 tonnes and the "certified" area was about 1500 ha[9]. It has been argued that the production system in place had no internal control system, but it was collected from "reliable" farmers. There was an agreement between the exporter and farmers and there were farmers' field visits at least once a year. According to the last inspection done in 2003 by ECOCERT, organic cocoa production took place in 41 villages, including 1575 producers on a surface of about 1,500 ha. Thereafter, the organic cocoa (and coffee) plantations failed. Currently there is no organic cocoa production and export company in Togo.

151. Some challenges that have been formulated on basis of this experience are:

[9] Frederick A. Kouwoaye. No date. Cocoa and Organic Production Situation in Togo.

- Lack of government policy and legislation
- Limited knowledge and wrong perception of organic cocoa
- Lack of information on regulation and standards
- Lack of information of organic cocoa markets
- Extensive certification
- No support from the government, external international development institutions or donors
- Shipping problems (high costs)
- Lack of strong farmer organisations
- Activities in this field ended in 2004.

152. So far, organic agriculture has remained business of the private sector. It is important to outline that till now there was no governmental interest and policy towards the development of organic sector in Togo[10]. For organic cocoa production governmental bodies have expressed their potential interest in organic cocoa production, if this method contributes to revival of the overall cocoa sector.

153. The conditions for organic cocoa seem favourable to the extent that a large number of farmers is not (yet) applying chemicals. Conversion of 'organic by default' to 'certified organic' is relatively easy. The ITRA/CRAF 2006 report reveals that the use of agricultural inputs is low and mineral fertilization is almost absent. It can also be expected that, considering low levels of productivity and the quality of the cocoa, there is a lot to gain with training of farmer groups. However, there also some weaknesses, such as the weak organisation of the chain, the low level of organisation among farmers and the pests and diseases that threaten production levels. Also, it should be noted that the reason for not using chemicals is mainly a financial one, and has nothing to do with environmental awareness.

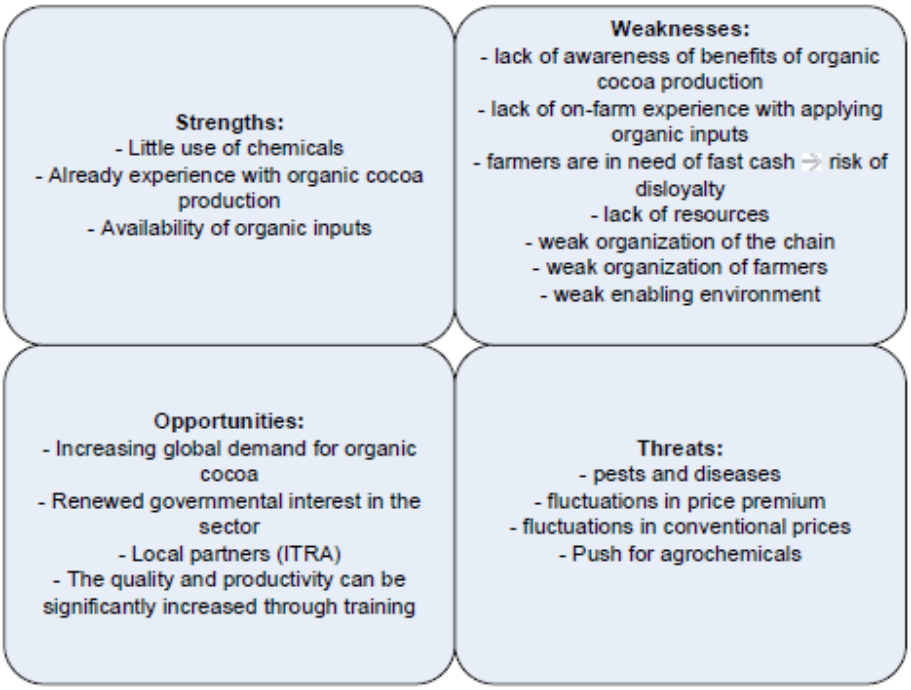
154. Cocoa producers are organized in producers groups at village level; the groups are gathered in unions that are gathered together in one federation named FUPROCAT (Fédération des Unions des Groupements de Producteurs de Café et Cacao).

4.3.2 A SWOT Analysis as basis for the selection of producing areas and producer organizations

155. In Togo, the conditions for organic production seem less favourable in comparison with Cameroon. For example, in Cameroon, strong international partners are already working with farmer organizations. Also, in terms of volume of production, Cameroon is a significant player, while Togo's contribution to the world production of cocoa is only small. Nevertheless, in terms of opportunities for organic cocoa production, Togo is an interesting case. It has already quite some experience with organic cocoa production and with organic agriculture in general. Moreover, there seem to be a lot to gain if on-farm investments are being made. Farmers do not receive training and the majority is not organized in groups. Organic cocoa production, which goes hand-in-hand with training, can be expected to give a boost in the volumes of production and can significantly contribute to a better quality of cocoa. In other words, organic cocoa production can have a significant positive impact on farmers' income. Weak points are that the chain is poorly organized.

[10] Frederick A Kouwoaye. No date. Background information on the organic sector in Togo.

Figure 1.7 A SWOT analysis for organic cocoa production in Togo



Source: Composed by author

156. This SWOT analysis provides the basis for the selection of producing regions and producers. In Togo, comparing to Cameroon, slightly different criteria formed the basis on which regions and possible partners were based

Regions:

- Cocoa production
- Favourable climatic conditions for organic cocoa production
- Little use of chemicals

Farmers:

- Age of farmers and their farms
- Location (avoid high costs for logistics)
- Willing to form a group
- Willingness to convert from conventional cocoa production to certified organic cocoa production

4.4 Selection of cocoa producing regions and farmers

157. A farmer survey was conducted in Kpalime and in Badou. Also, in addition, some farmers in Kloto were interviewed. In June 2008, approximately 650 cocoa producers in 16 villages were interviewed. In 2009, two multi-stakeholder workshops were organized and in-depth interviews with key stakeholders in and outside Togo were conducted.

158. In Zone Agou (Kpalime), farmers of six villages participated in the survey. The number of farmers interviewed in this zone was 132: 116 male, 16 female. Also in the other zones, only a small number of women was interviewed (44 female out of 595 male). Kpalime seemed relatively favourable for starting with organic cocoa production. In Kpalime more than half of the plantations was not treated with any chemical (53 % non-treated versus 46% treated). In non-treated areas the average yield was a little bit higher than in the treated areas (0,07 tonnes/year in treated area and 0,08 tonnes/year in non-treated area). A small majority of these farmers was below 50 years old (54%) and most plantations were younger than 30 years (56%). In Agou and Kloto the majority of respondents was older than 50 years (and their farms >30 years), while in Badou the majority was younger working on "younger" plantations. In Badou, comparing to other zones, more farms are treated with chemicals.

159. With respect to pests and diseases, Swollen Shoot has affected more than 70 per cent of the plantations located Litime, Kloto, Agou (ITRA/CRAF, 2007). In these areas replanting with new (more resistant) varieties is a necessary intervention in order to revive cocoa production. Black Pod disease is mainly active in Litime Area, Adele and Kouma (Kloto Northern). The least affected zones are Tove and Agou (Southern Kloto).

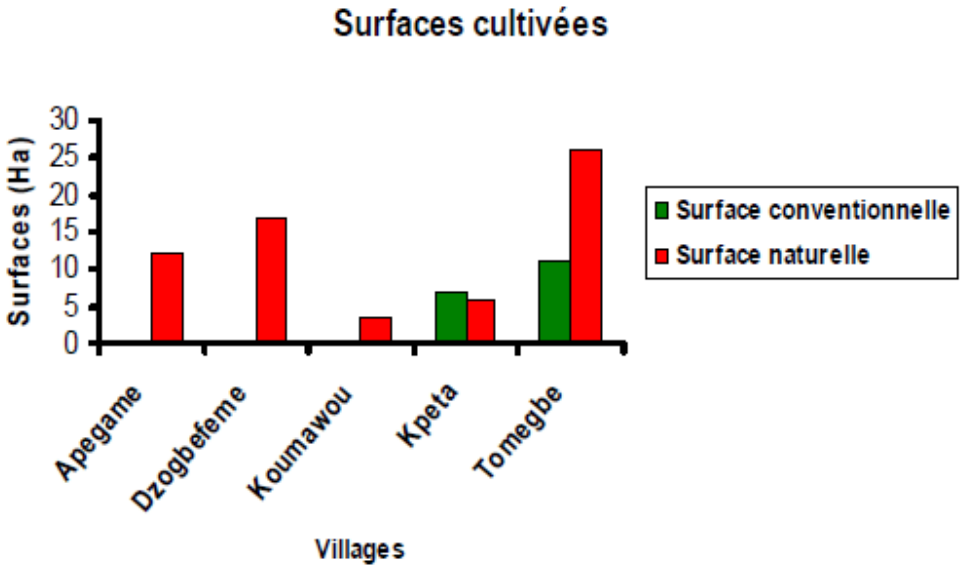
Results for the different locations

160. The survey gave the following results per zone and village.

KPALIME - Zone Agou

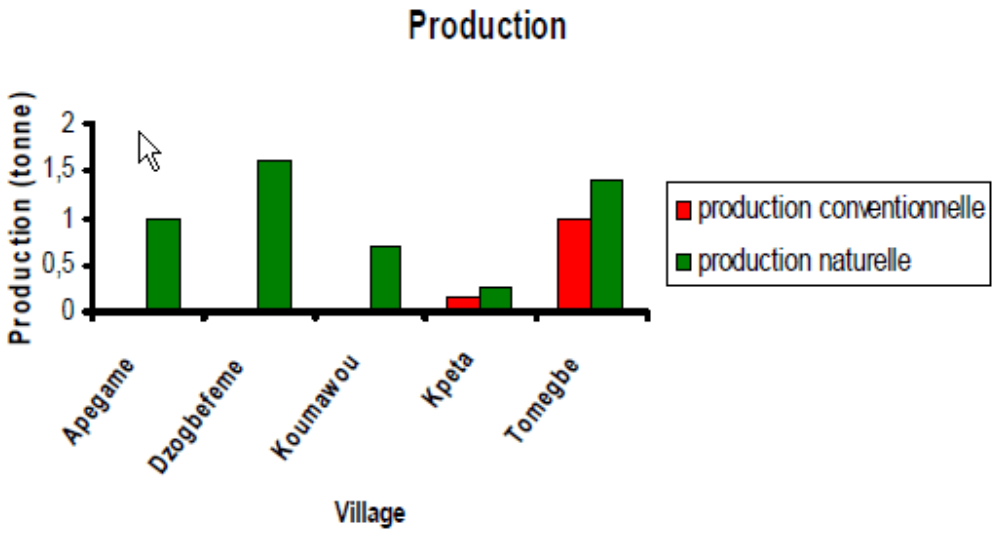
161. In Agou (Kpalime) there are two villages that use considerable chemical inputs ("surface conventionelle"). Farmers in these other villages claimed not to use chemical inputs. This difference can be partly explained by low incidence of diseases in these villages and partly by the size of the areas under cultivation. The next figure (Figure 1.8) illustrates that "organic cocoa by default" is dominant in this zone.

Figure 1.8 Areas under cultivation in Agou (in Ha)



162. The next figure (Figure 1.9), looking at total production in tonnes, illustrates that "organic cocoa by default" is dominant in this zone.

Figure 1.9 Production in tonnes in Agou



Kpalime - Zone FIWOKPO

163. Just like in the zone Agou only little use is being made of chemicals. The use of chemicals in Womé et Yéviépé can be explained by their proximity to Ghana

Figure 2.0 Area under cultivation in FOWOKPO (ha)

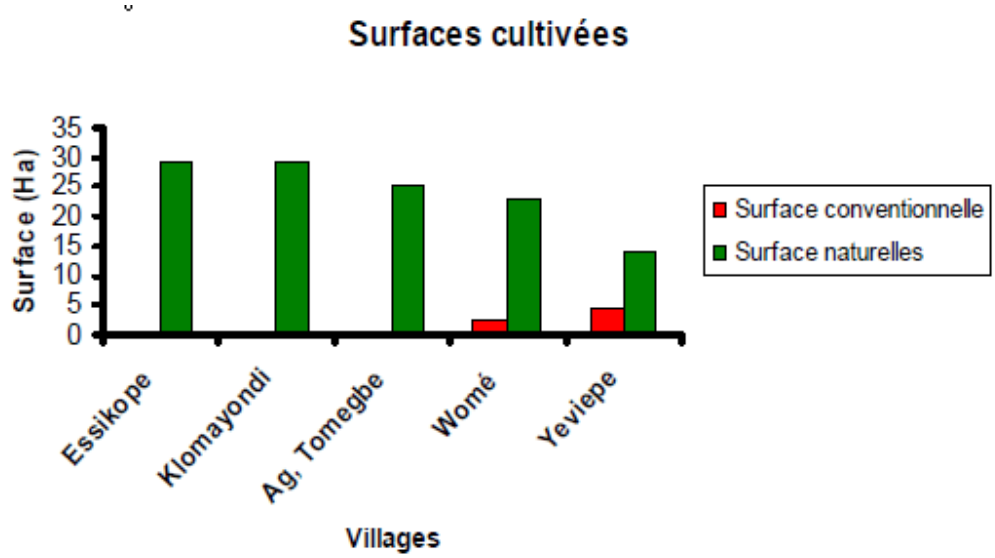
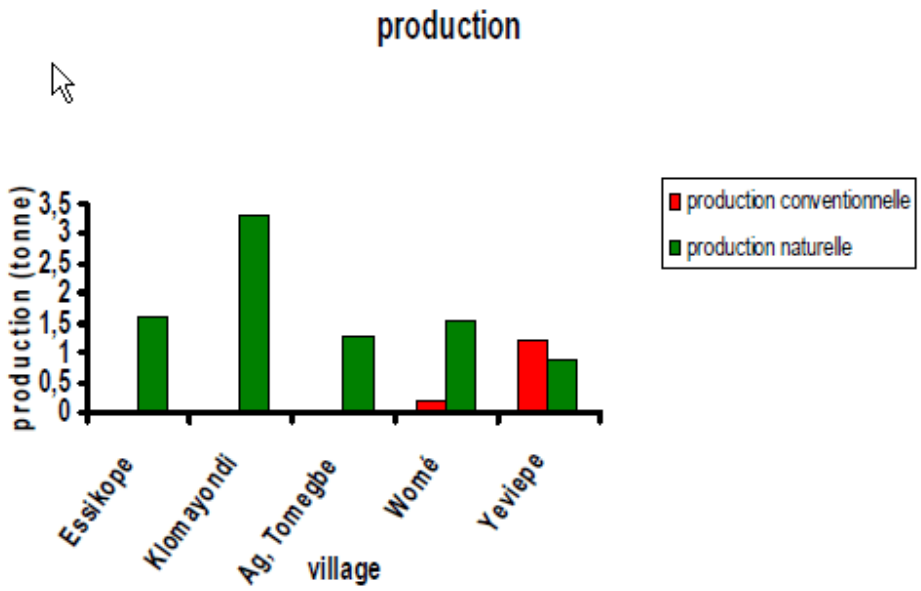


Figure 2.1 Production in tonnes in FIWOKPO



Badou - Zone Badou

164. Cocoa production is concentrated in this area. The use of chemicals is very high. Therefore, in this area the opportunities for organic cocoa production would depend highly on the willingness of the farmers to convert their farms from conventional to organic cocoa production. This transformation process would take a minimum of three years.

Figure 2.2 Area under cultivation in Badou

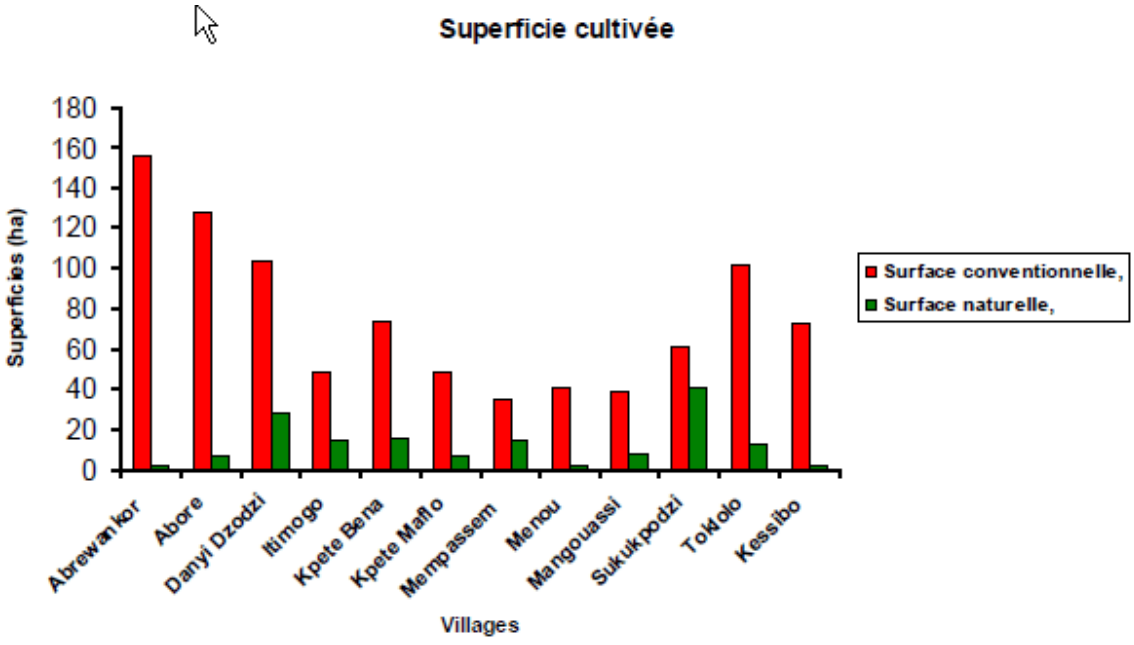
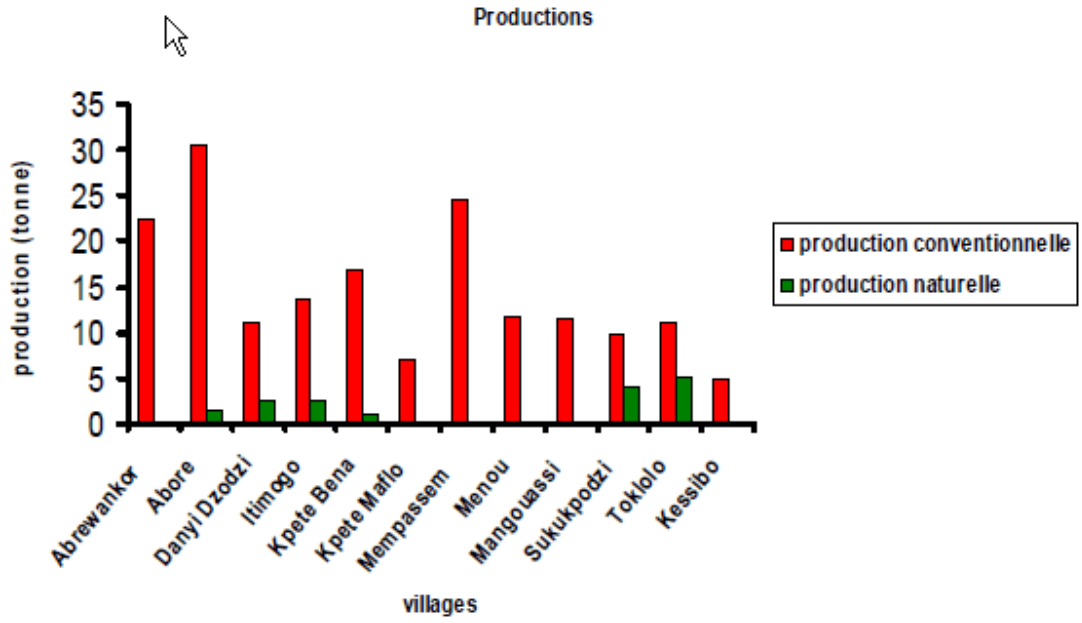


Figure 2.3 Production in Badou



Badou - Zone Klabé Azafi

165. In this area there are both plantations that are not treated with chemicals, as well as plantations that are treated. Remarkably, in Azafi Centre the untreated farms have relatively higher levels of productivity while in Benali this is the other way around.

Figure 2.4 Area under cultivation in Klabe Azafi

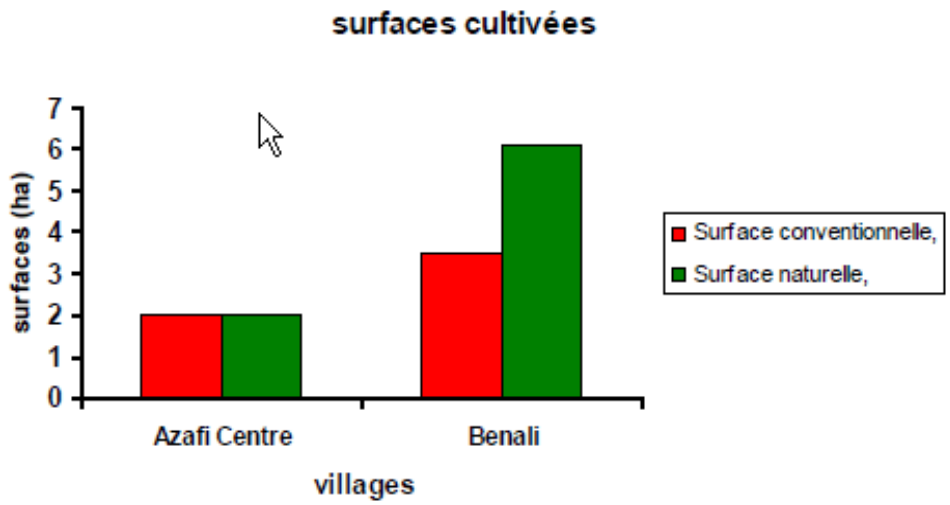
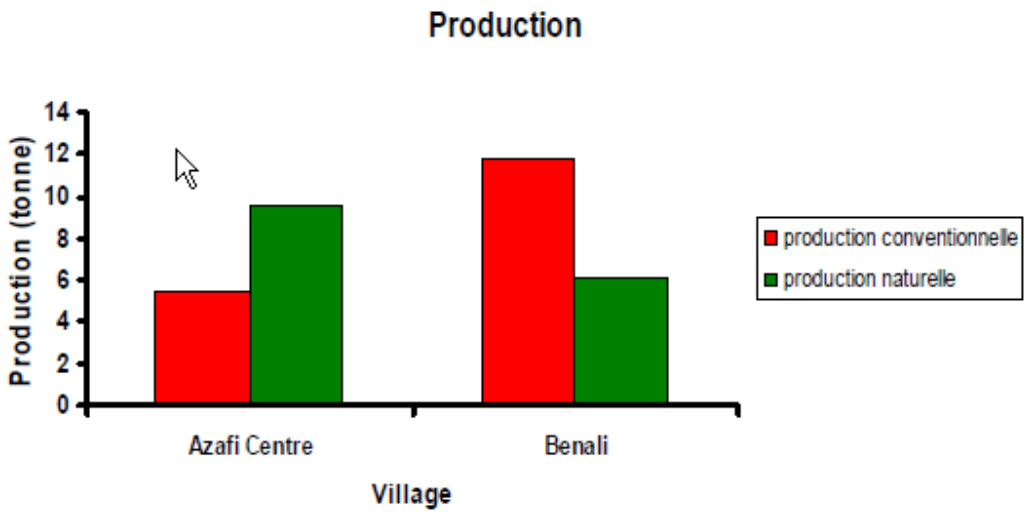


Figure 2.5 Production in Klabe Azafi



Badou - Zone Zogbégan

166. In this zone the farmers prefer coffee production over cocoa production. The few cocoa farms that were encountered made little use of chemicals.

Figure 2.6 Area under cultivation in Zobegan

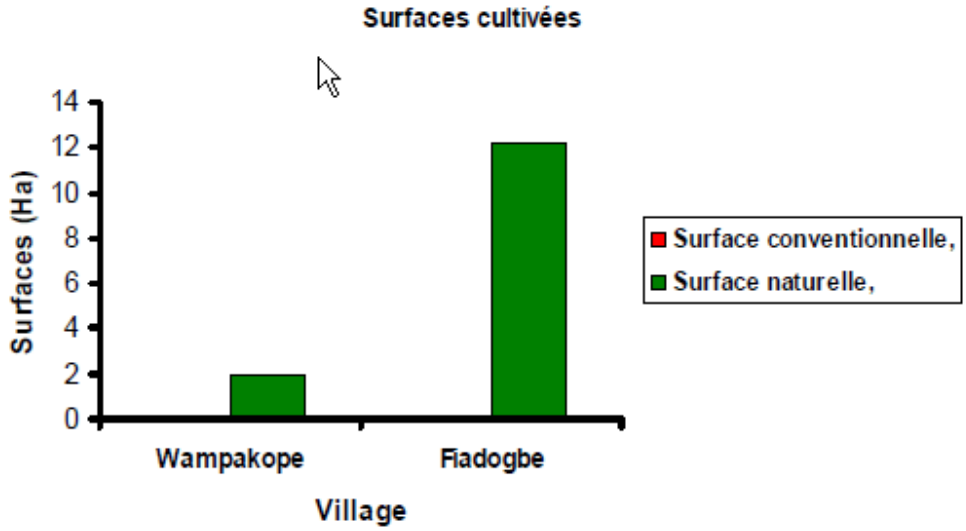
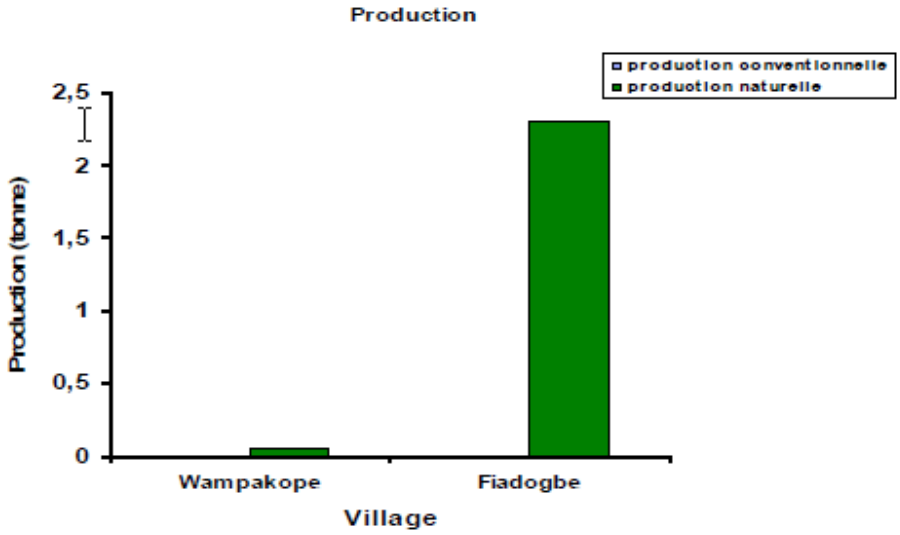


Figure 2.7 Production in Zobegan



Characteristics of the farmers and their organizations

167. One third of cocoa producers in Togo is organised in producer group association (Groupements des Producteurs de Café/cacao). Each of these groups is run by a president, secretary and treasurer, who are elected for 2 to 5 years at the Annual General Meeting. Each group holds such an annual meeting. On these occasions the group presents its financial situation to their members and discusses other issues.

168. These *groupements* or associations are organized in unions (UGPCC: Union des groupements de producteurs de Café et Cacao). These unions are member of a federation of unions (FUPROCAT: *Fédération des Unions des Groupements de Producteurs de Cafe et Cacao de Togo*). There is a total of 400 farmer groups and 13 unions actively operating.

169. The main role of an association of producers is to provide farmers with a marketing channel (the cocoa is bought and stored in the magasins of the association that operate at a village level). In addition they have the task to provide their members with training, advice and occasionally with inputs. In exchange for these services farmers pay a membership fee and a social share. This fee varies from 500 to 2000 FCFA and the social share varies from 2000 to 3500 FCFA. These contributions are paid either from debiting a certain percentage from the commission provided by the union to the group members (after cocoa sale), or through deduction of certain quantity of cocoa during delivery to the farmer group. Not all groups provide services to their members.

170. Due to a lack of available funding, not all groups manage to pay their members immediately after selling their cocoa to the groups' store. This results in a high default rate. Generally, the price paid by the *magasin* is a bit above the fixed government price and above the price paid by the private buyers. In addition, after the farmer union has sold the cocoa, farmers receive a small commission from their group.

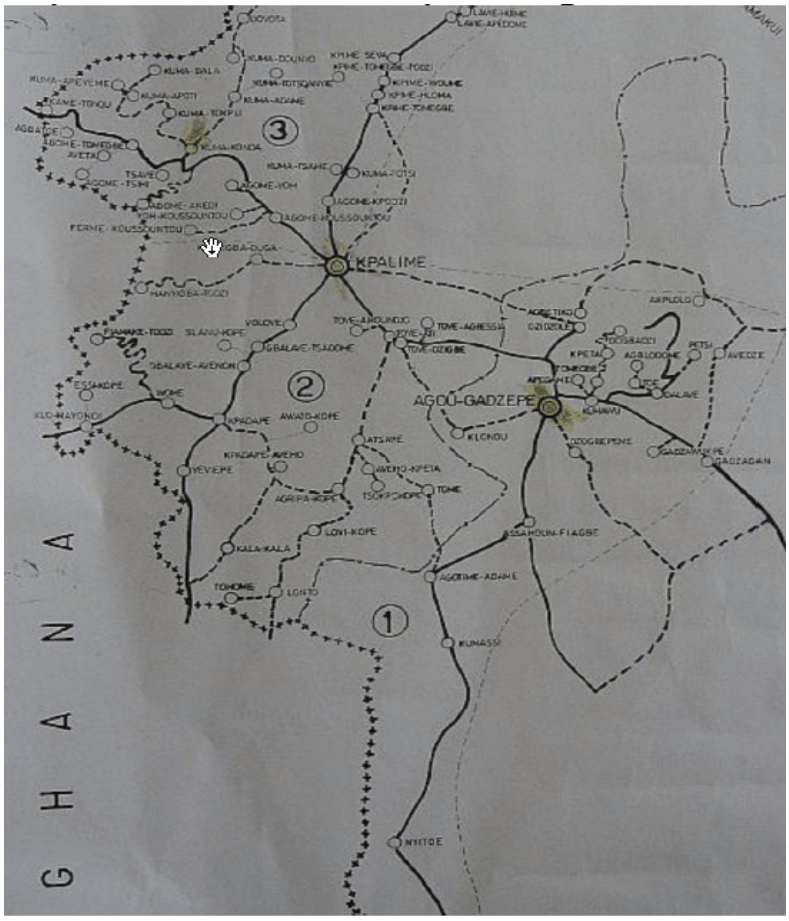
171. The unions play another role. They are responsible for searching union partners, further marketing of the product, and representing farmers' interests. The federation, FUPROCAT does the unions'

coordination and their expansion by integrating more producers. This umbrella organization also provides the production inputs to the producers through the unions.

Selection of location and farmers

172. Kpalime was selected as preferred area for the production or certified organic cocoa. The main selection criteria used for the selection of location were the occurrence of pests and diseases, the application of chemicals, the age of the farmers and their trees, yield and the location of the farms. The following map indicates the location of the selected villages around Kpalime.

Map 1.5 Selection of cocoa producing areas

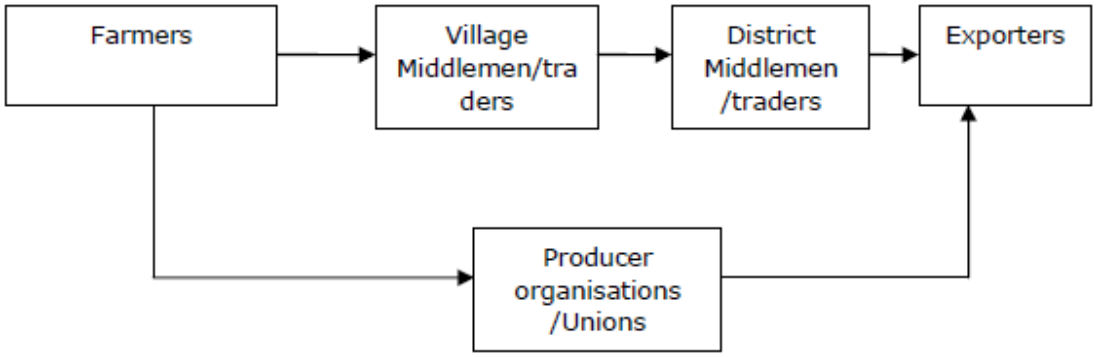


173. Considering the weaknesses of the current way cocoa farmers in Togo are organized and the fact that farmer associations are not present in every village where cocoa is being produced, we propose to start organic cocoa production with autonomous farmers. These farmers can be informally grouped (for example through training through the establishment of farmer field schools). A formalisation of their organization structure and the role they would like to play (for example marketing, warehousing, transport, training, distribution centre of organic inputs, distribution of premium) can be decided by the farmers themselves, after a period of experimentation with organic practices.

4.5 A Value chain analysis

4.5.1 The cocoa value chain

Figure 2.8 The cocoa value chain in Togo



Cocoa farmers

174. The fluctuation of cocoa production between 1996/97 and 2004/05 is illustrated in the following table. On the basis of the assumption that outings by smuggling are negligible, the export quantities are considered as current national production.

Producer organisations

175. Around one third of the farmers is organised in a producer group association (see paragraph above). These groups are organised in unions, which are member of FUPROCAT.

Middlemen, traders and exporters

176. Producers that are member of a farmer association, representing around one third of all farmers, sell their products to the committee of their associations. Loyalty of farmers to these associations is far from guaranteed and depends highly on the ability to pay promptly. When farmers need cash, they sell directly to any buyer.

177. The rest of the farmers (two third) sells to private buyers. These private (small) buyers are often located in a village, and work for larger buying companies. Examples are OLAM, Akanava, Oisis, Indiana Boys and Dolphin. Registered exporters are Banamba, el Nasr, Yentoumi, Olam, Sopat and Sonepro.

178. The transport is mainly organised by the local buyers who take the products from the villages to main depots of the buying companies.

Table 2.6 Value shares of actors in the conventional cocoa chain in Togo

	Value share of actors in the **conventional** chain				**USD/Kg**		
	Chain actor	Variable cost	Revenue	Gross income	Added value	Gross margin	Value share
			Selling price/Kg	Revenue cost	Revenue previous		Added value
					Actor's revenue	Gross income	Retail price
						*100/ revenue	
1. Marketing through **middle** men	Farmer	0.91	2.44	1.53	2.44	63%	75%
	Middleman	2.46	2.53	0.06	0.09	2%	3%
	Exporter	2.62	3.27	0.65	0.74	20%	23%
Total					**3.27**	**85%**	**100%**
2. Marketing through **cooperative**	Farmer	0.91	2.48	1.57	2.48	63%	76%
	Cooperative	2.57	2.57	0	0.09	0%	3%
	Exporter	2.66	3.27	0.61	0.70	19%	21%
Total					**3.27**	**82%**	**100%**

179. Marketing through a farmer organization is far more favourable for individual farmers than marketing through middlemen. Nevertheless, the majority of farmers sell to these middlemen, mainly because they are in need for fast cash.

Institutional environment

180. In August 2008, the Togolese Ministry on Trade and SMEs, together with the Ministry of Agriculture and Fisheries shared their vision on a national strategy to revive the coffee and cocoa chains in Togo. This is a response to the reforms that were introduced in the 1990s, and the impact of these reforms on production levels, volume of production, quality of the produce and applied technology. The objective of the strategy is to revive the cocoa and coffee sector in the country. Important focus points are the strengthening of institutional support to the sectors, higher levels of productivity, better quality of the produce, safeguarding the environment and support research activities.

181. As part of the feasibility study, we shared our project with governmental representatives. This led to the request to write a chapter on opportunities for organic cocoa in Togo. If the prospects for organic cocoa look good, the follow-up of this project will be embedded in the national cocoa strategy.

182. Since 1996 chain support comes from new actors:

- ACDR: *Association de Conseils et d'Appuis pour le Developpement Rural*
- APAF: *Association pour la Promotion de l'agro foresterie*
- ITRA/CRAF: *La Recherche Agronomique*

Infrastructure

183. The infrastructure in and around Kpalime is weak. Some villages have no official roads, only unpaved paths (for example Kpeta). All villages have primary schools and health post, but the quality of these facilities is often poor. Secondary schools and hospitals are often far from these villages and it is hard to reach these locations as there are only limited means of transport. There is also scarcity of clean water.

4.5.2 Feasibility study for organic cocoa in Togo

184. In the feasibility calculation, all costs involved in the cocoa production and processing have been included. Due to relatively unfavourable logistics, the costs involved in certification are significantly higher in Togo, compared to Cameroon. The number of involved farmers in Togo was 350. The costs for certification presented in Table 2.7 are included in the Table 2.8 under ICS costs (internal costs) and organic certification Ecocert (external).

Table 2.7 Certification costs Togo in USD

INTERNAL	TOGO
Field staff	1,704
Transport	618
External	
Organic certification	5,618
ICS cost	1,873
Total cost (64 tonne)	9,813 (153 USD per tonne)
	6,6% of FoB

185. Other important differences, comparing Togo with Cameroon, is the relatively poor yield of Togolese farmers, the small size of the farms and the lower price paid to farmers. There is also a difference in number of farmers that is committed to converting their conventional farm to a certified organic farm. At the time, from the survey, the number of farmers committed to the project was 350. This number can however easily increase if the results of this study are being shared with other farmers in the villages, and if other actors in the chain start to provide support to the project.

Table 2.8 Feasibility study in Togo

Cost-Price FOB Kpalime	
Nr Farmers	350
Hectares per farmers	1.2
Hectares cocoa	420
Yield per hectare	250
Total yield	105,000
Capture rate	66%
Cocoa captured kgs	69,300
Cocoa captured tonnes	69
Grading losses	7%
Cocoa exported	64
Kgs per bag	70
# of bags	921
# of containers	3.3

Rates	
CFA/USD (Nov 2008)	534
USD/Euro (Nov 2008)	1.26
# of cocoa bags per container	280

Cocoa Price (FOB)		
	CFA/Kg	USD/tonne
Farmer price (organic)	926	1,734
FOB price		2,312
Farm gate % of FOB (USD)		75.0
Farm gate (conventional)	805	

Inputs		Units	Quantity	Unit Cost (CFA)	Total Cost (CFA)	Total Cost (USD)	Cost per mt (USD)
Jute bags		bags	990	400	396,000	742	
Equipment		lump sum	420	833	350,000	655	
Hired labour costs/day		Workers	5	1,500	7,500	14	
Total Input Cost					**753,500**	**1,411**	**22**
Conventional Price		CFA/kg	69,300	805	55,786,500	104,469	
Organic Premium Quality premium				15%	8,367,975	15,670	
Cocoa farmer price				**926**	**64,154,475**	**120,139**	**1,864**
Transport to warehouse village		bags	990	1,295	1,282,050	2,401	

Inputs		Units	Quantity	Unit Cost (CFA)	Total Cost (CFA)	Total Cost (USD)	Cost per mt (USD)
Transport to warehouse Lome		tonnes	64	10,000	644,490	1207	
Control DQM		tonnes	64	1,000	64,449	121	
Grading (Quality Superieur)		bags	990	225	222,750	417	
Weighing		tonnes	64	250	16,112	30	
Loading		tonnes	64	650	41,892	78	
Overhead union		tonnes	64	4,500	290,021	542	
Export bags		bags	921	550	506,385	948	
Taxes		bags	921	350	322,245	603	
Other costs			990	140	138,600	260	
Field staff		technician	13	70,000	910,000	1,704	
Motorbike running cost		lump	11	30,000	330,000	618	
Union bio					**4,768,994**	**8,931**	**139**
ICS costs		lump			1,000,000	1,873	
Organic Certification Ecocert		lump			3,000,000	5,618	
Certification					**4,000,000**	**8,000**	**116**
Contribution CCFCC		tonnes	64	8,000	512,000	966	
Transit documents and customs		tonnes	64	12,000	768,000	1,448	
Grading and analysing (2x)		Tonnes	64	2,000	128,000	241	
Warehousing		tonnes	64	13,154	847,762	1,588	
Loading Comission *exporteur* Taxes Certificates Fobbing Transfer DIT Handling		tonnes tonnes tonnes tonnes tonnes tonnes tonnes	64 64 64 64 64 64 64	5,929 8,000 250 150	382,118 512,000 16,000 9,600 0 0 0	716 966 30 18	
Exporter and port handling					**3,175.480**	**5,973**	**93**

Inputs		Units	Quantity	Unit Cost (CFA)	Total Cost (CFA)	Total Cost (USD)	Cost per mt (USD)
Cost FOB Lome					**76,865,958**	**143,944**	
Cost FOB per tonne							**2,233**
Sales price FOB							2,050
Organic Premium							350
Total FOB price							**2,400**
Profit per tonne						10,703	166
Margin on cost							7,4%

186. In the calculations in table 4.5 in situation A, the margin on costs is 7,4%. This is based on the situation in February 2008. This is a small margin. Earlier in this document, we highlighted that the premium for organic cocoa production is subject to change. In February 2008, organic cocoa sales took place at conventional prices. At the time of writing, the premium has increased. One possible situation is that there is no export premium at all while the 15% for the farmer will be maintained (situation B in table 2.9). The margin drops immediately to -8,2%. Organic cocoa production is not feasible under these conditions. In case the farmers are not paid a premium, the margin becomes 3%. It is low but still positive. The cooperative could thus argue with its farmers that the premium that they receive should be paid once the export price is set. It should preferably work with advance contracts.

187. As presented in Table 2.9, the margin for the organic cocoa project improves to 11.5% when yields increase and to 13% when the number of farmers increases. The increase in capture rate is also a way of obtaining higher volumes of cocoa. That is why there should be a premium paid to the farmers, to avoid selling them to other buyers.

Table 2.9 Variables in feasibility (sensitivity analysis) for an exporter and/or a cooperative exporting directly

SITUATION	A.	B.	C.	D.	E.
	Actual situation	**No premiums**	**Improved yields**	**Improved yield and capture rates**	**Improved yield, capture rates and # of farmers**
Premium	350	**0**	350	350	350
Margin	7.4%	-8.2%	11.5%	12%	13%
Yield	250	250	**500**	**500**	**500**
Capture rate	66%	66%	66%	**75%**	**75%**
Number of farmers	350	350	350	350	**500**

5 Recommendations and Conclusions

188. The study revealed that the conversion from conventional cocoa (organic by default) to certified organic cocoa production in Cameroon and Togo is not only feasible but also can be significantly profitable, but in both countries under different conditions. In Cameroon, it is possible to build upon existing multistakeholder partnerships, such as the UPCOCOA project and the Sustainable Tree Crop Programme (STCP). In Togo, more emphasis has to be put on strengthening of the supply chain and building new partnerships. ITRA already expressed its interest to become involved in a follow-up. Especially in Togo the availability of improved planting material is a problem. In both countries, pests and diseases are a major bottleneck.

189. The feasibility and profitability of organic cocoa production depends on a number of variables. Of which the most important are the number of farmers involved, their yields per hectare, and their loyalty with respect to selling their cocoa to their organizations. Premiums are also important. The study revealed two important challenges:

- First, due to its origin, prices for West African cocoa on the world market are relatively high. Organic cocoa coming from this region may price itself out the market when the premiums for certified organic cocoa are too high. However, premiums are generally seen as the main incentive for cocoa farmers to shift from producing conventional cocoa to the production of certified organic cocoa. Furthermore, fetching an attractive premium depends largely on market factors that are beyond the direct control of farmers. Therefore, the advantages of organic cocoa production should preferably not be limited to obtaining a premium for organic, but should include other tangible economic and social gains. For example, it should contribute to higher yields, more stable and direct trade relations, and prompt payment.

- Second, the occurrence of pests and diseases in both countries is a major bottleneck for producing high volumes of cocoa beans. In Cameroon, myrid bugs, especially Sahlbergella singularis and the pathogen Phytophthora megakarya, the cause of black pod, are the main problems. In Togo, cocoa also suffers from losses due to the myrid bug Distantiella theobroma, the pathogen P. palmivora, and Cocoa Swollen Shoot Virus (CSSV). In order to make organic cocoa production a feasible option for farmers, increased on-farm knowledge of biological ways of dealing with pests and diseases is required, as well as improved access to alternative agricultural inputs.

190. Biological ways of pest management in cocoa farming have been a major area of research, involving institutes and companies such as IRAD, ITRA, Masterfoods, USDA and CIRAD, already for a number of years. There have been successful experiments with for example Trichoderma to combat the Black Pod disease. Nevertheless, such alternative inputs are not yet accessible to farmers and have not been integrated in the training curricula provided to farmers (e.g. integrated pest management –IPM strategies in farmer field schools). So far, the effectiveness of alternative inputs has been tested in isolated experimental plots, not taking into account socio-economic parameters for success at farmers' level. Successful promotion of organic cocoa production at farmers' level requires on-farm research and on-farm training into the effectiveness of biological ways of pest management in relation to socioeconomic parameters.

191. As a follow-up we recommend to introduce an integrated organic cocoa package with a focus on learning at all levels of the value chain system, from local farmers to international companies and research networks. The uniqueness of the "package" is the combination of technical research and on-farm learning with socio-economic research.

192. Different partners, varying from research institutes (CIRAD/IRAD) to private companies (Mars) and multi-stakeholder initiatives (STCP, UPCOCOA project), have already expressed their genuine interest in the follow-up project and will be a partner. In addition, the Ministry of Agriculture, Nature and Food Quality of The Netherlands has indicated to appreciate the project as an initiative to enhance the production and trade of sustainable cocoa, and to promote opportunities for and practical experience with organic cocoa farming in Africa. The same goes for the Dutch Rabobank. Both consider active participation in the follow-up, if the project proposal is approved. Also local (public) partners have expressed their support to the initiative and their interest to participate in the follow-up, such as the Institute Togolais de Recherche Agricole (ITRA) in Togo.

193. This interest from established sector organizations confirms our conclusion that there is a critical knowledge gap on the overall socio-economic and technical effectiveness of biological ways of cocoa production. To address the knowledge gaps of farmers about the effectiveness of biological ways of pests management, KIT, in close collaboration with the project partners and other stakeholders,

formulated a follow-up action plan entitled “Organic Cocoa Package: an Integrated Approach towards Organic Cocoa Production in West Africa” (**seen Annex 2**). This follow-up action plan builds upon the outcomes of the feasibility study, which demonstrated that further research and on-farm training is required for organic cocoa production to be profitable for smallholding farmers and their communities. The proposed action plan focuses on developing and disseminating new ways of biological pest management at all levels of the value chain. This participatory approach will allow all stakeholders in the value chain, in particular smallholding farmers, to be directly involved in the formulation of new ways of biological controls based on on-farm experiences gained during this process. It is expected that the combination of technical research, on-farm learning and socio-economic research will improve the income and livelihood of smallholding organic cocoa farmers in Cameroon and Togo.

Annex 1. Cost Comparison: Traditional, Conventional, Organic and hi-tech Cocoa Production Systems for Ghana (per acre in US$)

Traditional Practices		Conventional Practices		Organic Practices		Hi Input (Hi-tec)	
Input	**Cost (USD)**	**Input**	**Cost (USD)**	**Input**	**Cost (USD)**	**Input**	**Cost (USD)**
Fertilizer		Fertilizer - 2 bags	29.46	Poultry manure	43.20	Fertilizer - 4 bags	58.92
Insecticide		Insecticide	7.33	Spot spray neem	11.00	Insecticide	22.00
Fungicide		Fungicide	3.84	Cu fungicide	1.92	Fungicide	18.36
Labour Cost		**Labour Cost**		**Labour Cost**		**Labour Cost**	
Fertilizer application		Fertilizer application	6.00	Fertilizer application	10.00	Fertilizer application	8.00
Insecticide application		Insecticide application	6.00	Insecticide application	10.00	Insecticide application	18.00
Fungicide application		Fungicide application	6.00	Fungicide application	6.00	Fungicide application	30.00
Weeding/mulching	2.00	Weeding/mulching	2.00	Weeding/mulching	4.00	Weeding/mulching	6.00
Fixed Costs		**Fixed Costs**		**Fixed Costs**		**Fixed Costs**	
Protective clothing		Protective clothing	5.00	Protective clothing	5.00	Protective clothing	30.00
				External certification	8.00		
				ICS/training	6.00	FFS maintenance	10.00
				Replanting	1.80	Replanting	4.50
Total Cost	2.00	**Total Cost**	65.63	**Total Cost**	106.92	**Total Cost**	205.78
Revenue		**Revenue**		**Revenue**		**Revenue**	
Yield (bags/acre)	1.5	Yield (bags/acre)	3.00	Yield (bags/acre)	5.00	Yield (bags/acre)	12.00
Standard price per 63 kg bag	56.30	Standard price per 63 kg bag	56.3	Standard price per 63 kg bag	56.30	Standard price per 63 kg bag	56.30
				Farm gate premium (10%)	5.60		
				Export premium	7.40		
				Fair trade premium	9.45		
				Organic price per bag	78.75		
Gross Income	84.45	Gross Income	168.90	Gross Income	393.75	Gross Income	675.60
Costs	2.00	Costs	65.63	Costs	106.92	Costs	205.78
Net Income	**82.45**	**Net Income**	**103.27**	**Net Income**	**286.83**	**Net Income**	**469.82**

Annex 2. Project Profile

PROJECT PROFILE

ORGANIC COCOA PACKAGE: AN INTEGRATED APPROACH TOWARDS ORGANIC COCOA PRODUCTION IN WEST AFRICA

March 2010

I. Project Background and Commodity Strategy

1. In early 2008, the prospects of the organic market were very favourable. First, organic cocoa production obtained a significant price premium. Second, the demand for organic cocoa was growing. In response to the compelling market potential, an ICCO/CFC-funded feasibility study was conducted to assess the potential of organic cocoa in West Africa, building as much as possible upon existing initiatives. The study focused on two countries in West Africa, Cameroon and Togo. The objective of the study was to identify the best production areas, producer organizations and support activities for boosting organic cocoa production in both countries.

2. Key-questions at the beginning of the study were: a) under what conditions organic cocoa production is an economic opportunity for smallholders?; b) is the premium sufficient to cover additional costs (i.e. certification)?; c) what kinds of incentives are needed to stimulate farmers to convert from conventional cocoa production (or 'organic by default') to certified organic cocoa production?; d) is the institutional environment in place that supports this shift?; e) are there serious bottlenecks that prevent farmers to become profitably involved in organic cocoa production?

3. The market for organic cocoa production changed over the last few years. Since the beginning of 2007 the cost of conventional cocoa has more than doubled. This, together with stagnation in demand for organic cocoa, made organic cocoa from African suppliers (which belong to the single origin group 1) relatively expensive. Also the organic premium declined, and for some time even dropped to zero. Consequently, it became clear that the feasibility of organic cocoa production in West Africa cannot depend only on an organic premium. Despite the changes it also was clear that organic cocoa production remains important both as market opportunity for West African producers, for its intrinsic environmental value and as engine for sustainable cocoa production.

II. Building on the Outcome of the Feasibility Study

4. The study revealed that organic cocoa production in Cameroon and Togo is feasible, but in both countries under different conditions. In Cameroon, it is possible to build upon existing multi-stakeholder partnerships, such as the UPCOCOA project and the Sustainable Tree Crop Programme (STCP). In Togo, more emphasis has to be put on strengthening of the supply chain and building new partnerships. Especially in Togo the availability of improved planting material is a problem. In both countries, pests and diseases are a major bottleneck.

5. In Cameroon, myrid bugs, especially Sahlbergella singularis and the pathogen Phytophthora megakarya, the cause of Black Pod, are the main problems. In Togo, cocoa also suffers from losses due to the myrid bug Distantiella theobroma, the pathogen P. palmivora, and Cocoa Swollen Shoot Virus (CSSV). In order to make organic cocoa production a feasible option for farmers, increased on-farm knowledge of biological ways of controlling pests and diseases is required, as well as improved access to alternative agricultural inputs. Another crucial prerequisite for profitability is to increase farmers' productivity levels.

6. The occurrence of pests and diseases in both countries is a major bottleneck for producing high volumes of cocoa beans. Successful promotion of organic cocoa production at farmers' level requires on-farm research and on-farm training into the effectiveness of biological ways of pest management in relation to socio-economic parameters. The study also revealed that the feasibility of organic cocoa production depends partly on the size of a premium, but also on a number of other variables, of which

the most important are the number of farmers involved, their yields per hectare, and their loyalty with respect to selling their cocoa to their organizations.

7. This proposal builds upon the outcomes of the feasibility study by introducing an integrated organic cocoa package, which will benefit organic cocoa producers. Besides the premium, cocoa farmers will benefit from training and on-farm learning, helping them to increase their productivity levels. Assistance with the biological control of pests and diseases, soil fertilization, combined with improved planting material helps farmers to convert from conventional (or organic by default) to certified organic cocoa production. Strengthening the organizational capacity and an institutional supportive environment are other components. The unique feature of the package is that it is truly participatory and focuses on learning at all levels of the value chain system, from local farmers to international companies and research networks. The uniqueness of the 'package' is also the combination of technical research and on-farm learning with socio-economic research.

8. The main partners in this project are the Dutch Royal Tropical Insitute (KIT), AgroEco/Louis Bolk Institute and Tradin. The intention has always been to build up as much as possible on existing experiences and initiatives. We have formalized our partnerships with STCP and the cooperatives that participated in the UPCOCOA project. We have established a new partnership with CIRAD/IRAD, which will play an active role in the project. Rabobank, Mars, ITRA and the Dutch Ministry of Agriculture are potential partners.

III. Project Objectives and Rationale

OBJECTIVE

9. The integrated organic cocoa package is expected to fill the knowledge gap on the overall socio-economic and technical effectiveness of biological ways of cocoa production. By filling that gap, this proposal will enable a significant boost in value-added organic cocoa production, thereby benefiting the smallholder cocoa farmers as well as the other actors in the West-African cocoa sector. Training and making available alternative inputs and improved planting material increase the productivity of participating farmers, which is an essential component of the package.

10. The participatory approach will contribute to the empowerment of farmers participating in this project, resulting in a greater sense of ownership. This ownership is necessary for the long-term feasibility of organic cocoa production. It is expected that in the first stage about 1600 farmers will participate in the project, coming both from Cameroon and Togo.

11. In Cameroon, we have selected three sites, one located in the South West region (department of Meme) and two in the centre region (the departments of Mbam et Inoubou and Lekie). In these sites, cocoa is under different parasitic pressure, which makes it possible to evaluate the possibilities for organic cocoa under different conditions.

12. In the southwest, the villages Konye and Mamfe are identified as zones with less pesticide application; 90% of the interviewed farmers attributed the lower use of pesticides to the effect of training from Farmers' Field School (FFSs), provided by the Sustainable Tree Crop Programme (STCP). Respondents in Konye were all members of the cooperative KONAFCOOP, which is in the process of obtaining Fair-trade certification. In Mamfe, interviewed farmers were members of a

cooperative called MACEFCOOP, which is involved in fair trade cocoa production. Members of MACECOOP have also learned some organic practices from organic coffee farmers in the locality.

13. Within the Centre Region there is high application of fungicides and pesticides in the villages of Metet, Mengang, Akoemen, Nfou. However, the majority of the farmers in Ngumou, Ngomezap, Ayos and Okola declared that they use little pesticides to treat their farms. Approximately 10 % declared they use no pesticides at all to treat their farm. They attribute the reduced use of pesticide to the fact that they have benefited from training acquired from Farmers Field Schools (FFS); which exist in almost all the cooperatives surveyed in the Centre region, with different results between cooperatives.

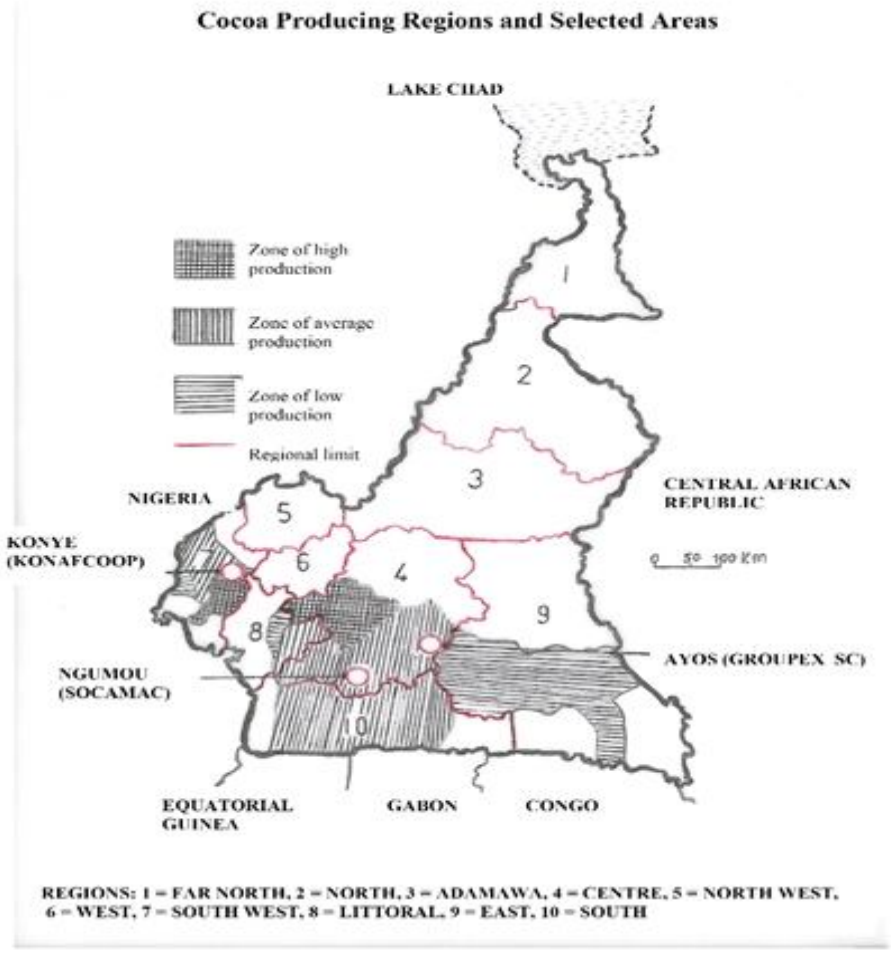
14. In Cameroon, the program will build on the STCP and the 'UPCOCOA' project. Both are multi-stakeholder partnerships focused on improving the sustainability of cocoa production. So far, three farmer cooperatives have been pre-selected that operate under this project: Konye Area Farmers Cooperative Society (KONAFCOOP) in the southwest, Société Cooperative d'agriculteur de la Mefou et Akono (SOCAMAC) and Société Cooperative des Exploitants Agricole (GROUPEX SC) in the Centre Region. Together these cooperatives have about 800 members. The criteria on which the cooperatives were selected are visualized in the next table.

Table 1. Assessment of farmers' organizations

Criteria	KONAFCOOP	SOCAMAC	GROUPEX
Cocoa Production	500 tonnes (169 members)	100 tonnes (235 members)	135 (348 members)
Application of pesticides	Little/no pesticide	Little/no pesticide	Little/no pesticide
Training	Farmers Field Schools	Farmer Field School	Favourable
Climate conditions	Less favourable (high rainfall)	Favourable	Favourable
Logistics and infrastructure	Well-equipped office, but dirty roads	Well-equipped office, paved roads	Well-equipped office, paved roads
Presence of strong partners	STCP	STCP/UPCOCOA	IRAD/CIRAD

15. The following map illustrates the cocoa producing areas and the selected sites.

Map 1. Cocoa producing areas and selected sites in Cameroon



Source: Modified from NCCB, 2008

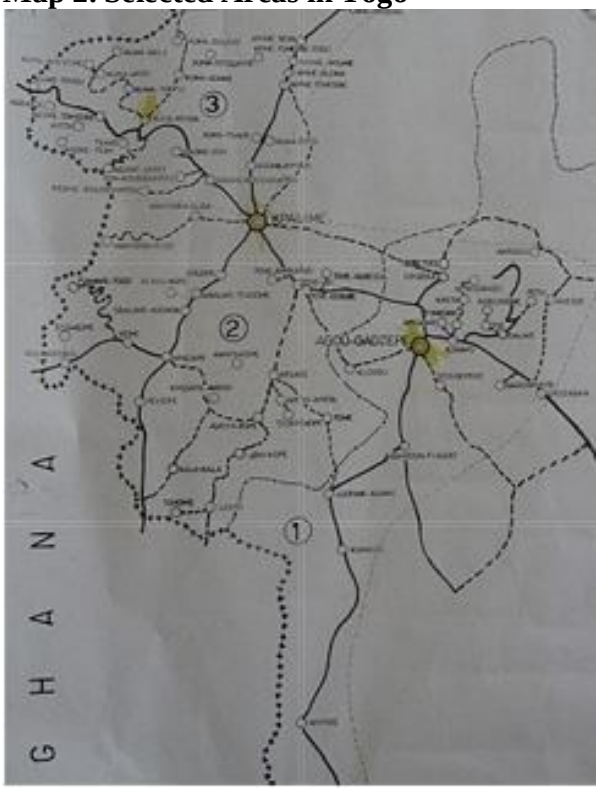
The map shows the main cocoa producing basins (South West, Centre, South, East and Littoral and the selected localities (Konye, Ngumou, Ayos) for the study

16. In Togo, we have selected the "plateaux region", as the main study and intervention site. Around Kloto, CSSV, myrids and P. palmivora are the main parasitic constraints. In order to allow for an evaluation of possibilities for organic cocoa under different parasitic pressure, in a later stage some villages in the Litimé region can be selected, where Black Pod is mainly caused by P. megakarya.

17. In Togo, no suitable farmer groups have been identified. One third of Togolese farmers are organized in farmer associations. These associations vary in strength and face problems with funding, disloyal members and poor management. Therefore, instead of working with already established farmer groups, we have selected a number of cocoa producing villages. In these 12 villages, located around Kloto, 350 farmers have expressed their interest in organic cocoa farming and their willingness to participate in an organic cocoa project. In these villages the concept of FFS will be

introduced. These schools initially will function as an informal farmer organization. In a later stage, farmers can decide to formalize their cooperation.

Map 2. Selected Areas in Togo



RATIONALE

18. The integrated organic cocoa package is an integrated programme that addresses four intervention points: the number of farmers, productivity levels, default rate and price premiums. The outcomes of the feasibility study made it clear that these 4 variables determine, to a large extent, the feasibility of organic cocoa production in the two countries. This is the reason why we propose to invest in good relations between buyers and cocoa producers, training, services, prompt payment, availability of affordable alternative inputs, etc.

19. The package is build around two dimensions, and generates both benefits for producers as well as for consumers:

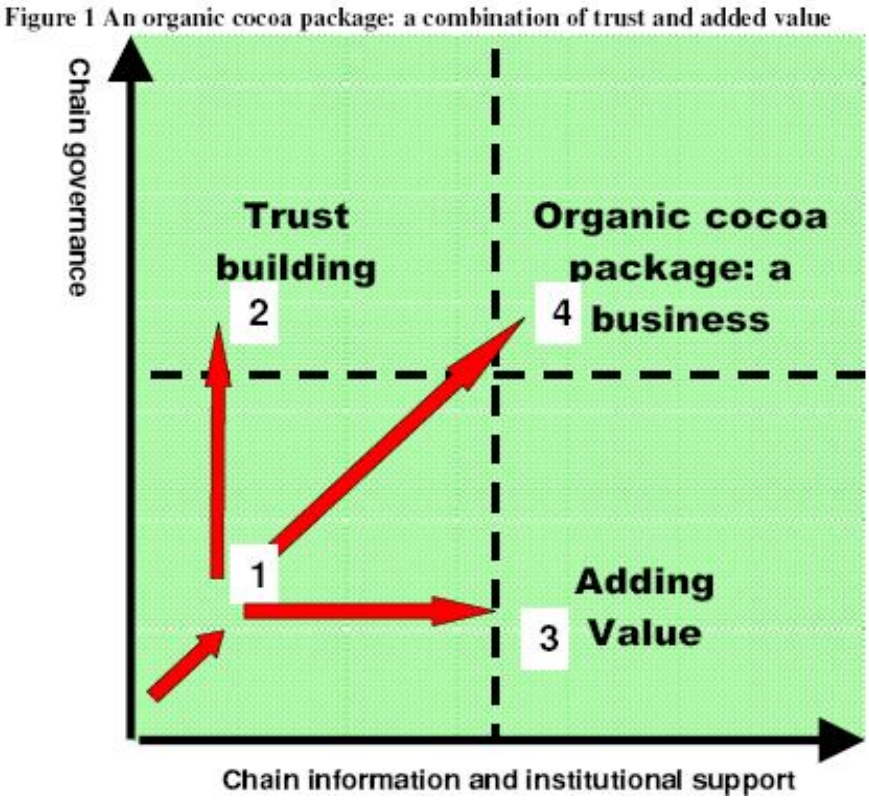
Chain Governance - Building relations and trust

- Building upon existing initiatives/partnerships
- Strengthening of farmer organization
- Stable relation with buyers
- Traceability
- Prompt payment

Chain Information and Support – Adding value

- Training (productivity, quality, organic practices)
- Availability and distribution of organic inputs at competitive prices
- Market information and (more) direct trading relations
- Premiums

Figure 1. An organic cocoa package: a combination of trust and added value



IV. PROJECT COMPONENTS

20. There are broad initiatives taking place in both countries which involve different partners. We propose a follow-up project, to be implemented for a period of three years. The main components and activities of this project are described as follows:

Component I. Innovative forms of value chain cooperation

21. The feasibility of organic cocoa production depends not only on the productivity of the cocoa farmers, but also on the organization of the marketing chain. Cocoa farmers benefit from premiums, a stable income and a direct relation with their buyers. This requires continuous market research and dissemination of market information to local stakeholders. It also demands the organization of sustainable marketing channels for organic cocoa.

22. The feasibility of organic cocoa production also depends on a number of services and institutional support. Alternative inputs and improved planting material have to be made accessible to farmers. A

quality control system has to be established at the local buyer level, and the system has to be traceable. A system of pre-finance has to be established, enabling prompt payment to farmers. Also, good relationships have to be maintained with governmental bodies to ensure the cocoa package is supported by relevant authorities and, if necessary, enforce new production and marketing standards.

23. The ***overall*** **objective** of this component is to increase the loyalty of farmers to the organic cocoa programme, increase its effectiveness and promote improved and transparent trade relations. Involvement of key stakeholders from the start will contribute to the success of the programme. Cooperation among key stakeholders in the value chain is necessary to help farmers become certified organic cocoa producers, with a secure outcome.

Activities

- Organizational support
- Improve access to market information
- Pre-finance
- ICS and traceability system
- Making alternative inputs and improved planting material available
- Investments will take place in post harvest facilities like drying, fermentation and storage facilities.
- Multi-stakeholder meetings, with project partners, farmer organizations, government and other relevant actors.

Outputs

- Strong and reliable organic cocoa farming groups
- A system of pre-finance
- Certification of organic cocoa production
- Good quality cocoa (well dried and fermented)

Component II. On-farm training and technical support

24. On-farm training on organic cocoa production (within IPM strategies of Farmer Field School curricula) is key. This training goes hand in hand with technical support services offering cocoa farmers integrated technology solutions for biological control of pests and diseases and soil fertilization, combined with the provision of improved planting material.

25. The ***overall objective*** of this component is to establish integrated pest management packages based on scientific knowledge and farmer experience. The specific objective is to make alternative inputs and planting material available at affordable prices to farmers.

Activities

- Develop/adapt an organic module for Farmers' Field School (FFS) in West Africa.
- Sensitize members of selected groups/villages/farmers.

- Final selection of farmers that participate in FFS in Cameroon and in Togo, with emphasis on equal opportunities for male and female farmers. These farmers become trainer of trainers.
- Set up of new FFS. After having received their training farmers will set up new FFS and train new groups of farmers.
- Train local supervisors/monitoring team/ (together the 'local support team') for the FFS, guaranteeing the continuity of (the elements of) the training.
- Additional training: quality control, marketing, leadership.

Outputs

- Updated organic FFS module
- 60 ToT trained
- 1600 farmers trained

Component III. On farm research

26. The uniqueness of this project is combining on-farm technical research with socio-economic research. On-farm research requires two new base-line studies in both countries: a) socio-economic baseline study on plots of the selected farmers and; b) technical base-line study on pest and diseases and soil fertility. The project is also unique because it focuses on the application of available organic inputs in 'real life'.

27. There is a need to establish demonstration plots were all these measures are put into place, where there is learning, monitoring, and sharing of results with a wider public. Some of the elements of the organic package are highly relevant to cocoa production such as control of Black Pod without the use of fungicides (residues). Efforts to include payments for environmental services in existing organic cocoa supply chains are interesting for a much larger scale. As such, the organic cocoa projects can provide experiences which are of great value for a wider audience.

28. The ***overall objective*** of this component is to improve critical knowledge gaps of farmers on the effectiveness of biological ways of pest management.

Activities

- On-farm research into biological control of pests and diseases, use of organic fertilizers and socio-economic parameters for success (making use of demonstration plots);
- Two base line studies on (a) technical on-farm conditions; and (b) socio-economic conditions;
- Back up studies of relevant literature regarding Cameroon cocoa, one technical: soils, fertility, pests & diseases, and one on socio-economics (earlier research in cocoa).
- Inventories of the availability and quality of locally available fertilizer/composting materials.
- Prepare selected sites (for example with pheromone traps, tree markers, etc)

- Laboratory: mass production of bio-control agents, plant extracts, and nutrient balance is constituted, using existing model like NICDEA, resulting in options for long term soil fertility. Soil and fertilizer material tests are done.
- Establishment of a laboratory in Togo (budgeted for second year)
- Monitoring and evaluation of socio-economic impacts and the impacts of biological ways of pest management, and their interaction, in selected areas.
- Farmer exchange
- Field officers exchange
- Documentation and communication of the results, for wider learning. Study visits to Ghana and Ivory Coast are budgeted for the second year.

Outputs

- Knowledge on effectiveness of biological ways of pest management, both in terms of technical/environmental impact and socio-economic impact.
- Increase in yields
- Increase in farmer incomes
- Lessons for up-scaling in Cameroon and Togo

Component IV. Monitoring and evaluation (M&E)

29. Monitoring and evaluation are key components of the cocoa package. It enables learning from this unique package and provides lessons which are available for up-scaling. Because the integrated organic cocoa package has two components, we make a distinction between a technical M&E and a socio-economic assessment.

30. The ***overall objectives*** of this component are to learn, up-scale and report experiences with the integrated organic cocoa package.

Activities involved in technical M&E:

- Efficacy of phytosanitation, the removal of diseased pods in weekly, fortnightly or monthly intervals will be evaluated
- The effectiveness of biological control of *Phytophthora megakarya* using *Trichoderma asperellum* PR11, applied with side lever knapsack sprayers equipped with pressure regulators, will be validated under different farmer field conditions and parasitic pressure
- The effectiveness of combination treatments using *T. asperellum PR11* and copper based fungicides (still allowed under organic cocoa farming) will be validated under different farmer field conditions
- With farmers the conditions for mirid outbreaks are studied, leading to local early warning on the emergence of the insects and spot treatment of the infested sites.
- Biological control of mirids using the entomopathogen *Beauveria bassiana* will be tested under different farmer field conditions
- The effectiveness of pheromone traps for control of mirids will be evaluated and they can be used to identify the population period for more targeted natural pesticide (see below) applications.

- Plant extracts based on Neem (*Azidirachta indica*) as well as extracts from wild plants commonly found in cocoa plantations like *Guibourtia tessmannii*, *Erythrophleum ivorense* or the bark of *Ceiba pentandra* and *Pachyelasma tessmannii* will be tested for mirid control
- Organic fertilization (using cocoa pod husks but also recently presented organic fertilizers) and its impact on cocoa productivity will be evaluated
- Monitoring and evaluation of the organic cocoa package, looking at the impact on pests, diseases and soil fertility and at the socio-economic impact.

Main activities in the field of socio-economic evaluation:

- Observation of different change management techniques and evaluation of the adoption rates of these new techniques by the farmers
- Cost-benefit analysis of application of biological ways of pest management: ratios of different interventions and IPM packages will be compared with the ratios of conventional operated cocoa plantations.
- Comparisons on the basis of yield (kg dry cocoa beans ha-1) will be made with plots where conventional control practices will be carried out compared to plots where organic control practices will be carried out.
- With the introduction of the organic cocoa package it is studied whether farmers can be motivated to renovate their cocoa plantings, perhaps have larger fields, are willing to invest labour and have a better financial management, in order to create farms that have a future.

Outputs

- Reporting
- Up-scaling

V. TENTATIVE COST AND FINANCING

31. The total cost of this project is estimated at US $ 3.242.045. A summary of the budget is attached.

VI. IMPLEMENTATION ARRANGEMENT AND MANAGEMENT

32. The findings of the feasibility of the study and the action plan will be disseminated to regional stakeholders. The main activities are:

- Project launching workshop in Cameroon and Togo
- Confirmation of areas and farmer groups and bas-line studies
- Coordination meetings with partners

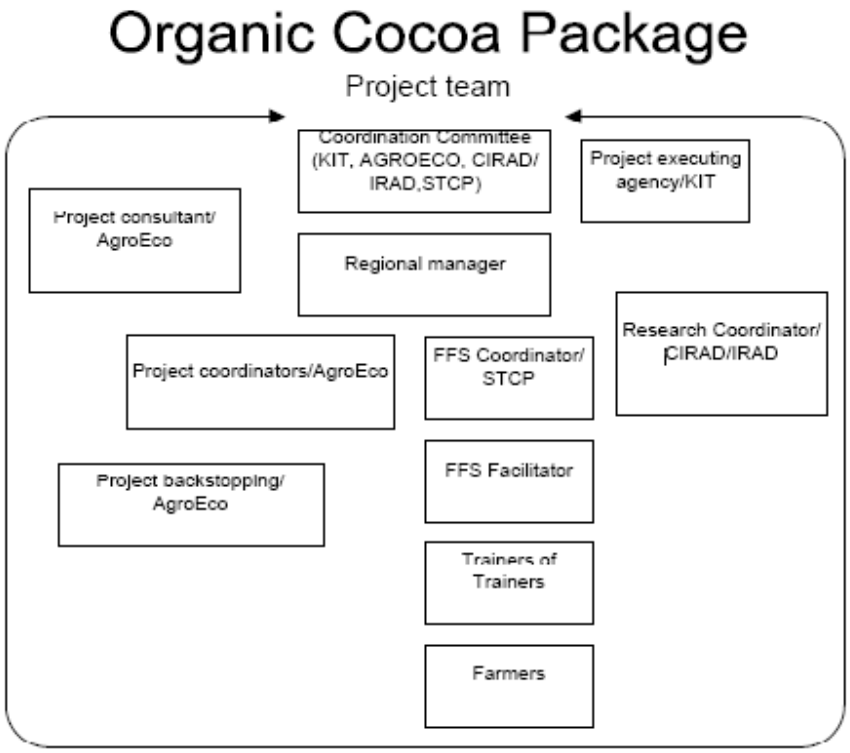
33. After the final approval, a steering committee will be established in which all the stakeholders are represented. All partners provide 1-2 representatives (important that there is a backup) for the committee. This committee will meet at least once a year, preferably around project locations, to check the progress and discuss the results. This committee will validate the reports and the analyses produced by the project.

34. KIT will be the Project Executing Agency (PEA). The committee will meet twice a year to discuss progress, plan activities and review quarterly country reports. The steering committee will be responsible for the overall execution of all project activities according to the project document and subsequent work plans and budgets. A regional project manager will be appointed. He/she will provide backstopping from Accra office for administration, reporting and visits to project sites once a year for M&E and evaluations of progress.

35. Furthermore, two project coordinators will be designated within the national executing agencies for day to day project management. Project coordinators will provide backstopping to cooperatives from their offices twice a month. The National Coordination will visit cooperatives every month, within a period of 6 days. Works in ICS development follows up on research. For the specific project components/activities, responsible actors will be appointed. The Project coordinators will maintain close consultation with the local partners in Togo and Cameroon, for dissemination of information on project activities, organizing and implementing regular coordination and planning meetings and workshops and preparation of periodic technical and financial reports. The project coordinators also work in close consultation with the Project Consultant (AgroEco).

36. The coordination of research activities and training falls under the responsibility of respectively STCP and CIRAD/IRAD (see figure 2).

Figure 2. Organic Cocoa Package Team



PARTNERS AND ROLES

37. The main partners in this project are the Dutch Royal Tropical Insitute (KIT), AgroEco/Louis Bolk Institute and Tradin. The intention has always been to build up as much as possible on existing experiences and initiatives. We have formalized our partnerships with STCP and the cooperatives that were involved in the UPCOCOA project. We have established a new partnership with CIRAD/IRAD. ITRA, Rabobank, Mars and the Dutch Ministry of Agriculture are optional partners.

Royal Tropical Institute (KIT)

38. KIT is a knowledge centre for international and intercultural cooperation, which engages closely with the private sector in finding market-based solutions to rural poverty.

Role

- Initiate learning trajectory
- Document outcomes of this project
- Supporting role in design and control on implementation of two base-line studies and impact assessments
- Leading role in coordination of project

Contact persons: Anna Laven (A.Laven@kit.nl)

AgroEco/Louis Bolk Institute

39. AgroEco is an international organization with more than 20 years of experience in setting up organic supply chains in developing countries. It has implemented organic cocoa projects in Latin America and East Africa in the past and currently operates in several organic cocoa projects in West and Central Africa. In 2009, AgroEco merged with the Louis Bolk Institute, the second largest organic agriculture research institute in Europe.

Role

- Training and support of local project leaders
- Awareness raising on meaning and added value of organic farming
- Provision of alternative inputs to farmers
- Assist in the implementation of base-line studies and impact assessments
- Identifying and training of field officers responsible for information, quality management, monitoring and evaluation
- Supporting farmer groups with organizing, preparing for group certification (Internal Control System) and marketing
- Coordination of projects locally, internal project communication

Contact persons: Bo van Elzakker (b.vanelzakker@louisbolk.org)

Tradin Organic Agriculture

40. Tradin Organic Agriculture is a world-leading trading company in organic commodities aimed at the food and bakery industry, based in Amsterdam. It is globally the largest independent trader in organic cocoa.

Role

- Market research and dissemination of market information
- Organization of marketing
- Building stable long-term trading relations

Contact person: Machiel Leliefeld (Machiel.Leliefeld@tradinorganic.com)

CIRAD/IRAD

41. CIRAD/IRAD is a France/Cameroon research centre that supports the development of integrated systems of production. Currently, there is research study on biological means of controlling disease and pests executed by experts researching on cocoa.

Role

- Development and validation of IPM compatibly with organic cocoa (together with ITRA)
- Development of an organic cocoa production curriculum within FFS (together with AgroEco/Louis Bolk Institute and STCP)
- Monitoring and evaluation of project

Contact person: Martijn ten Hoopen (tenhoopen@cirad.fr)

STCP

42. STCP is public-private partnership under the International Institute of Agricultural Research (IITA) providing stakeholders with an organizational frame work and policy environment. The aim is to maintain and increase productivity of high quality tree crop products, improve efficiency in the marketing chain, improve socio-economic situation of farmers and conserve biodiversity. It aims at achieving this through the farmer field schools (FFSs).

Role

- Development of an organic cocoa production curriculum within FFS (together with AgroEco/Louis Bolk Institute and CIRAD/IRAD)
- Train trainers of trainers on organic cocoa production in selected FFSs in Cameroon
- Introduce the FFS concept in Togo
- Monitoring and evaluation of FFSs
- Support local coordination of project in Cameroon

Contact persons: Jonas Mva Mva (j.mva@cgiar.org)

VII. BENEFICIARIES AND BENEFITS

43. The integrated organic cocoa package is expected to fill the knowledge gap on the overall socioeconomic and technical effectiveness of biological ways of cocoa production. By filling that gap, this project will enable a significant boost in value-added organic cocoa production, thereby benefiting smallholder cocoa farmers as well as the other actors in the West-African cocoa sector. Making available alternative inputs and improved planting material will increase the productivity of the participating farmers, which is an essential component of the package.

44. The participatory approach will contribute to the empowerment of farmers, participating in this project, and result in a sense of ownership. This ownership is necessary for the long-term feasibility of organic cocoa production.

45. It is expected that in the first stage about 1000 farmers will participate in the project. In Cameroon these farmers are members of the cooperatives KONAFCOOP, SOCAMAC, GROUPEX SC. In Togo individual farmers will benefit from involvement in organic cocoa production. These farmers will be trained on organic cocoa production by the STCP. Earlier experience in training farmers showed that application of IPM practices lowers the overall costs of cocoa production by 11%1 and as a result of training the overall volumes of production increase.

VIII. ISSUES AND FOLLOW-UP ACTIONS

46. After final approval for follow-up funding, the findings of the feasibility of the study and the action plan will be disseminated to the regional stakeholders. The main activities to be implemented are:

- Consolidation of the partnership and clear division of tasks
- Kick-off workshops in Cameroon and Togo
- Confirmation of areas and farmer groups and base-line studies
- Coordination meetings with partners

47. Once approved, this project will start work by identifying representatives from each cooperative (2 per cooperative), and a steering committee will meet to initiate project activities based on a timeframe agreed by all participants.

Cost of Conversion and Action Research

Component 1. Innovative forms of value chain cooperation								
Partners			**Cost PY1**	**Cost PY2**	**Cost PY3**	**Total**	**Own contribution**	**CFC Total**
I	**KIT**		$ 42.277	$ 42.892	$ 43.517	$ 128.686		$ 128.686
II	**AgroEco/LBI**		$ 233.602	$ 229.937	$ 194.873	$ 658.413	$ 141.423	$ 516.990
Grand total Component 1			$ 275.879	$ 272.830	$ 238.390	**$ 787.099**	**$ 141.423**	**$ 645.676**
Component 2. On-farm training and technical support services								
Partners		**Partners**	Cost PY1	Cost PY2	Cost PY3	Total		
II	**AgroEco/LBI**		$ 84.909	$ 114.258	$ 47.734	$ 246.902	$ 42.758	$ 204.144
IV	**STCP**		$ 54.816	$ 90.976	$ 382.928	$ 528.720	$ -	$ 528.720
Grand total Component 2			$ 139.725	$ 205.234	$ 430.662	**$ 775.622**	**$ 42.758**	**$ 732.864**
Component 3 and 4. On farm research & monitoring and evaluation								
Activities		**Partners**	Cost PY1	Cost PY2	Cost PY3	Total		
I	**KIT**		$ 129.200	$ 102.354	$ 103.871	$ 335.425	$ 77.166	$ 258.259
II	**AgroEco/LBI**		$ 117.327	$ 75.091	$ 84.357	$ 276.776	$ 46.603	$ 230.173
III	**CIRAD/IRAD**		$ 339.844	$ 288.281	$ 262.031	$ 890.156	$ 372.656	$ 517.500
V	**PEA**	**KIT**	$ 58.292	$ 58.786	$ 59.890	$ 176.967	$ -	$ 176.967
Grand total Component 3 and 4			$ 644.663	$ 524.512	$ 510.149	**$ 1.679.324**	**$ 496.425**	**$ 1.182.899**
Grand Total						**$ 3.242.045**	**$ 680.605**	**$ 2.561.440**
							27%	

Partners		Cost PY1	Cost PY2	Cost PY3	Total	Own contri	CFC Total
	KIT	$ 229.769	$ 204.032	$ 207.277	$ 641.079	$ 77.166	$ 563.913
	AGROEco/LBI	$ 435.838	$ 419.286	$ 326.965	$ 1.182.090	$ 230.783	$ 951.307
	STCP	$ 54.816	$ 90.976	$ 382.928	$ 528.720	$ -	$ 528.720
	CIRAD/IRAD	$ 339.844	$ 288.281	$ 262.031	$ 890.156	$ 372.656	$ 517.500
	Grand total	$ 1.060.267	$1.002.576	$ 1.179.202	**$ 3.242.045**	**$ 680.605**	**$ 2.561.440**