Market Transformation Strategy for Cocoa

September 2010

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1 INTRODUCTION

**BACP goals and geographic focus**

BACP is a program funded by the Global Environment Facility (GEF), the International Finance Corporation (IFC), the Japanese Government and other donors, and executed by the IFC. The ultimate goal of the program is to contribute to the preservation of global genetic, species, and ecosystem diversity within agricultural production landscapes by using market forces to transform selected commodity markets. BACP currently works in soy and palm oil and is now considering programming in cocoa and sugar. The market transformation strategy (MTS) forms the base document for any potential activities in the sector. BACP targets the four major market actors in each commodity: producers (supply), traders and purchasers (demand), financial institutions, and environmental and sector-specific NGO’s, all of which are represented in the relevant commodity roundtable. In addition, where policy-related barriers have been identified for example local government zoning issues relating to land use, the program will work with regulatory institutions and policy-makers in target countries to support a better enabling environment.

The BACP Grants Facility is the primary tool used to achieve the program’s goal. BACP grant funds will be used through a competitive process to support projects that contribute to the BACP goals through activities that fall under one or more of the following components:

- **Component I: Support activities for an enabling environment**, including dialogue between industry groups and governments, research and case studies to define and document the economic benefits of biodiversity, and capacity building of public institutions.

- **Component II: Support better production**, through industry-sponsored better management practices (BMPs) programs that study the linkages between BMPs and biodiversity conservation, test BMPs through practical application in the field, and train farmers in the use and importance of biodiversity-friendly practices.

- **Component III: Support increased demand for products with positive biodiversity impacts** through analyzing the various cocoa consumers, studying emerging patterns of preferential sourcing of biodiversity-friendly cocoa products, and increasing awareness amongst buyers and consumers through outreach and marketing in support of certification or verification schemes.

- **Component IV: Encourage the adaptation of financial services to support biodiversity-friendly practices** by farmers and all actors along the supply chain. This would include projects to support financial institutions in adapting their policies and procedures to encourage biodiversity-friendly supply chains and discourage others.
The BACP is premised on the need to work to conserve biodiversity outside protected areas and on the GEF’s associated emphasis on promoting the mainstreaming of biodiversity in production landscapes. By working on the supply- and demand-sides in parallel, BACP supports efforts that promote the production and demand of biodiversity-friendly cocoa.

**The Market Transformation Strategy for Cocoa**
The BACP Market Transformation Strategy for Cocoa defines the priorities along which BACP will allocate funds for cocoa projects in the first five years of implementation (a second five-year phase is expected to follow). Cocoa activities have come online following the establishment of MTS documents for palm oil and soy, to which have been allocated all but $900,000 of BACP grant funds. As sugarcane and cocoa must share the remaining funds, cocoa will have an initial allocation of $600,000 until such time when BACP grant funds for all four crops are reviewed in tandem and funds are realigned. BACP will initially target Côte d’Ivoire for cocoa, and to a lesser extent Ghana, Indonesia, and Brazil. Together, these countries represent more than 85% of global production of cocoa\(^1\) and also overlap with biodiversity hotspots, as indicated in the graphic below. In the course of the ten-year life of the Program, additional countries may be added in response to supply-side or demand-side market changes.


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**Report structure**
In Section II, we briefly discuss our understanding of the market and opportunities for biodiversity-friendly cocoa. In Section III, we address each of the four BACP components listed...
above, discuss areas of opportunity to promote the goals of BACP, review the short-term vs. long-term strategy and identify remaining information gaps. Following the main body of the report, we provide an extended “background” section that takes a more in-depth look at the biodiversity ramifications of cocoa production and explores the market context, looking at supply, demand, and rising trends.

2 UNDERSTANDING OF THE CONTEXT

The market and opportunities for biodiversity-friendly cocoa

A more detailed background section is presented in the annex, but here we summarize some key factors that drive BACP’s cocoa strategy. Cocoa production is dominated by smallholders on plots typically 1-3 Ha in size in West Africa and .5-1.5 Ha in Indonesia. Brazil’s production is generally large scale, but their market share and number of farmers involved in production is small compared to West Africa. Given the limited means of most producers, fertilizer, pesticide, and mechanization use is limited, particularly under shade production. While full-sun production does increase the use of inputs and mechanization, it is generally at a level that does not present the kinds of significant threats to biological diversity as is found in other major commodities. It is rather the type of production scheme - whether in full sun or under shade in an agroforestry system – that is the primary factor that determines if cocoa production has positive or negative biodiversity impacts. Conservation International and Sustainable Tree Crops Program (STCP) trials in Ghana have both shown that shade, integrated pest management (IPM), and BMPs can lead to a 10-100% increase in productivity, reducing the need for expansion, further deforestation, and creating habitat within well-managed agroforestry systems2.

Although much of the West African landscape has already been cleared of forest cover outside its parks, there remain threats to biodiversity of global significance from deforestation and the cocoa expansion that follows its path, as well as from deforestation that occurs within existing cocoa areas due to production intensification under full-sun systems. Cote d’Ivoire and Ghana both contain the biodiversity-rich lowland Guinean Forests of West Africa, which are home to more than a hundred threatened or endangered species3 and overlap with the prime cocoa producing region. While there exists the very real threat of encroachment by cocoa expansion into this last bastion of West African biodiversity, cocoa agroforestry systems that exist on the margins of remaining habitat can also help buffer areas of biodiversity. Indonesia has more standing forests at stake, although the threat of forest loss due to cocoa expansion and conversion from shade to full-sun production is less than that of other crops, such as palm oil. Due to the scope of cocoa production in West Africa and the relative threat to an ever diminishing endemic forest landscape, BACP’s strategy is to focus our initial cocoa efforts in West Africa and particularly Cote d’Ivoire. Increasing demand will continue to drive production, but support for production in well managed agroforestry systems may actually have the potential to improve biodiversity, particularly when production can serve as a buffer zone or corridor for parks and protected areas.

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2 RA summary of its cocoa activities in Ghana, March 2009.
3 BACP Project Appraisal Document.
In the past biodiversity and environmental issues have in the past been eclipsed by concerns about child labor, which have captured the attention of media, the public, and therefore, the boardrooms of major industry players. The industry has proactively tried to tackle the child labor issue through the International Cocoa Initiative\(^4\) and in recent years, biodiversity and environmental concerns have become increasingly important factors alongside social issues. A number of industry leaders have begun to add sustainability criteria in their sourcing codes and guiding principles. The best example is perhaps Mars, which has committed to certifying 100% of their cocoa supply to Rainforest Alliances’ (RA) standard by 2020\(^5\) and will continue to pursue Utz certification for its cocoa producers in West Africa. The World Cocoa Foundation (WCF) has also recently adopted sustainable cocoa principles, stating that its mission is to “promote a sustainable cocoa economy through economic and social development and environmental conservation” by supporting activities such as the preservation of biological varieties and agroforestry stewardship\(^6\). WCF has also been acting as convener between the various certification bodies, producers, and others in its membership in the pursuit of a platform of common criteria through which training efforts may be coordinated and expanded. Such cooperation within the membership, and particularly between certification bodies, represents a mainstream push for greater certification. Activities under this initiative kicked off in early July 2009\(^7\) and working groups are currently devising frameworks for pre-certification curriculum.

Movement towards industry-endorsed criteria for sustainable cocoa production is important and timely step as BACP launches its cocoa MTS. While there have been several cocoa roundtable-like initiatives over the years supporting various criteria, they have tended to be fragmented, with groups representing individual segments of the cocoa market, from cocoa boards, producer associations, NGO and industry groups. The Roundtable for a Sustainable Cocoa Economy (RSCE), which is primarily NGO based, has been the latest attempt at the development of overall sustainability standards. In March of 2009, RSCE held its second meeting, which reviewed and discussed documents prepared by working group members in topics such as best practices, traceability, and sustainability principles. Although good progress has been made to date by the RSCE, it does not yet have wide industry support, and it’s not clear yet whether the initiative will succeed or when the next meeting will be held.

3 MARKET TRANSFORMATION STRATEGY BY BACP COMPONENT

Below we discuss BACP’s strategy by each of the four component areas and make suggestions for activities that would support BACP’s goals. It should be noted, however, that BACP’s short term strategy will focus on activities under Component II (production-centric activities that identify, define and test BMPs, increase farmer knowledge and adoption of biodiversity-friendly production, and generate additional supply of sustainable/certified cocoa in response to increasing mainstream demand) and Component III (support the cocoa industry in the development or adoption of principles and criteria for biodiversity-friendly cocoa production

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\(^4\) [www.cocoainitiative.org](http://www.cocoainitiative.org)

\(^5\) [http://www.mars.com/global/News+and+Media/News+archive/Mars+Commits+to+Global+Certification.htm](http://www.mars.com/global/News+and+Media/News+archive/Mars+Commits+to+Global+Certification.htm)


\(^7\) Based on an email correspondence with Bill Guyton of WCF and participation in the Cocoa Certifier Working Group meetings.
through a multi-stakeholder process). At present, it is envisioned that activities under Components I and IV would be targeted for the medium term. Section four provides further guidance on additional activities that may be pursued in the longer term in BACP’s second phase.

**Component I: Support Activities for an Enabling Environment**

BACP would support the following types of proposals under Component I in the medium to long term:

1. Assessments of how government policies may influence biodiversity conservation in countries such as Ghana, Côte d’Ivoire, and Indonesia. Of specific interest would be an assessment of the effectiveness of policies at the farm versus landscape level.

2. Review of property rights in West Africa, particularly in respect to the ownership of trees, along with suggestions for property right reforms that would encourage agroforestry and reforestation efforts.

As cocoa is a major source of export revenues and jobs in Côte d’Ivoire and Ghana, decisions related to production tend to be highly political. For example, the Ghana Cocoa Board (Cocobod) sells all cocoa centrally through the Government’s Cocoa Marketing Corporation at set prices in order to avoid discrimination among farmers. This does not allow for easy certification of Ghanaian farmers. The Indonesian cocoa sector has been in decline recently, primarily due to disease, aging tree stock, and lower fertility. This has galvanized some action from various public/private sector actors and is summarized as follows:

1. The Indonesian Cocoa Board (Dewan Kakao Indonesia) has been recently established, elevating the political significance of the sector. The Board is tasked with providing advice to the Government of Indonesia (GOI) on the cocoa industry and at this stage no central marketing role is envisaged.

2. The GOI has embarked on a three-year revitalization project titled, GERNAS that aims to provide inputs for tree rehabilitation on a large scale. This is being done through the Ministry of Agriculture (MOA).

3. The industry association -- along with some donors (including IFC), research institutes, companies, NGOs, and the GOI -- has slowly coalesced into a forum titled the Cocoa Sustainability Partnership (www.cspindonesia.org), which is aimed at ‘Encouraging a profitable and sustainable cocoa industry’.

The situation in Côte d’Ivoire, however, is much more open, with those companies interested in promoting certification being able to do so without any policy or administrative constraints. Conversely, the farm gate price for cocoa is significantly lower in Côte d’Ivoire than in Ghana due primarily to much higher taxes levied on the cocoa sector in Côte d’Ivoire. This differential has led to significant smuggling of cocoa from Côte d’Ivoire into Ghana over the past few years. Previously, the situation was reversed, due to both higher farm gate prices and a stronger currency in Côte d’Ivoire than in Ghana.
For cocoa in West Africa, one of the important policy barriers to biodiversity-friendly production relates to the ownership of timber trees by farmers. If ownership of trees is unclear, farmers are less likely to invest in reforestation efforts related to shaded cocoa production and the potential for increasing biodiversity through increased canopy cover diminishes. Policy reform is needed to clarify private property rights for these trees so as to encourage more diversified land cover on cocoa farms as well as increased income.

**Component II: Support Better Production**

BACP has emphasized its support to activities under Component II and would support the following types of proposals under Component II in the initial phase of the program:

1. Support projects that help further define and test the farm and landscape elements of biodiversity-friendly cocoa production systems. Where practical, the definitions should focus on biodiversity performance levels, rather than on prescriptive approaches, and should be agreed to in a multi-stakeholder initiative with the aim of establishing a common set of criteria for biodiversity-friendly cocoa.

2. Support efforts of industry leaders in their efforts to create a common training curriculum that espouses biodiversity-friendly production practices.

3. Identification and implementation of activities that incentivize a conversion to production within an agroforestry system by addressing the major constraints of cocoa productivity: pests and diseases, aging trees, declining soil fertility, and inconsistent/poor quality of production.

**Defining biodiversity-friendly cocoa production systems**

While industry recognizes that cocoa agroforestry benefits the environment, there is no commonly-accepted definition of biodiversity-friendly cocoa production. It is generally agreed that cocoa agroforestry systems, which resemble early-stage secondary growth forests with

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^8^ 100% = 1557 US$/metric ton, 2005/06

^9^ Note table represents share of traded price – share of FOB price will be higher in most cases
respect to tree diversity and structure (multiple strata), are biodiversity-friendly. However, these production systems can take a variety of forms and incorporate many different types of native shade-giving species (timber, fruit, medicinal, etc.). The relationships between level and type of shade and level of biodiversity have not yet been studied in detail. There are also a number of research reports that favor full-sun system in certain cases and agricultural intensification, leaving more space for biodiversity protected areas. However, this system only benefits biodiversity when there is enough mastery of land use at the landscape level, which is not the case in a number of producing countries.

The lack of a definition of biodiversity-friendly cocoa practices at the farm and landscape level is a fundamental challenge to BACP, because the program needs to know what types of production systems it will promote. For the time being, the best working guidelines for biodiversity-friendly cocoa production are contained in (i) Section 2 (Ecosystem Conservation) of RA standard’s Additional Criteria and Indicators for Cocoa Production, which guarantees a higher level of biodiversity in production landscapes\(^\text{10}\); and (ii) Conservation and Biodiversity in and around cocoa farms, a publication of the STCP program. However, it should be recognized that capacity to meet current and future demand for biodiversity-friendly cocoa is limited by the training and investments required to bring millions of cocoa farmers into compliance and how such investments are paid for initially. For the purpose of this strategy, BACP is using RA certification as the benchmark definition for biodiversity-friendly cocoa for the time being while supporting activities and research to better define biodiversity-friendly cocoa production systems and their benefits to farmers. BACP recognizes that some brands prefer to align with different standards to differentiate themselves from their competition and that different approaches will be required in different markets and ecosystems. BACP will not promote one exclusive biodiversity standard or certification but will aim through multi-stakeholder initiatives/dialogues to promote inclusion of biodiversity-friendly related criteria. Therefore, it would be advantageous to define the various types of production systems and practices that have the greatest biodiversity benefits, establish a common set of criteria for those practices, and promote the adoption of those criteria by existing certification schemes.

Supporting increased supply of biodiversity-friendly cocoa

Plagued by pests (such as the cocoa pod borer), diseases, aging trees, depleted soil fertility, and poor production practices, global cocoa production declined in 2008/2009 for the fourth year in a row, and projections anticipate a leveling off of global supply\(^\text{11}\). In Indonesia, where production is still on the rise due to production expansion, the pull of global demand allows cocoa beans of even poor quality to find their way into global markets through intermediary traders\(^\text{12}\). Even certified cocoa is having trouble keeping up with demand as major actors like Mars and Cadbury set goals for mainstreaming certified cocoa into their product base. Working with a supply base that is almost entirely smallholders also presents challenges. Incorporating supply chain actors such as trading houses into activities is often required to get reach scalability.

\(^{11}\) http://www.ft.com/cms/s/0/3626d840-249f-11de-9a01-00144feabd0.html?ftcamp=rss
RA currently has certified cocoa from Ecuador, Dominican Republic, and Côte d’Ivoire, has begun work in Ghana and Brazil, and plans to expand into Indonesia in the next few years. While production in Ecuador and the Dominican Republic currently exceeds demand, the majority of demand is for certified cocoa of Ivorian origin, and Côte d’Ivoire has not yet been able to meet this demand. RA has ramped up training activities, in large part through the 2006-2008 Kraft/USAID/GTZ project, to train farmers in sustainable agricultural practices, help them achieve RA certification, and supply certified cocoa to Kraft. ECOM had a similar program in place, and by the end of the project eight cooperatives and over 2000 farmers were RA certified. RA has secured funding from the Gates Foundation to continue its work in Côte d’Ivoire and has approached the WCF to facilitate the development of a farmer training program in best management practices and certification that would coordinate the now independent efforts of RA, Utz, and FairTrade in Côte d’Ivoire and support a more rapid scale up of certification supply. As mentioned previously, WCF has responded to RA’s request by coordinating its membership into working groups to create a pre-certification training curriculum based on common criteria of the various certification requirements. Additionally, a working group has formed to link certification with overall development goals, thereby addressing concerns of government bodies that certification is not in the best interest of its producers. The working groups have been reporting out on their progress during monthly teleconference calls and convened in Brussels on October 16, 2009 during the WCF’s annual meeting.

Component III: Support Increased Demand for Products with More Positive Biodiversity Impacts

BACP has emphasized its support to activities under Component III would support the following types of proposals under Component III in the initial phase of the program:

1. Supporting the improvement of environmental/biodiversity criteria in commercial standards (e.g. FairTrade) that are currently limited could be considered. FairTrade, Utz Certified, Rainforest Alliance and Starbucks have engaged in the certification discussions now being facilitated by WCF, and have indicated verbally that they are interested in this. BACP could also support efforts that lead to the adoption of greater biodiversity criteria within existing certification programs, and include benchmarking activities of industry certifications against agreed upon biodiversity-friendly production practices.

Fair trade and organic cocoa have so far been relegated to niche markets. It is estimated that the market for fair trade and organic cocoa is only 20,000 T, out of a global market of 2,800,000 T (less than 1%). Nevertheless, demand for sustainably produced and certified “specialty” cocoa is on the rise, with US sales of organic chocolate growing 64.9% in 2006 and mainstream chocolate manufacturers are increasingly showing interest in these specialty markets. For

13 Email correspondence with Edward Millard, RA, June 2009.  
14 Project partners included: Kraft, Rainforest Alliance, Armajaro (London-based trader with operations in Côte d’Ivoire), STCP, Global Business Consulting Company, and Anader (local trainer).  
example, Cadbury has bought Green & Black’s (an organic brand) and has supported Fairtrade certification. Kraft has been supporting producers in Côte d’Ivoire to become RA-certified while launching a new certified cocoa line in Europe in 2008. The recent purchase of Cadbury by Kraft is still to play out on the certifications each of the brands employs. Separating itself from the pack, Mars’ commitment to source 100% RA certified and Utz certified cocoa by 2020 will have broad impact on production demand for certified cocoa, bringing it into the mainstream. Mars currently buys $1 billion in cocoa annually for its $10 billion worth of production. Demand for FairTrade-certified cocoa will also be on the rise with Cadbury’s $1.5 billion commitment to certifying cocoa used in its Dairy Milk bars.

Given that demand for certified cocoa meeting biodiversity criteria (i.e. RA’s standard as a proxy) currently exceeds supply, BACP’s efforts will initially focus more on supply creation than increasing demand. The potential to assist other specialty cocoa certifications to incorporate biodiversity-friendly criteria into their protocols (thus creating increased demand for biodiversity-friendly cocoa) could be considered.

Component IV: Encourage the Development of Financial Services to Support Biodiversity-Friendly Practices

BACP would support the following types of proposals under Component IV in the medium to long term:

1. Projects that: (1) document the variety of benefits to farmers of biodiversity-friendly cocoa-production; and/or (2) demonstrate or explain these benefits to farmers. BACP will also ensure that any supply-side project it supports (see Section 3 below) duly tracks the project’s biodiversity and farmer income benefits in its Monitoring and Evaluation component.

2. Documentation of the overall business case to the value chain for biodiversity-friendly cocoa at the farm and landscape level.

Document the economic benefits of biodiversity-friendly production to farmers

If biodiversity-friendly cocoa production is to be adopted on a wide scale, farmers must be convinced of its benefits. While part of the answer lies in a likely premium for RA-certified products and/or access to markets, BACP should also be in a position to provide a more rigorous answer, demonstrating that on-farm biodiversity is in farmers’ economic interest. Little research has been done to quantify the benefits to farmers of a biodiversity-friendly production. These benefits may include: cocoa-specific attributes, such as increased resistance to pests and diseases, increased resilience to adverse climatic conditions, and higher quality cocoa (larger average bean size/weight); reduced labor costs; more stable cocoa production; longer production

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17 [http://www.ft.com/cms/s/0/3626d840-249f-11de-9a01-00144feabdc0.html?ftcamp=rss](http://www.ft.com/cms/s/0/3626d840-249f-11de-9a01-00144feabdc0.html?ftcamp=rss)

18 In a project with Kraft Foods, USAID and GTZ in Côte d’Ivoire, RA certified cocoa was bought at a 200 US$/t premium above market prices; the direct cost of certification was estimated at about 40 US$/t. The difference was available as positive incentive to reward farmers (who must make investments on their farms to adopt the best practices) and other members of the supply chain.
during the harvest periods; and benefits related to other agroforestry products, such as income diversity (from different crops), income smoothing, greater yields and/or revenues per ha, etc.\textsuperscript{19} Once this research has been conducted, the benefits must be explained and demonstrated to farmers in an effective manner.

**Develop Market-Based Mechanisms for Building Sustainable Cocoa Financing Options**

Finance needs related to cocoa production include very short-term finance to cooperatives (one-week) to allow them to make cocoa purchases; and short-term finance to farmers (6-9 months) to cover the costs of inputs, simple post-harvest technologies, tools, and/or of daily living (school fees for children, etc.). The sums needed by individual farmers are very small – around US$100 per annum. Local financial institutions typically charge very high interest rates; by contrast, international traders can offer much lower interest rates set according to international money markets. For example, ECOM’s farmer training pilot contains a finance component.

It is not yet known what finance requirements might be associated with biodiversity-friendly cocoa production. For example, annual costs related to pesticides or fertilizers might decline, but one-time expenditures for seedlings of shade trees might increase.\textsuperscript{20} There is also growing interest in payment for environmental services (PES) and REDD-related projects that could coincide with reforestation efforts in agroforestry schemes. These issues could be covered as part of a modest research program sponsored by BACP in the medium term.

4 MARKET TRANSFORMATION STRATEGY OVER TIME

**Long-term Strategy**

BACP’s longer-term strategy will, of course, depend on the outcome of its initial strategy and evolving market developments. Issues to be addressed in the mid to long-term might include:

- **Expanding biodiversity-friendly cocoa better management practices or certification to Ghana.** Bringing a new certification or better management practices to Ghana will require authorization from Cocobod; currently, Cocobod only authorizes specialty cocoa from a single, large cooperative.\textsuperscript{21} However, RA has been working in Ghana since 2008 with the support of Mars and the Gates Foundation to train farmers and auditors in RA’s sustainable agriculture standard. RA thinks that Cocobod is starting to warm to the segregation and traceability required by certification, and they are laying the groundwork accordingly. The status quo may limit the certification-based work BACP can support in Ghana. However, Ghana’s low productivity and increasing trend toward full-sun

\textsuperscript{19} The Sustainable Tree Crops Program (STCP) is exploring payments for ecosystem services, perhaps related to the Volta dam in Ghana; the Tropical Agricultural Research and Higher Education Center (CATIE) has investigated payments for carbon sequestration, but has found that high transaction costs limit its immediate potential.

\textsuperscript{20} These costs would probably be incurred over a 5 year period as farmers incorporate shade trees over time; this not only reduces the seedling expenses and associated labor costs, but also allows the farmer to experiment with the new approach, and not put all his cocoa under shade at once; this is particularly important if the planting also involved rehabilitation of older cocoa – this reduces yield in year 1-2 but then significantly increases production.

\textsuperscript{21} The Kuapa Kokoo cooperative in Ghana has more than 30,000 cocoa farmer members; but only a small (<5%) volume of their production sold via differentiated market channels (FairTrade).
production supports the argument for farmer training in good agricultural practices at the foundation of RA’s standard, even if certification is not an immediate outcome.

- **Land use planning, either at the national or regional level.** The preliminary strategy focuses on biodiversity primarily at the farm level, but will need to focus on the landscape level as soon as practical.

- **Replanting fallow, abandoned, or degraded lands with cocoa agroforestry systems.** In Ghana and Côte d’Ivoire respectively, 70% and 23% of cocoa trees are over 25 years old. Furthermore, demand for chocolate has been steadily growing at a rate of 3% per year. As the need for expansion of cocoa lands increases, BACP should explore incentives for replanting fallow, abandoned or degraded lands with cocoa agroforestry systems, in order to avoid expansion into natural habitat (although little remains in Ghana and Côte d’Ivoire) and potential replacement by full-sun production.

- **Finance that supports biodiversity-friendly practices.** When biodiversity-friendly cocoa is better defined, BACP will be in a position to assess farmer’s finance needs related to production of biodiversity-friendly cocoa. BACP can explore issues such as: which traders or local financial institutions (FIs) would make good partners; what their training needs might be; how traders and the FIs might interact; what form of guarantees / off-take agreements might be most effective; etc. BACP should also coordinate with potential IFC investments in financial institutions which could lend to the cocoa sector, as well as with IFC/GEF Environmental Business Finance Program (EBFP).

- **The establishment of nurseries.** To comply with biodiversity-friendly agroforestry production, large scale reforestation efforts will need to be made, particularly in West Africa. To accommodate the need for cocoa and native tree seedlings from certified seed that are appropriate to the local setting and offer alternative income streams, BACP may consider supporting the establishment of regional nurseries. While BACP may not be suited to this level of SME development, the Program should remain aware of this issue.

- **Monitor productivity research.** Researchers are seeking to increase the productivity and lifetime of cocoa trees through improved varieties or other means. All other things being equal, higher yields per tree should reduce the amount of land needed to cultivate cocoa. Research on cocoa yields is better funded than research projects related to biodiversity and need not be a priority for BACP. However, BACP should stay informed of such research, as it may impact material taught in BACP-sponsored farmer training. The monthly cocoa research digest produced by WCF will be helpful in this regard.

- **Identity Preserved Schemes.** Establishing these schemes through the supply chain may be needed in the long-term in certain areas. Traceability to the producer is key to ensuring

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22 For example, anecdotal observations suggest that 20% of cocoa trees produce 80% of cocoa production on smallholder farms. If 20% of the less productive trees were replaced with economically-attractive native species the biodiversity (and improved income/cash flow) benefits would be significant.
that farmers can be rewarded for quality and food safety, and chain of custody systems at a minimum will be required for certification schemes.

- **Building local capacity for training and auditing.** Government-run extension programs in Ghana and Côte d’Ivoire are underperforming and large scale farmer training in agroforestry management and biodiversity-friendly practices – which can lead to higher productivity – will be a critical factor in farmer adoption and certified cocoa expansion. Key too will be the creation of local auditor capacity to reduce certification costs. BACP will support efforts that improve the quality of extension and auditor training curriculum to ensure it includes provisions for biodiversity-friendly production.

- **Building the institutional capacity of farmer cooperatives and associations.** This will be fundamental to farmer groups’ ability to implement certification systems and effectively promote biodiversity-friendly cocoa production practices.

- **Enhancing biodiversity impacts between agroforestry systems and protected areas through zoning.** While cocoa production can have negative impacts on biodiversity, it can also provide biodiversity benefits if biodiversity-friendly practices are implemented within agroforestry systems. Those benefits are magnified if cocoa agroforestry systems buffer protected areas or create biodiversity corridors between protected areas. The Strategy will encourage the adoption of new and continued use of existing biodiversity-friendly practices within cocoa agroforestry systems and encourage land use planning that maximizes the benefits of agroforestry systems to protected areas.

**Information gaps**

The research conducted to date has primarily centered on Ghana and Côte d’Ivoire, given their overall importance in the marketplace and the likelihood that initial projects will take place in West Africa. As the program progresses and biodiversity criteria are established, additional research into cocoa production and opportunities for BACP in Brazil and other countries should be pursued. Additional research may also be conducted into finance needs related to biodiversity-friendly cocoa production, including PES and REDD related opportunities available to projects initiating reforestation efforts. BACP should initially be opportunistic in selecting the areas and activities in which it will work so it may take advantage of existing partnerships and projects. In the mid- to long-term, BACP should focus more specifically on certain regions which present especially high conservation value or where the program stand to have the biggest impact in terms of production and farmer involvement.

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23 Landscape-level approaches being promoted by CI, Eco-agriculture Partners, IITA (in Cameroon), APPTA in Costa Rica, and by Conservation Measures Partners (coordinated by Foundations of Success) are worth further exploration.
Annex 1: Background Information for the Preliminary Market Transformation Strategy for Cocoa

I. INTRODUCTION

This document provides information on biodiversity issues related to cocoa and on cocoa supply (production), demand, and finance, and on the general enabling environment. While some information on Indonesia and Brazil is included in this document, the primary focus is on Côte d’Ivoire and Ghana, the two largest cocoa producers where initial BACP activities are likely to focus. As the BACP strategy for cocoa evolves, additional research will be conducted on the operational environments in Indonesia and Brazil or other countries as appropriate. This document is intended as input to the BACP Market Transformation Strategy for Cocoa.

Most scientific literature uses the term cacao to refer to the plant *Theobroma cacao* L., but the product of commerce from the plant is known as “cocoa.” In deference to common usage, the term cocoa is used here interchangeably.

II. BIODIVERSITY IMPACTS

Agronomic fundamentals

Cocoa is a permanent tropical tree crop, with two main types of production systems:

- **Shade-grown systems** are the most frequent and use either natural trees from the forest or planted trees, frequently leguminous species. Shade-grown systems require less chemical inputs but, due to pressure on prices, farmers tend to shift from shade-grown to full-sun systems to increase yield and income. Shade-grown systems can be classified either as rustic, in which the cocoa is planted beneath thinned primary or old secondary forest, or as planted shade, in which the planted shade trees could range from traditional polyculture through to a specialized, single-species shade (e.g., coconut).

- **Full-sun systems** are more intensive, either monocrop stands or small-holdings under very degraded forests; they require high levels of inputs but give higher yields and income. They are mainly found in Malaysia and Indonesia, but also in Brazil and Côte d’Ivoire. They have often proved to be unsustainable. Full-sun systems tend to be increasingly favored by farmers, particularly in West Africa, as they are perceived as being more lucrative.

Cocoa trees begin production 3-5 years after planting, and typically produce for 25 years in a shaded system. Soil management tends to be minimal in shade-grown systems and is limited to

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24 Based on BACP preparatory work commissioned by IFC to a consortium led by Price Waterhouse Coopers and including CIRAD, Alterra and PRI.

clearing of the under story vegetation and planting seeds or plantlets without cleaning the entire area. In full-sun systems, mechanical clearing is used, resulting in the destruction of soil fauna and flora and soil compaction, which in turn can lead to soil degradation. After planting, there has been a tendency not to focus on further soil management, something that is becoming an issue now as natural fertility has declined.

Shade-grown systems use little fertilizers as most farmers cannot afford it. In areas with a long history in cocoa cultivation, producers apply fertilizers when prices are good. Rational use of fertilizer could increase yield by a factor of 2, or even 5 when water supply is adequate. Without fertilizer applications, maximum yields are 500 to 700 kg/ha/year, but this will decline with the age of the trees and natural soil fertility.

Most small farms do not use pesticides when prices are low, mainly because they do not have the financial means to buy the products. As with fertilizers, some of them apply pesticides when prices are good, or when the levels of infestation threaten the crop, as some pests could kill the trees (mirids, Phytophthora, etc.). The pesticides are efficient but often costly, and some will be prohibited in the near future.

The global harvested area for cocoa in 2005 was approximately 7 million hectares, with well over half of that in BACP’s target countries (Ghana, Côte d’Ivoire, Indonesia and Brazil).

**2008-2009 Cocoa Production Statistics**

<table>
<thead>
<tr>
<th>Country</th>
<th>Ha Under Production</th>
<th>Tons</th>
<th>% Global Production*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Côte d’Ivoire</td>
<td>3.36 mil</td>
<td>1.3 mil</td>
<td>43%</td>
</tr>
<tr>
<td>Ghana</td>
<td>1.76 mil</td>
<td>720,000</td>
<td>24%</td>
</tr>
<tr>
<td>Indonesia</td>
<td>900,000</td>
<td>440,000</td>
<td>15%</td>
</tr>
<tr>
<td>Brazil</td>
<td>650,000</td>
<td>155,000</td>
<td>5%</td>
</tr>
</tbody>
</table>

*based on total global production of 3,000,000 tons

**Impacts of production**

The main negative environmental impacts of cocoa production are:

- **Habitat conversion.** In Ghana and Côte d’Ivoire, there is very little remaining natural habitat suitable for conversion to cocoa; most of that land is already in national parks. There is a risk that cocoa production converts from shade-grown to full-sun systems. In Indonesia thousands of hectares of forest are still available, and cocoa is often considered as the first step in a forest conversion process.

- **Environmental pollution** due to pesticides is only a serious problem when they are used in great quantities in full-sun systems. (Risks posed to farm children who spray pesticides are a social problem being addressed by the industry).

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Information gathered from ICCO, WCF, and RA sources
• **Soil degradation** is essentially linked to loss of fertility and the consequent need to move to new areas. Loss of fertility is mainly due to inadequate cultural practices, in particular the lack of fertilizer supply and of vigorous planting material.

As the first phases of processing takes place on farms, there are few concentrations of residues, mainly pod husks and pulp, and fermentation effluents.

**Biodiversity benefits of cocoa agroforestry systems**

Shaded cocoa production systems that mimic primary or secondary growth forest also produce positive impacts on the environment when compared to monoculture crop alternatives. Although the biodiversity benefits of cocoa agroforestry have not been systematically documented and studied, enough scientific evidence exists to back up the empirical observation that cocoa farms with diverse shade have the potential to support greater local diversity and act as a more effective refuge for some tropical forest organisms than alternative lowland tropical crops. This is echoed in the findings of the First International Workshop on Sustainable Cocoa Growing (see Box 1).

**Box 1: Summary of findings of First International Workshop on Sustainable Cocoa Growing**

The participants of the First International Workshop on Sustainable Cocoa Growing (Panama, 1998) believe that the cultivation of cocoa can have an important role in maintaining and enhancing a diverse and sustainable tropical environment.

Cocoa grown within a biologically diverse and environmentally sustainable agricultural system is capable of providing lasting economic, social, and environmental benefits. Grown in such a system, cocoa is a crop ideally suited to small holder cultivation.

A sustainable, biologically diverse system of growing cocoa will:

- Be based on cocoa grown under a diverse shade canopy in a manner that sustains as much biological diversity as is consistent with economically viable yields of cocoa and other products for farmers.
- Use constructive partnerships that are developed to involve all stakeholders with special emphasis on small farmers. Build effective policy frameworks to support these partnerships and address the particular needs of small farmers for generations to come.
- Encourage future cocoa production that rehabilitates agricultural lands and forms part of a strategy to preserve remnant forests and develop habitat corridors.
- Maximize the judicious use of biological control, techniques of integrated management of pests, disease, and other low input management systems.

Source: Summary of Panama conference, as posted on [http://nationalzoo.si.edu/ConservationAndScience/MigratoryBirds/Research/Cacao/principles.cfm](http://nationalzoo.si.edu/ConservationAndScience/MigratoryBirds/Research/Cacao/principles.cfm)

In addition to providing biodiversity benefits, shade trees also enhance cocoa production: studies reported in Rice and Greenberg found that the leaf litter for shade trees provides mulch and a supply of organic matter for the soil, which, in turn, can increase aeration, infiltration, and drainage, as well as result in a slow and steady release of nutrients into the soil. The decaying litter also provides resources for a greater diversity of soil and litter organisms. Shade trees and
the insects they help support can reduce soil erosion, promote greater long-term production of older cocoa plants, offer protection from ground-level winds, and most importantly, can protect cocoa trees from windborne spores of fungal diseases, including Witches Broom and Frosty Pod Rot. Other papers report that shade systems offer better pollination.

Gockowski et al. found evidence that agroforestry systems also provide broader ecosystem services such as habitat conservation, climate change mitigation, hydrological cycling, and watershed protection. The authors note that the degree to which these services are provided depends in large part on the type and degree of shade maintained as well as their spatial coverage in the landscape.27

Despite these general indications of links between cocoa agroforestry and biodiversity benefits, the fact remains that, as reported by Greenberg in preparation for the Panama workshop, “the most striking feature of the published research [on cocoa and biodiversity] so far is its paucity.”28

Finally, it is worth noting that there is no single CGIAR-like research institution for cocoa which can set a research agenda, coordinate efforts in order to avoid duplication, serve as a clearinghouse, etc. The main emphases for cocoa research today are germplasm, breeding, and pest control.

**Indicators and baseline for biodiversity-friendly cocoa**

There is little information available to farmers on the benefits to them of a biodiversity-friendly cocoa production system, or even on how to define such a production system. This makes it difficult for BACP to promote specific biodiversity-friendly practices. What is clear, at this point, is that there will not be a single system that optimizes biodiversity conservation and farmer value. Ideal systems will vary according to local conditions (soil, topography, climate, proximity to natural habitat), and to farmer preferences for shade trees (fruit trees, medicinal trees, timber trees, etc). Currently no specific indicators for or definition of biodiversity-friendly cocoa exists. The closest is the RA Certification, whose Criteria and Indicators for Ecosystem Conservation require cocoa farms to include a minimum of 70 trees per ha, from at least 12 different indigenous species; a minimum 40% shade cover, and a two-strata canopy.29 The RA certification is regarded by specialists as the only cocoa certification that addresses issues related to biodiversity, and it is a pragmatic proxy BACP can use to identify biodiversity-friendly cocoa.

As it is prescription-based (as opposed to target-based) the RA certification has some limitations. It does not set any specific biodiversity targets (e.g., number or abundance of species found per ha, etc); nor does it provide any indicators for measuring landscape-level issues. A complementary market-based indicator is the extent to which major chocolate manufacturers use RA or other biodiversity-friendly cocoa in mass market products. Currently, this is negligible.

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28 http://nationalzoo.si.edu/ConservationAndScience/MigratoryBirds/Research/Cacao/greenberg.cfm
29 These figures were defined so as to mimic secondary growth forest.
(see more under Section 4, Demand-Side, and Section 6.1, Roundtables and industry groups), but given Mars’ and others’ commitments to certified cocoa, it is expected to rise precipitously in coming years.

Investment in RA-certified cocoa in Côte d’Ivoire began in 2006 and currently 8 cooperatives and approximately 2000 farmers are certified. RA has been working in Ghana since 2008 training farmers and auditors in their certification standards and practices, but no certifications have been made to date. RA also plans to extend activities to Indonesia and Brazil, but at present, there are no certified farms in these locations, creating a zero baseline in all but Côte d’Ivoire.

Table 3 and Table 4 estimate the proportion of farms in Ghana and Côte d’Ivoire which are shaded, providing a useful baseline for level of shade (though not for level of biodiversity).

Further research needs to be done in order to establish indicators of biodiversity on cocoa farms or in cocoa production landscapes. One expert on cocoa and biodiversity suggested that hornbills would make a good indicator species: they are a keystone species for local ecosystems, as they play a critical role in seed dispersion, and cocoa agroforestry provides habitat for them.

**Gap Analysis and Options for Filling in the Gaps**

The following issues related to biodiversity impacts should be explored during the implementation:

- **Cocoa production Indonesia: methods and impacts**
- **Environmental policies related to cocoa in Ghana, Côte d’Ivoire, and Indonesia** A preliminary study on policy related barriers to the adoption of biodiversity-friendly practices has been conducted during the appraisal phase. Its findings have been included in the program appraisal document. It will be further developed during the implementation.
- **Specific regional priorities for BACP.** BACP should be aware of specific regional issues related to cocoa production in its target countries: which regions are moving towards full-sun, which regions still have natural habitat to be preserved or buffered.
- **Landscape-level issues.** The RA certification does not address landscape-level issues. Generally, these issues are hard to address for cocoa because cocoa landscapes are a dense mosaic of small farms. BACP should understand more about landscape-level issues related to cocoa production in its target countries.

### III. SUPPLY SIDE

**Structure of local production**

Cocoa is grown by farmers who own or share-crop plots, typically .5 - 3 hectares in size. The level of care required for individual cocoa trees make cocoa unsuitable for large holdings. Estimates vary, but roughly one million cocoa farmers are active in Ghana and Côte d’Ivoire combined. In excess of 90% of cocoa production in both Ghana and Côte d’Ivoire is grown by
resource-poor family smallholdings (many of whom are sharecroppers) and where some of the landholding is devoted to cocoa with the rest being planted to subsistence food crops. As an IFC program, BACP cannot work directly with smallholders, but needs to work through private sector entities that have relationships with organized groups of smallholders. Typically, this would be the traders (see more under Demand section).

The average yield is estimated by FAO at 500 kg of beans per hectare, but varies largely, from less than 200 kg/ha in Nigeria to 900 kg/ha in Indonesia. These figures are probably overestimated, because on data on harvested areas are not always reliable. Yields also vary from farm to farm according to the planting material used and the possible incidence of diseases. Farm yields are far from the potential yields of over 3,000 kg/ha obtained in research fields.

While cocoa grown under full sun with the recommended fertilizer and pesticide applications can result in higher yields, the research indicates that under typical conditions (with limited or no chemical applications) initial production gains under a full sun system drop off rapidly and have no long term advantage over shade production. In contrast, long term productivity, soil health, and tree health are maintained or improved under shade production due to reduced plant stress and nutrient cycling from leaf litter. Despite this fact, in West Africa, South America, and in Sulawesi, there is a trend towards full sun production, as well as expanded production resulting in further deforestation.

Farmers’ finances tend to be precarious, which makes it difficult for them to invest in inputs such as seedlings or inputs, and which makes them vulnerable to crop failure, price drops, etc. Any measure that BACP promotes will need to provide clear economic benefits to farmers.

That said, the overall market for cocoa (as opposed to chocolate products) is just over 5 billion dollars and is expected to increase with falling production and rising prices. Côte d’Ivoire and Ghana’s market share is estimated at $2.1 and $1.2 billion, respectively, which is largely underestimated as these values are based on raw cocoa beans and several producing countries now produce (and export) processed products with added value. In Côte d’Ivoire and Indonesia, approximately 25% of the beans are processed locally and in Ghana, the figure is a little more than 10%.

Ghana

Market. All cocoa sales are centralized through the Ghana Cocoa Board (Cocobod), which sells cocoa and sets national prices. This makes it impossible, currently, for individual farmers to obtain a premium for their product based on any kind of differentiation (fair trade, organic, RA, etc. Note also that as Ghana sprays its crop nationally this creates additional difficulties for organic in Ghana). This national uniformity is intentional: the government’s policy has been for cocoa from Ghana to be seen as being of uniform quality and not to differentiate among regions, farmers etc. The one exception is the cooperative called Kuapa Kokoo, which Cocobod has authorized to produce fair trade cocoa for sale through Cocobod.

30 http://www.worldcocoafoundation.org/for-the-media/fast-facts.asp
That said, according to industry experts, if an important enough buyer expressed an interest in buying large volumes of a differentiated cocoa (e.g., RA-certified), Cocobod should be willing to agree to a trial scheme (especially as RA-certified or other cocoa is now available from the competition, i.e., on the Côte d’Ivoire market).

**Farmer training.** Active groups include the government extension services (MOFA), Kuapa Kokoo and other licensed buying companies, and STCP.

**Farm characteristics.** About 42% of farmers use improved planting material for cocoa. However, over 70% of trees are over 25 years and will need to be replanted in the coming five years. As shown in Table 3 a survey of nearly 2000 Ghanaian farms found that at least 30% shade was present in two-thirds of cocoa farms.

**Table 3: Proportion of shaded cocoa farms, Ghana**

<table>
<thead>
<tr>
<th>(shade as % canopy cover)</th>
<th>Number h/holds surveyed</th>
<th>No shade</th>
<th>Shade &lt; 30%</th>
<th>Shade 30-60%</th>
<th>Shade &gt; 60%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ghana</td>
<td>1,873</td>
<td>28%</td>
<td>42%</td>
<td>25%</td>
<td>5%</td>
</tr>
</tbody>
</table>


**Cocoa quality.** Cocobod recognizes and markets two grades of cocoa, mid and high. Ghanaian cocoa is considered to be consistent in quality (one batch being much like the next) and a good cocoa for mass-market chocolate (as opposed to Origins or Fine Flavor chocolate).

**Research institutes.** Cocobod runs the Cocoa Research Institute of Ghana (CRIG). Another institute to be aware of is the Nature Conservation Research Center (contact: John Mason, friend of Frank Hicks). Local universities also undertake cocoa research.

**Côte d’Ivoire**

**Market.** Since the dissolution of the Caisse de Stabilisation, cocoa farmers are free to receive prices set by the market rather than by government. However, lack of transparency, corruption, and an ongoing civil conflict make Côte d’Ivoire a difficult place to do business.

**Farmer training.** There are no functioning government extension services. A private organization called Anader (Agence Nationale d’Appui au Développement Rural/National Agency for Rural Development Support) provides farmer training, and works (among others) as a subcontractor to STCP and RA.

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**Farm characteristics.** Only 14% of farmers use improved planting material for cocoa. Cocoa trees in Côte d’Ivoire are younger than in Ghana: only 23% of trees are over 25 years. The proportion of shaded farms in Côte d’Ivoire is two-thirds, similar to that of Ghana.

<table>
<thead>
<tr>
<th>(shade as % canopy cover)</th>
<th>Number h/holds surveyed</th>
<th>No shade</th>
<th>Shade &lt; 30%</th>
<th>Shade 30-60%</th>
<th>Shade &gt; 60%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Côte d’Ivoire</td>
<td>1,785</td>
<td>28%</td>
<td>44%</td>
<td>16%</td>
<td>12%</td>
</tr>
</tbody>
</table>


**Quality.** As with Ghana, Cocoa from Côte d’Ivoire is also considered mass market cocoa (as opposed to cocoa for Fine Flavor chocolates); generally speaking, the quality of cocoa from Côte d’Ivoire is less consistent, than that from Ghana due to variations in the postharvest care taken by farmers.

**Research institutes.** The Centre National de Recherche sur le Cacao. Other potential research partners will be identified during implementation.

**Global market**

World prices for cocoa are thought to follow a boom and bust cycle of over 20 years in duration, with production increases leading to low prices that then foster decreased production until consequent higher prices again fuel production increases. However, this cycle may be changing as analysts predict cocoa production may be flattening out, in part due to the limits of suitable production areas, and compounded by ageing trees and pest problems. While cocoa production was on the rise through 2004, the last four years have shown a net reversal in production trends. Sulawesi, the major cocoa growing area in Indonesia, had a 45% decline in production last year largely due to cocoa pod borer problems, which was only partially offset by a doubling of production in the relatively pest-free Sumatra. Likewise in West Africa, while Ghana showed a slight increase in production, Côte d’Ivoire’s production remained relatively flat. The net effect was a fourth straight year of declining global production and the highest prices in 24 years.

**Social, economic, and legal factors affecting cocoa agroforestry**

Certain social, economic and legal factors can encourage or discourage the adoption of agroforestry systems. The highly biologically diverse agroforestry systems of Cameroon are

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33 [http://www.ft.com/cms/s/0/3626d840-249f-11de-9a01-00144feabdc0.html?ftcamp=rss](http://www.ft.com/cms/s/0/3626d840-249f-11de-9a01-00144feabdc0.html?ftcamp=rss)


35 [http://www.ft.com/cms/s/0/3626d840-249f-11de-9a01-00144feabdc0.html?ftcamp=rss](http://www.ft.com/cms/s/0/3626d840-249f-11de-9a01-00144feabdc0.html?ftcamp=rss)
found among ethnic groups who have lived in the forest for generations and, as a consequence, have acquired a great deal of knowledge about their local ecosystem. Some farms have over 300 different tree species. The migrant farmers who farm much of Western Ghana and West Côte d’Ivoire do not have this depth of knowledge.

The extent to which farmers will be willing to incorporate productive shade trees (fruit, medicine, timber, etc) on their farms also depends on access to local markets. In areas where this access is possible, farms have much more incentive to diversify into other tree crops that can shade the cocoa. While creating local markets for produce from cocoa farms is a bit far from BACP’s core mission, it is certainly important for creating economic incentives for farmers to include more shade trees. National law on rights to timber can also prevent farmers from capturing the economic value of timber on their cocoa farms.

Finally, the gender implications of a diverse shape canopy should also be taken into account: it is typical for men to control revenues from timber, cocoa, and palm wine, and for women to exert control over revenues from fruit.36

Some related research has been conducted or is ongoing, for example:

- The Danish Centre for Forest, Landscape and Planning has published a Farmer’s manual entitled “Learning about neighbour trees in cocoa growing systems”
- The STCP has undertaken research on “Conservation because it pays: Shaded Cocoa Agroforests in West Africa.”
- An Earthwatch Institute (Europe) project with Cadbury Schweppes and the Ghana Nature Conservation Research Centre (NCRC) to improve biodiversity levels of cocoa farms in Ghana. The project aims to re-establish cocoa on land once used to grow it, a more ecologically balanced environment that provides a diversified habitat for birds and other wildlife and which increases cocoa yield and boosts farmers’ long term financial security.

Another issue that BACP will need to take into consideration is the need for nurseries for shade trees. Most farmers grow shade trees from seed and do not know how to select seedlings for optimal growth. The establishment of nurseries would help ensure the quality (and associated revenues) of shade trees used in cocoa agroforestry.

IV. DEMAND SIDE37

Cocoa products and their uses

Cocoa is essentially produced for two different markets: the bulk market and the fine or flavor market. The former is supplied mostly by beans from a variety of tree (Forestero) grown in West

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36 J. Gockowski, op. cit.
37 Main sources for this section include the reports commissioned by IFC in the framework of BACP development or Better Management Practices project.
Africa. The latter, which accounts for less than 10% of world production, is grown from other varieties (Criollo or Trinitario), and comes mostly from Latin and Central America, Madagascar and Asia. Within these types, there are dozens of subspecies and variations, such as Rio Caribe from Venezuela, Arriba from Ecuador, and Java in Indonesia. Fine flavor cocoa is sold by mark rather than country of origin.

The main cocoa products are cocoa butter, cocoa powder, and cocoa liquor. After processing, one third of production remains cocoa liquor and the rest is pressed to obtain cocoa butter and cocoa powder. The majority of cocoa butter is used in chocolate production along with the cocoa liquor, with a small quantity used in cosmetics. In total, around two-third of bean production is used to make chocolate.

Major end-markets for cocoa butter (for cosmetic use) and chocolate cake or powder (for culinary use) are the EU, which accounts for about half of consumption, and the US, which accounts for another quarter, with the remaining quarter in Russia, Japan, Brazil and a number of other countries.

The destinations of cocoa beans exported from BACP’s target countries are the following:

- Côte d’Ivoire: Europe (72%), USA (26%)
- Ghana: Europe (90%), Japan (8%)
- Indonesia: USA (91%), Europe (9%)

Most manufacturers blend beans from different sources: regional cocoas have very distinctive characters and flavors. A “flavor profile” is unique to a specific chocolate, and is considered to be the proprietary, secret recipe for the chocolate manufacturer. Production of single-source chocolate, using beans from just one country, region, or even one farm has been increasing.

**Overview of cocoa demand**

Cocoa consumption has been on a rising trend of circa 3% per annum for the last two decades. If this trend continues during the next ten years, the sector will face an increase in demand of around 1 million tons. Even a 1.5% annual increase would in a 500,000 tons increase in demand (about 16% of current production).

A direct relationship has been shown between cocoa consumption per capita and GDP per capita. As emerging market economies such as China, India and Russia improve their standard of living, considerable increases in cocoa and chocolate consumption could be expected to follow.

In order to keep pace with the predicted rise in consumption, a continued increase in production is needed. Over the past 100 years, production increased due to the availability of land and labor,

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38 UNCTAD Info Comm.
with few increases in yields. Now, in many producing countries, land availability is scarce, and concerns about habitat conversion could limit cocoa stands extensions in some others.

This means that the main production increases must come from yield increases. Several important factors could contribute to yield increases, starting with the use of high yielding varieties instead of unimproved non-cloned material. As losses due to pests and diseases are estimated to be around 40%, integrated pest management is another important issue. Agricultural practices will need to be adapted to the high yielding material, which will require farmer training.

In Côte d’Ivoire and Ghana, with little new land available for cocoa, significant increases in production can only come from yield increases. In Indonesia land is available but yields could remain threatened by the Cocoa Pod Borer.

**Market structure and major market players**

Major market players are the large processors and distributors for the chocolate confectionery and food industries, including Cargill, Blommer, Archer Daniels Midland and Barry Callebaut. The consumer chocolate market is dominated by Nestlé, Mars, Hershey Foods, Kraft Jacobs Suchard, Cadbury Schweppes and Ferrero.

Certain traders, processors, and manufacturers tend to work together, though of course these relationships are subject to competitive pressures. A rough mapping of relationships between traders, processors, and manufacturers follows:

While traders tend to have more direct relationships with producers than the chocolate manufacturers, traders take their cues from manufacturers’ requests. Therefore, BACP could work with manufacturers on creating market pull and with traders on local implementation.

Figures 1 and 2 below show the complex interrelationships between different parties in the cocoa supply chain in Côte d’Ivoire, and also illustrate the pyramidal form of this chain, where the product of hundreds of thousands of farmers is exported via only a handful of companies. While chocolate manufacturers receive media attention over labor or other Corporate Social Responsibility issues related to cocoa production, they typically do not have direct relationships with the farmers from whom they purchase.

**V. FINANCE**

**Côte d’Ivoire**

The finance needs of cocoa farmers fall into three categories: finance for inputs, consumptive credit, and finance for investment. Inputs for growing cocoa include pesticides, herbicides, and planting material. A farmer’s annual expense for such inputs is on the order to US$100. The timing of input purchases relative to cocoa payments generally implies a six- to nine-month term.

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40 Information gathered for this section is in great part confidential and cannot be provided here.
Farmers also need consumptive credit, i.e., credit that is not related to production. This could cover such costs as school fees and uniforms, which must be paid for in September – a good three months before the cocoa crop is ready for market. Sometimes needy farmers are forced into unfavorable arrangements with local buyers who provide credit in exchange for a portion of the anticipated harvest.

Cocoa cooperatives need very short-term finance (on the order of a week) for purchases. This is because cooperatives need time in order to accumulate bags in a volume sufficient to make a sale to a buyer, creating a lag between the time the farmer gives the bag to the cooperative, and the time the cooperative has received funds from the buyer and can pay the farmer. Farmers and cooperatives can only borrow from local money markets and are therefore subject to high local interest rates, which can be 20% or more annually in Ghana and Côte d'Ivoire. International traders are able to borrow at much lower international rates. While in principle they can pass on to cocoa growers the benefits of these lower interest rates, in practice it takes several years to build up trust between an international trader and local parties. International traders only offer financing to the few cooperatives they feel they can trust. Pesticide companies also offer some sort of financing to farmers.

**Ghana**

In Ghana, Cocobod is the sole party buying cocoa from farmers. Cocobod is able to get credit on the international market to cover the short-term finance needs described above. Individual farmers still need input and consumptive credits. The cooperative Kuapa Kokoo has a credit union that offers these services.
Figure 1: Cocoa Value Chain for Côte d’Ivoire

Côte d’Ivoire Cocoa Pipeline
- Plantations, Estates
- "Up-country" buying stations
- Local Grinding
- Local Chocolate Manufacturers
- Côte d’Ivoire Ports: Abidjan, San Pedro
- Other Raws - milk, sugar, packaging

Farmers
- Cocoa growing, harvesting, pod breaking, fermentation, drying
- Growing food crops
- Transport, blending, bagging, re-bagging, drying

Pisteurs
- Cocoa import, marketing
- Quality checks, transport, drying, blending, bagging

Traîteurs
- Cleaning, blending, roasting, pressing, alkalisation, blocking, bulk transport
- Attorney Work Product

Exporters
- Cleaning, blending, bagging
- (export bags), packing, shipping

Inspection Agency
- Fumigation (Min of Ag approved)

Handling Agent
- Unloading, fumigation

Warehouse (Europe/USA)
- Storage, cleaning, bulk transport

Grinders (Europe/USA)
- Cleaning, blending, roasting

Chocolate Manufacturers
- Bulk liquor, block butter, powder
- Ice Cream, Baking, Drinks

Source: Martin Gilmour – The Cocoa

Consumer

Distributor, Wholesalers
- C&I, supermarkets, (grocery), vending

Local Consumers
- Securing bean supply for exporters, grinders

Source: Martin Gilmour – The Cocoa
Figure 2: Number of participants in the Côte d’Ivoire Supply Chain, from farmers to export

**Numbers of participants**

700,000 - 1,000,000 **Farmers**

Around 5,000 **Pisteurs**

Around 250 **Traitants**

30 **Exporters**

4 - 6 **Shipping Lines**

**Tonnages of cocoa**

Produce 0.5 - 3 tonnes

Collects 100 - 200 tonnes

Collect and transport 500 - 10,000 tonnes

Process and export 10,000 - 60,000 tonnes

Ship over 100,000 tonnes

*Source: Martin Gilmour – The Cocoa Pipeline of Côte d’Ivoire*
VI. MARKET TRENDS

General. According to a 2000 report from LMC International Ltd., global consumption of cocoa increased by 3% on average over a period of 50 years\(^{41}\). Despite a dip in the 2008/2009 grindings forecast of 6.7\(^{\%}\)\(^{42}\), the ICCO expects that long-term consumption of cocoa will continue along a growth trend and notes that consumption has increased on average by 3.8\(^{\%}\) in the last five years\(^{43}\).

Organic and Fair Trade Cocoa. Organic cocoa is a niche product, representing less than 0.5\(^{\%}\) of the market despite 10-15\(^{\%}\) growth in recent years. The main challenges faced by organic cocoa production are quality of the beans, continuity of supply, logistics, quality of certification and simplification of procedures. While the high cost of pesticides and fertilizers equate to much cocoa being *de facto* organic, certification costs and requirements have led the Dominican Republic and other South American producers to be the world leaders in certified organic production, representing 70\(^{\%}\) of organic sales despite holding a mere 13\(^{\%}\) of the conventional market\(^{44}\). It is estimated that consumers in the US will pay a 20\(^{\%}\) premium for certified organic products\(^{45}\), but price premiums for organic cocoa fluctuate depending upon the market. Fair trade cocoa guarantees a $200 per ton price premium, but it occupies an even smaller niche market than organic, with 2005 exports estimated by Fair Trade Labeling Organization at just under 4000 T\(^{46}\).

*Demand for biodiversity-friendly cocoa*

There is no demand for “biodiversity-friendly” cocoa as such. The next closest category of cocoa would be RA-certified cocoa, which both Kraft and Mars have committed to using in their mainstream production lines. The demand for organic and fair trade cocoa is growing steadily, but is expected to remain niche markets. While “organic” and “fair trade” are concepts consumers are aware of, “biodiversity-friendly” is a new concept with no formal constituency or recognition (and may not need to acquire it in a “branded” way).

*Attributes of biodiversity-friendly cocoa.* There is no evidence at this time that biodiversity-friendly cocoa would have special attributes related to flavor or quality, though little or no research has been done on this topic. At this point, it is possible that cocoa produced in a healthy and diverse agro-forestry system might have slightly different characteristics given the changes in the leaf litter on the ground and subsequent changes in the soil composition, but it’s hard to tell if that change would be perceptible. One could also say that a farmer who is careful about the farm, who works it well, generally produces better beans, and one could suppose that a farmer

\(^{41}\) [http://www.treecrops.org/crops/cocoaoutlook.pdf](http://www.treecrops.org/crops/cocoaoutlook.pdf)

\(^{42}\) [http://www.icco.org/about/press2.aspx?id=q5u11312](http://www.icco.org/about/press2.aspx?id=q5u11312)


who’d received biodiversity training would indeed take better care of the farm, but one can’t really put a dollar value on this or infer that the cocoa produced will be of higher quality in a specific way. Other potential benefits of biodiversity-friendly production (longer farm lifetime, security of supply, traceability, brand reputation, access to product, etc) are not yet drivers of demand.

**Book and claim vs. full traceability.** Book and claim systems would probably be a workable option for purchases of biodiversity-friendly cocoa. Cocoa in now mostly shipped in containers rather than in individual bags. Full traceability could be too complicated, and is not even being considered for the child labor issues. Full traceability might be desirable for reputational reasons in the case of organic cocoa (where, for example, if a retail sample tests positive for agrochemicals, one would want to be able to know the farm it came from) but in the case of biodiversity-friendly cocoa, there’s no difference to the end consumer, nothing that can be tested for.

**VII. POSITIONS AND ACTIONS OF POTENTIAL PARTNERS**

The international workshop on sustainable cocoa production which took place in 1998 in Panama is generally considered as the starting point for stakeholders’ awareness on environmental issues in the cocoa sector. In a follow-up “Paris Declaration” in 1999, industry stakeholders committed to develop a “sustainable cocoa production” system. This group formally created the Coordination Group on Sustainable Cocoa in October 2000 in Malaysia. Chaired by COPAL (Cocoa Producers Alliance) and supported by ICCO, the different working groups of this multi-stakeholders’ initiative further study the various issues to be addressed to reach sustainability. The group lost momentum as industry’s focus shifted to the child labor issue.

Indeed, for Corporate Social Responsibility departments in the cocoa industry and for relevant government departments, the primary concern related to cocoa production has, until recently, been largely focused on social rather than environmental issues. The issue of child labor (or even slave labor) on cocoa farms has gotten a tremendous amount of media and political attention in the US and the UK, and the industry is under pressure to address this. Nevertheless, several major cocoa companies and organization have increasingly been emphasizing environmental issues in the last few years and some notable private sector initiatives include:

- In 2006, Kraft partnered with RA and others to train and certify Ivoirian farmers according to the RA standard for sustainable agriculture. The two year project resulted in over 2000 farmers and 8 cooperatives gaining RA certification. Kraft uses the new certified supply stream for its Suchard Hot Chocolate products. Kraft has recently been in the press indicating an expansion of its RA purchases to 30,000 tons by 2012.

- In partnership with the Earthwatch Institute (Europe) and the Ghana Nature Conservation Research Centre (NRC). Cadbury’s Earthshare program aims to improve biodiversity levels of cocoa farms in Ghana. The project aims to re-establish cocoa on land once used

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47 [http://www.kraftfoods.co.uk/kraft/page?siteid=kraft-prd&locale=unken1&PageRef=2544&Mid=2536](http://www.kraftfoods.co.uk/kraft/page?siteid=kraft-prd&locale=unken1&PageRef=2544&Mid=2536)

to grow it, a more ecologically balanced environment that provides a diversified habitat for birds and other wildlife and which increases cocoa yield and boosts farmers’ long term financial security. Cadbury’s Cocoa Partnership, established in 2008 in partnership with the UNDP and local governments and farmers in Ghana, India, Indonesia and the Caribbean aims to secure the economic, social and environmental sustainability of a million cocoa farmers. The program has been launched in 100 communities in Ghana. And finally, in partnership with FairTrade, Cadbury has taken steps to triple the sale of FairTrade cocoa in Ghana with its plans to achieve FairTrade certification for its Cadbury Dairy Milk by mid 200949.

- Ahold, Cargill, Heinz Benelux, Mars, Nestlé, ECOM, Chocolat Frey and Ludwig Schokolade all joined Utz Certified, Solidaridad, Oxfam Novib and WWF in the development of a mainstream cocoa certification and traceability system for sustainable cocoa. A draft code of conduct has been created, pilot projects have been underway in four Ivoirian cooperatives since 2008, ANADER has launched 40 farmer field schools, and STCP has developed the complementary training materials. It is expected that pilot results will feed the final code of conduct draft, due in mid 200950.

- Mars, which has committed to certifying 100% of their cocoa supply to Rainforest Alliances’ (RA) standard by 2020, will continue to pursue Utz certification for its cocoa producers in West Africa, and has committed US$4.5m “to provide economic, educational and environmental assistance to cocoa growing communities and individuals in West Africa”51.

- The Cocoa Livelihoods Program is a five-year, $23 million Gates Foundation program in Côte d’Ivoire, Ghana, Cameroon, Nigeria, and Liberia that will focus on enhancing farmer knowledge and competitiveness, improving productivity and quality, promoting crop diversification and improving supply chain efficiency to improve cocoa community well-being. Managed by the World Cocoa Foundation, the project will be implemented through a consortium including ACDI/VOCA, GTZ, IITA, STCP, SOCODEVI, and TechnoServe. Funds from the Gates Foundation will be combined with over $17million in financial and in-kind support from private sector actors, including Hershey’s, Kraft and Mars, ADM, Barry Callebaut, Blommer Chocolate Company, Cargill, Armajaro, Ecom-Agrocacao, Olam, and Starbucks.

**Roundtables and industry groups**

**Roundtables.** The cocoa industry has no parallel to the sustainability roundtables in palm oil, sugarcane, soy or cotton, although Roundtable for a Sustainable Cocoa Economy (RSCE), which is primarily NGO based, has attempted to address this gap. While some good progress has been

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49 [http://www.cadbury.com/ourresponsibilities/cadburycocoapartnership/Pages/cadburycocoapartnership.aspx](http://www.cadbury.com/ourresponsibilities/cadburycocoapartnership/Pages/cadburycocoapartnership.aspx)


made to date by the RSCE, it does not yet have wide industry support, and it’s not clear yet whether the initiative will succeed. Cocoa’s smallholder base forms a challenge, in that it appears difficult for roundtable members to directly affect production practices. Direct farmer training, as has been done through various initiatives discussed in this MTS, appears to be the most effective means of changing farmers’ production practices. Further details can be found at www.roundtablecocoa.org.

**World Cocoa Foundation.** Members include six industry associations (ex: Chocolate Manufacturers’ Association) and major chocolate manufacturers and cocoa traders, as well as specialty chocolatiers. The WCF Partnership meetings are held twice a year, alternately in Europe and at WCF’s headquarters in Washington DC. BACP should attend these meetings as they are an excellent networking opportunity. The market changes quickly and the meetings are a good way to keep on market evolution.

The World Cocoa Foundation has recently adopted sustainable cocoa principles, stating that its mission is to “promote a sustainable cocoa economy through economic and social development and environmental conservation” by supporting activities such as the preservation of biological varieties and agroforestry stewardship. WCF has also been approached by its membership to act as convener between the various certification bodies in the pursuit of a platform of common criteria, representing a mainstream push for greater certification. Activities under this initiative have kicked off in early July 2009 and are ongoing. Further details of WCF can be found at www.wcf.org.

**International Cocoa Organization (ICCO).** Founded in 1973 and based in London, the ICCO works to support a sustainable world cocoa economy (in part through support to the RSCE), with regard to social, economic, and environmental aspects of production and consumption through promotion of an International Cocoa Agreement. Over 85% of cocoa producer countries and 60% of consumer countries are members of the ICCO, and as of 2005, 80% of producer countries became signatories of the International Cocoa Agreement. The ICCO also serves as a clearinghouse of cocoa-related information and market. Further details of ICCO may be found at www.icco.org.

**STCP – Farmer field schools.** The Sustainable Tree Crops Program (STCP) is a public-private partnership that was launched in 2000 by West and Central African cocoa stakeholders, the global cocoa industry, the World Cocoa Foundation, and USAID, and is managed by the International Institute of Tropical Agriculture (IITA). STCP seeks to generate growth in rural income and stimulate higher productivity among tree crop farmers in an environmentally and socially responsible manner in West/Central Africa. STCP is engaged with public and private partners in Côte d’Ivoire, Ghana, Nigeria, Cameroon, and Liberia to identify the potential of the cocoa sector in contributing to rural transformation. The program is currently in its second phase, scheduled to run through 2011 with a mandate to train 125,000 cocoa farmers in West Africa. Further details of STCP may be found at www.treecrops.org.

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53 Based on email correspondence with Bill Guyton of WCF.
INAFORESTA. An international voluntary group that includes among its objectives “to decrease or mitigate the negative impacts of cocoa cultivation on forest cover and enhance the contribution of cocoa cultivation to local and global ecological systems.” Members are Conservation International, Mars, the International Institute for Tropical Agriculture, the World Agroforestry Center, and the CATIE. Main contact at World Agroforestry Center, Nairobi, Kenya. Further details can be found at www.worldagroforestry.org/treesandmarkets/inaforestay.

International Cocoa Initiative. Mostly focused on child labor issues. Members include anti-slavery NGOs, Unions, as well as Mars Incorporated, Hershey Foods, Cadbury, Nestlé, the European Cocoa Association and the International Confectionery Association (two trade associations representing cocoa processors, trade and logistics companies and global confectionery manufacturers respectively). Based near Geneva, Switzerland. Further details can be found at www.cocoainitiative.org.

Cocoa Sustainability Partnership. Founded in 2006 with participation from Mars, IFC, and various local stakeholders, the CSP sought to create greater collaboration, partnership, and knowledge sharing amongst the many field activities underway in Indonesia. CSP now includes three sub committees that focus on technology development, technology transfer, and farmer empowerment and a website for information dissemination. Further details can be found at www.cspindonesia.org.

Cocoa Association of Asia (CAA) – is an industry organization representing the cocoa industry in Asia with 20 members involved including IFC. CAA is increasingly becoming involved in sustainability initiatives in the region and an example of this is their support of a recent project in Papua New Guinea focusing on Cocoa Pod Borer awareness and support. Further details of CAA can be found at http://cocoa-association-asia.org/member.html.

SAI Platform. The Sustainable Agriculture Initiative (SAI) Platform was created by the food industry to actively support the development of and to communicate worldwide about sustainable agriculture involving the different stakeholders of the food chain. Members include major cocoa buyers such as Nestlé, ECOM, Kraft. While the organization set up an internal workgroup on sustainable cocoa sourcing, cocoa is not currently included as a priority commodity. After initial discussions during the BACP program preparation phase a preliminary proposal for cooperation between BACP and SAI Platform focusing on “demand-side activities” for sustainable cocoa was developed by the BACP team and submitted to the SAI Platform Executive Board meeting on 22 February 2006 for discussion (Eventually, the proposal did not receive board approval). However, in follow-up discussions, the SAI Platform indicated that SAI Platform may participate in the creation of a cocoa multi-stakeholder initiative roundtable if convened by IFC/World Bank Group. Further details maybe found at www.saiplatform.org.