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### Acronyms

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<tr>
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<th>Description</th>
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<tr>
<td>CocoaMAP</td>
<td>Cocoa Measurement and Progress</td>
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<tr>
<td>GoN</td>
<td>Government of Nigeria</td>
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<tr>
<td>Ha</td>
<td>Hectare</td>
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<tr>
<td>ICCO</td>
<td>International Cocoa Organization</td>
</tr>
<tr>
<td>MT</td>
<td>Million metric ton</td>
</tr>
<tr>
<td>mt</td>
<td>Metric ton</td>
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<tr>
<td>WCF</td>
<td>World Cocoa Foundation</td>
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Executive Summary

The MARKETS II project began in late April 2012 with the objective to increase the competitiveness of selected agricultural commodity value chains by strengthening linkages between value chain actors, improving access to inputs and finance, deploying and disseminating technologies to new users, and by building the capacity of all value chain actors through technical assistance.

MARKETS II builds off the success of the MARKETS (2005 – 2010) and Bridge to MARKETS II (2011 – 2012) projects. It is designed to go deeper in fewer value chains (four to five), and achieve greater impact. Furthermore, MARKETS II is expected to concentrate its efforts in up to ten key states. By concentrating its resources on a reduced number of value chains and states, USAID will be better able to assess its impact on targeted value chains and beneficiaries.

In May 2012, a number of selection criteria were developed to select value chains for further analysis. These criteria included low-entry threshold for women, youth, and vulnerable groups; the geographical spread of the commodity; the importance of the commodity in the GON Agricultural Transformation Agenda; the possibility of deploying new, low-cost technologies; and whether the commodity falls within the MARKETS II smallholder farmer mandate.

Based on this selection process, the following value chains were selected for further analysis: cassava, sorghum, rice, cocoa, and aquaculture. Maize and soybean were also selected as they are the main ingredients of fish feed, and the lack of quality fish feed is one of the primary constraints of the aquaculture value chain.

Teams of MARKETS II staff and locally hired value chain experts conducted field research using questionnaires with key informants and holding open ended focus group discussions with a large number of stakeholders including producers, processors, traders, input suppliers, service providers, and policy makers.¹

A series of half day validation workshops were organized with participation of a cross-section of the stakeholders surveyed. The methodology is described in further detail in Annex I.

The Cocoa Sector

In recent years, global cocoa production has increased and is expected to reach 3.6 million metric tons in 2011-12, up by 6.6 percent from 2004-2005. Global cocoa production is dominated by four West African countries: Côte d’Ivoire, Ghana, Nigeria and Cameroon, whereby the first two countries account for 56 percent of world production.

As 90 percent of all cocoa is destined for the manufacturing of chocolate, changing consumer preferences and concerns influence the cocoa value chain. On the one hand, consumers are becoming informed about the health benefits of darker/bitter chocolate with high cocoa powder content, while in the other hand consumers in the developed world are increasingly raising concern about the sustainability of the cocoa production sector and moral issues such as child labor. Certification schemes such as Fairtrade, organic cocoa, UTZ and Rain Forest Alliance are becoming more and more common. Sustainable, certified

¹ A detailed description of the survey methodology can be found in Annex I.
cocoa sales grew by 248% between 2005 and 2010 but still account for only 1.2 percent of the global production. 2

The cocoa value and supply chains have seen a rapid consolidation over the past decade with three grinders and six chocolate manufacturers currently dominating the sector. This is partially driven by chocolate manufacturers outsourcing raw material production to a few select companies in order to concentrate on high-value branded chocolate products. As they outsource to companies that were traditionally traders, the difference between traders and grinders becomes blurred. This concentration and vertical integration, whereby multinational companies are getting closer to the farmers, either directly or through local agents, makes it difficult to get a good picture of the actual cost structure in the value and supply chains.3

Current prices for cocoa beans are relatively high as some traders estimate a structural deficiency of close to 60,000 mt in the global supply. However cocoa prices have a long history of volatility caused by climatic conditions and political instability in the producing countries. More recently market speculation by hedge funds and other non-commercial players increased the volatility which was exposed when one large trader bought an estimated 7 percent of the global production in 2010.

While on the one hand many fear the oligopolistic position of a handful of multinational companies, it is also these same companies that are driving a move to greater sustainability in the cocoa sector and who are financing many farmer education and sustainability programs around the world. It is possible to view this fear as a result of consumer concerns, but it is also a result of an industry fear that sustainable supplies of cocoa will be compromised and the long-term viability of the supply chain will be harmed.

The Cocoa, Biscuits and Confectionery Industries of the European Union (COABISCO) raised the alarm in 1998 about growing quality problems in the cocoa sector and pointed at increasingly poor fermentation by farmers as a key issue. Since then several initiatives have been undertaken to improve the quality of fermented cocoa beans. For instance, Blommers (USA), Cemoi (France) and Petra Food (Malaysia) developed a program to install 30 central fermenting platforms serving 10,000 farmers in Côte d’Ivoire.

Nigeria remains one of the four largest producers of cocoa and an estimated 1.4 million people depend on cocoa production for their livelihood, however quality concerns, aging trees, and aging farmers are real causes for concern. Whereas Côte d’Ivoire is now the largest grinder of cocoa beans in the world (recently overtaking the Netherlands), Nigerian grinding capacity is estimated at 200,000 mt and Nigeria hardly ground more than 40,000 mt in 2011.4 Tulip Cocoa Processing Ltd. told Tell newspaper in 2011 that they were seriously considering relocating to Ghana because of Nigeria’s difficult business climate. Cargill, the world’s second largest cocoa grinder, pulled out of Nigeria in 2007 and relocated to Ghana.

Nigeria’s high cost of doing business is one of the main reasons why cocoa grinders are relocating to Ghana. While international companies have access to finance at single digit interest rates, local companies need to cope with rates as high as 25%, putting them at a competitive disadvantage. In addition, as the Managing Director of Tulip Cocoa Processing Ltd. pointed out, there are at least 16 different charges, taxes and levies to be paid between the farm gate and final destination.5

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2 ACT. Agritrade, executive brief 2011.
3 For a detailed analysis of the cocoa supply chain and both vertical and horizontal integration see: http://r0.unctad.org/infocomm/comm_docs/docs/official/ditccom20081.en.pdf
4 Cocoa Processors Association of Nigeria as reported by Reuters, March 2011.
5 TELL, 15/03/2011
During the cocoa validation workshop that followed the value chain survey and initial data analysis, several strategic priorities for MARKETS II interventions in the value chain were formulated (see Chapter C). These strategic priorities include a push towards making improved seedlings more widely available, developing innovative downstream input distribution systems to give farmers better access to inputs, involving youth in cocoa farming through curriculum development for primary and secondary schools, and MARKETS II support for certification schemes. In Chapter D, conclusions and actions for MARKETS II, we will indicate where MARKETS II could help facilitate system change in the value chain.
Setting the scene

Feeding Africa
The world food crisis in 2007-08, during which food prices experienced their sharpest rise in 30 years, leading to food riots in many parts of the world, focused global attention on the importance of agriculture. After decades of neglect, investment in agriculture is now on the rise. A notable example in Sub-Saharan Africa is Malawi, which spent as much as 4.2 percent of its GDP on a fertilizer subsidy scheme that moved the country from being a net importer of grain to an exporter to the region. Unfortunately, the amount of the subsidy was not one Malawi could sustain in the long run.

*The Food and Agriculture Organization estimates that to keep pace with demand, developing countries will have to double food output by 2050. This amounts to a 70 percent rise in food production.*

While the situation has temporarily eased, fundamental issues have not gone away. At the heart of the developing world’s agricultural challenge is the basic issue that demand is rising faster than supply can keep up.

Population growth, urbanization, and increasing incomes are leading to a shift in consumption from grains to meat in developing countries, requiring greater grain production for feed. In parallel, demand for biofuels is consuming more of the grain production from the large grain exporting countries. On the supply side, land under cultivation has increased but is nearing saturation, and yield growth in cereals is declining, from three to six percent a year levels during the Green Revolution in the 1960s to nearer one to two percent today. In some developing countries, yields are flat.

Not even flat

Agricultural production per capita, 1964-2006

Since 1960, output in Africa has increased by 2.4%, while its population has grown at 2.6%, resulting in food aid requirements that are 4 times higher than other regions.

Source: The Economist; “Whatever happened to the food crisis”; June 2009
Nigeria Cocoa Value Chain Analysis

Writing about the state of agriculture in Africa, economist Jeffery Sachs summarizes the challenge and solutions:

“...many poor countries'...farmers are producing far below what is technologically possible.”

“Traditional farming uses few inputs and gets poor yields. Poor peasants use their own seeds from the preceding season, lack fertilizer, depend on rain rather than irrigation, and have little if any mechanization beyond a traditional hoe. Their farms are small, perhaps one hectare (2.5 acres) or less. Under traditional agricultural conditions, the yields of grain – rice, wheat, maize, sorghum, or millet – are usually around one ton per hectare, for one planting season per year.”

The key: “There is nothing magic about [a] combination of high-yield seeds, fertilizer, and small-scale irrigation.”

Nigeria’s Trade Patterns

Nigeria’s import base is expectedly diverse, as are its trading partners. While manufactured goods dominate its imports, food products – namely cereals and fish – also feature in its top 10 imports. Import substitution is therefore seen by policy makers as a driver toward achieving self-sufficiency in key agricultural commodities.

Oil is king, dominating Nigeria’s exports, enabling the country to run a trade surplus. If one excludes oil, this picture changes dramatically, with imports dwarfing Nigeria's non-oil exports. Non-oil exports are indeed growing fast, at a rate of 80 percent a year, albeit from a negligible base, as Nigeria diversifies its economy away from dependence on oil.

A study that looked at the drivers of Nigeria’s growth compared with other African oil producers showed that oil accounted for only 35 percent of the country’s growth between 2002-07, compared to 86 percent for Angola. Agriculture accounted for an encouraging 27 percent of Nigeria’s growth, and services for 37 percent. However, manufacturing accounted for a paltry one percent of total growth, which is concerning for the agricultural processing sector.

Source: ITC data, MARKETS II analysis.
sector. The factors that are inhibiting the growth of the manufacturing sector in Nigeria will similarly affect agricultural processors, from the erratic availability of power to the high costs of transportation.


**Top 10 exports**

Exports by value, US$ thousands

<table>
<thead>
<tr>
<th>Year</th>
<th>Other</th>
<th>Fish</th>
<th>Cotton</th>
<th>Machinery</th>
<th>Oil seed, grain</th>
<th>Plastics</th>
<th>Rubber articles</th>
<th>Ships/float platforms</th>
<th>Cocoa</th>
<th>Hides and skins</th>
<th>Minerals</th>
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<tr>
<td>2006</td>
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Imports vs. exports, US$ thousands

Non-oil imports vs exports

Source: ITC data, MARKETS II analysis.
Agricultural Financial Services: A Crosscutting Activity

Nigeria’s agricultural sector lacks adequate capital at every level: too little investment in processing, limited working capital for intermediaries, and few appropriate financial products, such as leasing and smallholder credit, to address farmers’ needs. At the same time support to Nigeria’s financial institutions has been substantial, with loan guarantee funds and credit schemes from Central Bank of Nigeria (CBN) and other donors.

The biggest challenge stakeholders face when trying to access credit is the inability of financial institutions to provide credit at the producer level. From the banks’ perspective, producers are unorganized and transaction costs are high. Even when adopting a value chain approach to finance, banks and processors face side selling by farmers which can result in loan defaults.

Challenges
The main challenges in agricultural finance can be summarized as follows:

- Record-keeping by small-scale farmers is rare. This limits the ability of commercial bank staff to analyze the profitability of prospective loans.
- Banks believe agricultural lending is risky and unprofitable.
- Most commercial bank staff do not understand agricultural lending. They knowledge from conventional banking to agricultural lending, leading to problems such as approving loans after the agricultural season is nearly over.
- Smallholder farmers tend to be unorganized and lack group cohesion to access credit from lending institutions.
- Agreements between farmers, buyers and banks are not respected by all parties, resulting in a breakdown in trust and inefficiencies in the value chain.

Solutions
The challenges in agricultural finance are many, and so the solutions are complex. Some ideas for where to focus efforts include:

- Build farmer capacity for basic record keeping and business skills.
- Train commercial bank staff on agricultural lending, including crop cycles, cost of production, risk management, and profitability models.
- Support farmer group formation and train on group dynamics and the benefits of membership.
- Support understanding of the advantages of pricing and off-take arrangements between farmers and processors, and the long-run benefits of honoring contracts.
- Support development of standard warehousing arrangements and a regulated commodity exchange.
- Support deregulation of crop and other agricultural insurance.
- Support the rollout of the Nigerian Incentive Risk Sharing Agricultural Lending (NIRSAL), CBN’s new strategic new guarantee mechanism.
- Strengthen private sector distribution of inputs, with oversight and regulation by the government.
1. **Global Context**

1.1. **Chocolate Consumption is the Driver**

The chocolate industry uses 90% of the global cocoa production and changing trends in consumer behavior will influence the cocoa value chain.\(^6\)

There are currently three distinctive trends in consumer behavior:

- The economic downturn has affected spending on luxury goods such as premium chocolate. Eastern Europe was, until recently, the fastest growing market for chocolate products but has been badly affected by the economic crisis. There are indications that consumers have returned to the premium chocolate segment, yet at the same time, consumption of cheaper confectionary chocolate with lower cocoa content has increased.

- The perceived health benefits of dark chocolate are widely accepted by consumers. As a result, the consumption of bitter/darker, premium chocolate with a higher percentage of cocoa content has increased steadily over the past years. Scientific studies have shown that cocoa and dark chocolate contain high levels of anti-oxidants called flavonoids which have beneficial effects on the human body such as lowering blood pressure.

- Concerns regarding sustainable production are influencing consumer behavior and choice, especially in North America and Europe. Cocoa and coffee are among the only commodities that have attracted strong consumer concerns about sustainability, environmentally sound production, and child labor.\(^7\)

These last two trends lead to the demand for cocoa that is produced in a socially and environmentally sound manner and for products derived from cocoa that contain a high percentage of cocoa content. Overall the market for premium chocolate (high cocoa content and certified) is expanding at over 10% per annum worldwide.\(^8\)

1.2. **Governance**

In 1973, the London-based International Cocoa Organization (ICCO) was established as an intergovernmental organization under the auspices of the United Nations. ICCO has coordinated and administered several International Cocoa Agreements with the aim of promoting balanced market development based on price support and the maintenance of buffer stocks. The current International Cocoa Agreement which came into force in 2003 is “to maintain a sustainable cocoa economy through dialogue with private sector players”. This is a reflection of the growing consumer concerns regarding several social and economic issues in the sector.

ICCO also supports the Word Cocoa Foundation (WCF) which was created in 2000 by a group of companies including ADM, Armajaro, Barry Callebaut, Nestle, Cargill, etc. The WCF aims to promote and coordinate sustainable cocoa community development.

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\(^6\) The remaining ten percent is used in the food and beverage industry and a very small percentage in the pharmaceutical and cosmetics industry.

\(^7\) Some commentators connect the consumption of luxury goods with a feeling of guilt by the consumer not normally felt when consuming other commodities.

\(^8\) Tropical Commodity Coalition (2009).
1.3. Concentration in the Industry
The world cocoa sector is dominated by three grinders (ADM, Cargill and Barry Callebaut) and six chocolate/confectionery manufacturers (Mars, Nestle, Cadbury, Hershey and Ferrero). The concentration of the industry in the hands of a few reduces the negotiating power of farmers and farmer organizations. For example, in Côte d’Ivoire in 2010, ten companies—of which nine are subsidiaries of multi-national companies—handled 950,000 mt, or close to 70 percent of the country’s cocoa trade.\(^9\) There is a strong tendency toward backwards integration with an increasing number of companies getting directly involved with farmers and expanding grinding operations in the producing countries.

1.4. Certification
Cocoa certification plays a very important part in the marketing strategies of the major cocoa buyers and chocolate manufacturers. There are currently four certification schemes in operation worldwide:

- **Fairtrade**: Fairtrade mainly certifies small holder farmers with less than 10 hectares of land. Fairtrade market share is estimated at less than 3% of the global cocoa market.
- **Organic**: 2010 estimates put the share of organically produced cocoa at less than 1% of the global cocoa market. Between 40-50% of the organic certified cocoa enters the EU. Approximately 50% of the certified organic cocoa is also Fairtrade certified. This double certified cocoa represents the fastest growing segment in the global chocolate market.
- **UTZ certified**: UTZ certification started in 2009 with a certified volume of 5,400 mt. This volume grew to 20,000 mt in 2010. Almost all UTZ certified cocoa is destined for Europe. UTZ is likely to become one of the most broadly accepted certification standard thanks to strong support from the major players such as Cargill, Mars, Nestle and Ahold, a major Dutch supermarket chain.
- **Rainforest Alliance**: Initially most popular in the US market, Rainforest Alliance certification is gaining ground in Europe. In 2010 an estimated 25,000 mt of cocoa was Rainforest Alliance certified.

A new certification scheme called Certification Capacity Enhancement (CCE) tries to combine Fairtrade with Rainforest Alliance and UTZ certification schemes. The development of CCE as a certification scheme is funded by large players such as Mars and ADM.

Apart from social and environmental issues there is an increasing demand for traceable and single origin cocoa. Not only do cocoa buyers increasingly demand traceability, cocoa buyers worldwide are becoming progressively more strict regarding processing. The fermentation process—which strongly influences the final quality—has especially come under closer monitoring by buyers.\(^10\)

Increased consumer demand for certified cocoa and regulatory demands on traceability and processing have led almost all global companies to get closer to the producers. In addition to better communication with producers, many companies have developed projects that ensure the conservation of biodiversity hotspots and/or the development of smallholder farmer skills through training. The following section provides examples of these programs.

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\(^10\) The Processors Alliance for Cocoa Traceability and Sustainability (PACTS) aims to construct 30 fermentation centers in Côte d’Ivoire serving 10,000 farmers to ferment their cocoa at high standards.
1.5. Selected Projects aimed at Increasing Farmer Skills and Livelihood

1. The Empowering Cocoa Households with Opportunities and Education Solutions (ECHOES) is a public private project between the World Cocoa Foundation (WCF) and USAID implemented in Côte d'Ivoire and Ghana.

2. WCF has, in addition to ECHOES, two other flagship projects:
   - Cocoa livelihood program.
   - Africa Cocoa Initiative.

3. Blommers (the largest US cocoa processor with a global market share of 5.3%) started PACTS in 2010 in collaboration with Cemoi chocolatier (France) and Petra Foods (Malaysia). PACTS will train farmers in cocoa production and will establish 30 fermentation centers serving 10,000 farmers in Côte d'Ivoire.

4. Blommers, in 2012, signed a joint venture agreement with OLAM called ‘Grow Cocoa’. The program aims to reach 100,000 farmers by 2015.

5. At grinder level there are several programs such as the Quality Partner program (Barry Callebaut), the Socially and Environmentally Responsible Agricultural Practices – SERAP program (ADM) and Cargill’s Farmer Field School Program.

6. Cadbury introduced the Golden Cocoa project in India as part of its social responsibility program. Over 100,000 Indian farmers received training and improved seedlings.

7. Armajaro implemented its Source Trust program in several countries including Nigeria, and aims to reach 20,000 farmers by 2012.

8. Mars implemented a Cocoa Sustainability Partnership Program.

9. ECOM (present in Nigeria as Yara Commodities Ltd) has trained farmer groups in Internal Control Systems and UTZ certified about 1,000 farmers.

The Tropical Commodity Coalition (TCC) estimates that through all these various programs about 10% of the estimated 5.5 million cocoa farmers worldwide have received some form of training. TCC poses questions regarding transparency in measuring results as there is no agreement on how results should be measured. This lack of transparency could, in the long term, negatively influence public perception. There is a clear need for all stakeholders to reduce complexity and develop accepted indicators and select processes that can be implemented. A first step in this direction is the harmonization of certification standards under the CEE certification. A second step is the creation of CocoaMAP by ICCO.

1.6. Cocoa MAP

ICCO will design, develop and launch Cocoa Measurement and Progress (CocoaMAP) at the end of 2012. CocoaMAP will be a global platform of critical cocoa indicators developed with multi-stakeholder inputs which will track progress in the global effort to achieve sustainable cocoa production through a set of indicators and measurements that have been credibly verified. CocoaMAP aims to widely disseminate (1) the big picture of how much cocoa is produced, how many farmers are involved, how much land is used and the cocoa price and, (2) the impacts of cocoa production, including health and prosperity of farming families and communities, the environment, sustainable practices, certification and future generations. 11

1.7. Price volatility

Cocoa prices are volatile and influenced by a large number of factors. To illustrate this volatility, November 2000 prices were at a 27 year low at $714/mt but reached a 32 year high in March 2011 at $3,775/mt. This high volatility has serious consequences for all actors in the value chain.

11 CocoaMAP is supported by amongst others USAID.
According to Fairtrade, long term price trends are affected by:12

- Changes in supply and demand
- The ratio between stocks and grindings (a falling ratio pushes up the prices)
- Corporate acquisitions and disinvestment in the cocoa trade and processing industry

Short term trends are affected by:

- Weather conditions in the producing countries
- Disease and pest infestations and poor crop management
- Cost and availability of pesticides and fertilizers
- Speculation by withholding stocks
- Political instability in producing countries13
- Speculative trading on futures markets14

In May 2012 (latest ICCO data available) the daily cocoa price averaged $2,314, up by $47 from the previous month. Although ICCO revised its deficit forecast from 71,000 mt to 43,000 mt, global production is set to fall by 7 percent compared to the previous season. As demand outstrips supply, further price increases are likely. Should El Nino weather conditions develop at the end of 2012, this would exacerbate a potential global cocoa deficit in 2012/13.15

2. The Regional Context

Four of the five biggest cocoa producing countries (Côte d’Ivoire, Ghana, Nigeria and Cameroon) are located in West Africa. Côte d’Ivoire is the world largest producer followed by Ghana. An estimated 14.7 million people in the region depend on cocoa for at least part of their livelihood and cocoa is major foreign exchange earner, although in the case of Nigeria this is almost negligible (0.4 percent).

Nigeria has the lowest yield per hectare (350 kg) in the region, influenced in part by declining soil fertility (estimated losses 50 percent), and has relatively high losses due to diseases and pests (estimated 23 percent). In contrast, farmers in Ghana average 1.5 mt/ha while farmers in Indonesia harvest 2 mt/ha. Ghana recently joined Côte d’Ivoire in the one million metric ton club.

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12 Fairtrade: Cocoa sector overview. Not yet published.
13 Favorable weather conditions in Côte d’Ivoire (the world’s largest producer) were partly the reason for the world market price to hit a 27 year low in 2000 of $714/mt. Côte d’Ivoire’s first civil war started in 2002 and caused world market prices to climb to $2,335. In 2010, Côte d’Ivoire’s second civil war started and a ban on exports pushed world market prices to a 36 year high of $3,775.
14 According to the WCF, cocoa future prices are highly influenced by hedge funds and speculators. In 2010, the hedge fund arm of British commodities firm Armajaro bought 7% of the world’s cocoa supply for $920 million hedging against falls in supply due to the political instability in Côte d’Ivoire.
15 The Climate Prediction Center of the US National Oceanic and Atmospheric Administration predicts a 50% possibility that El Nino weather conditions will develop at the end of 2012. El Nino weather conditions are normally favorable for West Africa and unfavorable for East Asia.
3. **The Nigerian Context**

Nigeria is still one of the four biggest cocoa producing countries in the world but production has declined both in quantitative and qualitative terms. Whereas Nigeria produced over 300,000 metric tons in the 1970s, overall production declined to an estimated 250,000 metric tons in 2010. Per hectare yields are low at an average of 350 kg, which can be attributed largely to very old trees, declining soil fertility, high pest and disease incidence and poor farm management. The Nigerian cocoa board was abolished in the 1970s, leading to many new traders without experience entering the market and buying and trading in cocoa without observing quality standards.

The GoN introduced its Agricultural Transformation Agenda (ATA) for cocoa in 2012 and has set very ambitious goals for productivity increases across the sector. The ATA is expected to lead to 1,000,000 metric tons of production by 2018.

Whereas Côte d'Ivoire has overtaken the Netherlands as the biggest cocoa grinder in the world with over 500,000 metric ton projected for 2012, Nigeria grinding in 2011 was only 20,000 mt out of an installed capacity of 200,000 mt. The underutilization of the grinding capacity in Nigeria is partly due to the high cost of energy and the late payment of the Export Expansion Guarantee (EEG) which is paid by the GoN to processors.

Nigeria’s failure to ratify the Economic Partnership Agreement (EPA) with the EU in 2008 means that Nigeria cocoa beans and cocoa products are subjected to an import tariff of between 4.6% and 6.2% depending on the state of processing. Both Ghana and Côte d'Ivoire signed the EPA which gives them a competitive advantage over Nigerian cocoa.

**UNCTAD 2010:** The value chain rewards farmers inadequately for producing quality products and achieving higher levels of productivity

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**Chapter B: Cocoa Value Chain**

1. **Cluster Map**

![Cocoa Value Chain Diagram]

**Key:**
- [ ] Undeveloped
- [ ] Needs improvement
- [ ] Competitive
The above cluster map indicates areas that are under-developed or need improvement to make Nigerian cocoa competitive again. Based on the survey data, we developed a waterfall diagram showing the cost structure and value additions in the value chain. The most striking feature of the analysis is that grinding cocoa and selling cocoa powder and cocoa butter is a loss-making proposition and any company would be better off just trading in cocoa beans.¹⁶ What provides processors with a tiny margin is the Export Expansion Guarantee (red section).

2. Crop Budgets and Waterfall Diagram

From the survey data we conclude that the profit margins for producers are very low and that only local buying agents make good margins on cocoa trading. If we take processing costs and compare that to the average price of cocoa butter and cocoa powder produced we need to conclude that processing (grinding) of cocoa in Nigeria is a loss making exercise. The Export Expansion Guarantee (EEG), which in principle pays a premium of 30 percent on value addition, would make cocoa processing in Nigeria break even or allow for a very small profit.

16 According to the Cocoa Processors Association of Nigeria (COPAN) processors lose money due to the high price of raw materials, high energy costs and late payment of the Export Expansion Guarantee (EEG).

1. Survey Data

3.1. Producer Data
A total of 36 cocoa farmers were interviewed in four states, including six women. In addition to key informant interviews, 11 focus group discussions were held with 81 farmers to confirm interview findings and solicit additional comments.
Twenty farmers reported to belong to an association. Fifteen did not belong to an association and one did not respond.

When asked about the size of their cocoa plantations, twenty one farmers reported farming between one and five hectares and fifteen farmers more than five hectares.17

**Association membership**

**Land Sizes**

**Association membership benefits**

Better marketing and access to inputs are the biggest benefits farmers get out of being association members.

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17 Hectares in cocoa plantations are very misleading as BiM2 surveys have shown. Not only do farmers overestimate the number of hectares they farm but due to its age, optimum tree populations per hectare are seldom found. In many cases, according to actual number of living and producing trees, one hectare should be counted as half a hectare or less.
Asked about access to finance to farm, a large percentage obtained loans from local buying agents and processors.

In spite of getting credit from local buying agents and processors, lack of finance is still mentioned as the largest challenge.

Processor Survey
Six processors were interviewed but data analysis did not show much of a trend since the processors were very reluctant in answering questions.

Some salient points:
- The six processors have a combined installed capacity of 110,000 mt but only use 36,000 mt. This is in line with other reports on underutilization of processing capacity in Nigeria.
- In spite of underutilization, very high numbers of employees are reported:
  - 568 permanent adult males
  - 83 casual adult males
  - 82 permanent adult females
  - 10 casual adult females
  - 103 permanent and 50 casual male youth
  - 5 permanent and 22 casual female youth
Input Dealer Survey
Eight input dealers were surveyed, two in Cross River, two in Ondo, two in Oyo and two in Osun. All surveyed input dealers were male which confirms from other surveys that agro input dealership is predominantly a male profession. Seven input dealers had been in the business for more than five years and all claim to be members of an association.

Support Services Provided

When asked what support services were provided to farmers the respondents mainly give information and product training. Only two respondents extended credit to farmers.

Logistical problems

Poor infrastructure and high transportation cost and security are key issues and could partly explain why inputs are seldom available at the village level.
Chapter C: Choices

At the end of the value chain survey, seven half day validation workshops were organized. These workshops were attended by 75 value chain stakeholders representing all sectors of the value chain. The workshops were highly interactive with a high level of participation and lively discussions. Apart from the validation of survey results, stakeholders were asked to formulate strategic priorities which could be used to guide MARKETS II activities during the coming years.

For the cocoa value chain the following strategic priorities were identified:

<table>
<thead>
<tr>
<th>Priority</th>
<th>Justification / Business case</th>
<th>Suggested actions</th>
<th>Thematic focus</th>
</tr>
</thead>
</table>
| • Improve cocoa production through rehabilitation of existing plantations. | • In general, Nigerian cocoa plantations are old with trees of 50 years or older.  
• Optimum number of trees per hectare is not reached as dead trees have not been replaced.  
• Nigeria has released eight new hybrid varieties which are early fruiting, have disease and pest resistance and good cocoa butter yields. | • Sustainable multiplication and distribution of hybrid seedlings through the establishment of seed gardens in major cocoa producing areas.  
• Encourage sustainable community based seed gardens.  
• Train farmers and other interested parties in managing seed gardens.  
• Sensitize farmers on the existence of these new hybrid varieties.  
• Support CRIN in the scaling up of hybrid seedling production. | • Inputs.  
• Technology.  
• Capacity building.  
• Youth and gender. |
| • Support downstream distribution of seeds and other inputs. | • Private sector is lacking in downstream distribution and inputs are not available at village level.  
• Farmers don’t know where inputs are available. | • Work with the private sector on innovative distribution models to cover the last mile.  
• Encourage the establishment of public/private sector committees at state level to address distribution issues. | • Inputs.  
• Technology.  
• Capacity building. |
| • Attract young people to profitable agricultural activities. | • Youth shy away from farming but could be interested in other value chain activities such as crop spraying, mechanization, processing, transport and marketing.  
• Youth have little access to land. | • ‘Rebranding’ of farming to profitable business.  
• Land allocation to youth (groups). Include utilities, ICT and other modern services in a semi urban setting. | • Capacity building.  
• Climate change.  
• Women and youth. |
| **• Train on good agricultural practises and business skills.** | **• Cocoa quality in Nigeria remains poor.**  
**• Farmers need to understand cocoa farming is a business.** | **• Train on improved agronomic practises especially post harvest (fermentation and drying)  
• Train on rational input use.  
• Train on record keeping and business management.** | **• Capacity building.  
• Technology deployment.  
• Gender and youth.** |
|---|---|---|---|
| **• “Catch them Young” initiative.** | **• Agriculture should be taught at primary and secondary school levels.** | **• Formation of Young cocoa farmer clubs.  
• Curriculum development.** | **• Youth.  
• Capacity building.** |
| **• Farmer groups and cooperatives.** | **• Groups can receive training.  
• Can buy inputs in bulk.  
• Can negotiate better prices.** | **• Facilitate group formation and strengthen existing groups.  
• Training in group dynamics and leadership.  
• NAEC training.** | **• Capacity building.  
• Access to finance.  
• Access to inputs.** |
| **• Support certification.** | **• Certification will in the long term result in a more sustainable cocoa value chain.  
• Some certification schemes lead to higher producer prices.  
• Certification addresses social issues such as child labor.** | **• Support to private sector certification schemes.** | **• Capacity building.  
• Youth.  
• Climate.  
• Soils.** |
| **• Support CocoaMAP.** | **• CocoaMAP provides indicators on sustainable cocoa production.** | **• Integrate MARKETS II M&E data with CocoaMAP.  
• Make cocoaMAP data available to those communities that don’t have internet access.** | **• Capacity building.  
• Climate.  
• Soils.** |
Chapter D: Conclusions and Actions

The global cocoa value and supply chains have seen a lot of vertical and horizontal integration during the last decade and are now dominated by a handful multinational grinders and chocolate manufacturers, requiring greater transparency. In addition, non-commercial players have entered the market in recent years that use cocoa and other commodities for speculative purposes, increasing price volatility.

Chocolate and chocolate consumers drive and influence the value chain. Demonstrated health benefits of dark/bitter chocolate with high cocoa solid contents will increase the demand for cocoa while at the same time concerns about sustainability and ethical issues in the cocoa sector will drive the demand for certified cocoa.

Quality issues, especially those that have to do with poor fermentation, have raised concern with the chocolate and confectionery industry. Several projects have been initiated to rectify this situation.

Nigeria is still in the top four producing countries, but continues to score low on yield and quality. Low yields are attributed to aging plantations and aging farmers, soil depletion and high disease incidence, while low quality is caused by poor fermentation, drying, and storing.

Whereas Côte d'Ivoire is now the largest grinder of cocoa beans in the world, Nigeria’s grinding capacity is under-utilized and major grinders are contemplating relocation to Ghana. The main reasons for low capacity utilization are the relatively high cost of cocoa beans, the high cost of energy and the duties to be paid on processed cocoa by exporters to the European Union because Nigeria did not sign the Economic Partnership Agreement (EPA) with the EU.

Based on the strategic priorities developed by the members of the cocoa value chain validation workshop the following activities should be considered under MARKETS II:

- **Improve cocoa production through rehabilitation of existing plantations.** It is well documented that the average cocoa plantation is older than fifty years and that this is a major cause for productivity decline. The Cocoa Research Institute of Nigeria (CRIN) recently released eight hybrid cocoa varieties with improved disease and insect resistance and the excellent cocoa butter characteristics demanded by the industry. In addition, these hybrids are early flowering and will produce a first crop two to three years after establishment. Dissemination of these hybrids is a key problem as cocoa beans can only be used as seed for seven to ten days. The only viable solution is to create so-called “seed gardens” where trained farmers produce seedlings for further distribution. Several initiatives already exist, some individual states have established seed gardens, and companies like Armajaro are also experimenting with community-based seed gardens.

MARKETS II could reinforce these efforts by aligning the project with CRIN, state initiatives, and the private sector to scale up the effort to make new seedlings available. The most important thing is to make these seed gardens sustainable by turning them into a business though training entrepreneurs in the Nigerian Agricultural Enterprise Curriculum which is being adapted for cocoa.

One of the key issues in rejuvenating existing plantations is to convince farmers to cut down still producing trees. MARKETS II could work closely with CRIN, other
projects, and the private sector to develop a realistic business plan which demonstrates the benefits of gradually replacing ancient trees with new ones.

A third option is to graft new varieties onto existing trees. MARKETS II could take a lead in teaching farmers grafting techniques.

The new hybrid varieties now available in limited quantities need two to three years before the first harvest. During this time, the young trees need shade, which is often provided by planting plantains amongst the cocoa. New varieties of plantain with better yields and higher disease and pest resistance are available. Their introduction should go hand in hand with rejuvenation of cocoa plantations, as extra income from such secondary crops would be an added incentive for farmers.

- **Support downstream distribution of seeds and other inputs.** Cocoa farms and plantations are often in isolated places, making access to agricultural inputs problematic. Nigeria loses more than 50 percent of its cocoa crop to black pod disease, which can be controlled by the timely application of appropriate fungicides.

  The “last mile,” or bringing agricultural inputs within the farmer’s vicinity, is the key to timely and rational use. MARKETS II could pilot innovative downstream distribution systems with input supply companies.

- **Attract young people to profitable agricultural activities.** There are some states like Edo, Ekiti and Cross River that intend to open up land for young people to go into cocoa farming. MARKETS II could work with these states in training young farmers in crop management and business skills through an adapted NAEC.

- **“Catch them Young” initiative.** Develop curricula on cocoa farming for primary and secondary schools in key cocoa states.

- **Support certification.** Certification will in the long term lead to a more sustainable cocoa sector. MARKETS II will support the private sector players such as Armajaro, Yara and SARO with their efforts to scale up certification in key cocoa producing states. MARKETS II will also support the further development and integration of CCE certification scheme.

- **Support CocoaMAP.** Cocoa Measurements and Progress is a new ICCO initiative to track cocoa production and development of sustainability using verifiable indicators. Projects are asked to contribute their own M&E data to strengthen the database.
Annex I: Survey methodology

Timing
The Value Chain Analysis survey for seven commodities was carried out between August 14th and September 7th, 2012. The survey was preceded by a weeklong training on value chain principles, MARKETS II intervention areas, and survey administration. During this period survey questionnaires were developed. Data analysis began on September 10th and continued through October 10th. Seven half day validation workshops were organized between September 17th and 20th and included active participation by of a cross section of the stakeholders interviewed during the survey.

The team
The entire MARKETS II technical team, including subcontractors, participated in the study. Seven senior Nigerian consultants served as value chain team leaders. A total of 25 people were involved in the survey work with administrative and management support from MARKETS II. Two international consultants also assisted a key phases of the process—one for training and start-up and one for data analysis, stakeholder validation and final document preparation.

Value chain teams and states covered
Eleven teams were formed to cover the seven commodities across 20 states. Each team contained at least one female staff member to make sure that gender-sensitive questions could be addressed in mixed or all female focus groups without problems.

<table>
<thead>
<tr>
<th>Commodity</th>
<th>Number of teams</th>
<th>States</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cassava</td>
<td>1</td>
<td>Oyo, Ondo, Edo, Ogun</td>
</tr>
<tr>
<td>Cocoa</td>
<td>2</td>
<td>Cross River, Ondo, Oyo, Osun</td>
</tr>
<tr>
<td>Rice</td>
<td>2</td>
<td>Kano, Jigawa, Kebbi, Ebonyi, Anambra, Benue</td>
</tr>
<tr>
<td>Sorghum</td>
<td>2</td>
<td>Kano, Katsina, Kaduna</td>
</tr>
<tr>
<td>Aquaculture</td>
<td>1</td>
<td>Edo, Osun, Oyo, FCT, Lagos, Ogun</td>
</tr>
<tr>
<td>Maize</td>
<td>2</td>
<td>Kaduna, Plateau, Nassarawa</td>
</tr>
<tr>
<td>Soybean</td>
<td>1</td>
<td>Nassarawa, Kaduna, Niger, Benue</td>
</tr>
</tbody>
</table>

Target value chain stakeholders
The following stakeholders were targeted:
Producers (small and large scale)
Processors (small and large scale)
Service providers (mechanization, spraying, transporters, etc)
Policy makers (MARD, ADP)
Input dealers
Traders

Survey tools
The teams used both structured key informant interviews and focus group discussions to carry out the research. The table below presents the number of people interviewed through both key informant interviews and focus group discussions.
Commodity | Interviews
--- | ---
Maize | 65
Rice | 89
Soybean | 40
Cocoa | 85
Aquaculture | 78
Sorghum | 89
Cassava | 41

**Service providers**

All the MARKETS II service providers (5) were subcontracted to assist the value chain teams with setting up meetings with key informants and focus groups and to help with translation where necessary. They were specifically instructed to identify key informants among crop association members, non-associated farmers, marketers, processors, input dealers, extension agents, grain purchasers, women and youth groups, technology and service providers, financial institutions and wholesalers and retailers and to assemble focus groups consisting of male and female farmers, youth, extension agents, small processors, cooperative groups, traders etc. Due to time constraints, it is possible that the selection of producers was skewed towards producers that worked with MARKETS and BtM2 before. The service providers played a key role in the survey process and made rapid progress possible.

**Data input and analysis**

Data input was done by a team of three people and supervised by a data analyst. Value chain teams sent completed questionnaires on a weekly basis to Abuja so that data input was a continuous process during the survey. However, template development and data input took longer than expected and, in some cases, delayed data analysis.

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18 The number of actual interviews for cassava is disappointing but can be explained by the fact that it was a single team covering a large area. The same is true for the soybean value chain team.
Annex II: Case study – Cooperating to Consolidate

COOPERATING TO CONSOLIDATE - CRACCUL

Background

Cross River Advance Cocoa Cooperative Union Limited (CRACCUL) is a Cooperative Union based in Ikom, Cross River State, one of the highest cocoa producing areas in Nigeria. Prior to the establishment of the organization, cocoa producers in the area were unorganized, carrying out their farming activities without any coordination. The farmers sourced their farm inputs such as fertilizers, chemicals, and seedlings individually. They had no knowledge of best practices in cocoa production or how to improve cocoa quality to attract higher prices for their produce.

In 2006, CRACCUL was formed with the aim of organizing the informal cocoa producer societies existing within the communities. To this end, nine affiliate societies, with an average of 50 members each, were registered from nine different communities. The primary focus of the union was to increase members’ cocoa yields and improve the quality of cocoa beans produced. Most of the farmers were harvesting 0.5 to 0.7 tons per hectare before the union. Once the union began coordinating activities, such as procuring inputs, providing training, and securing access to improved seedling varieties, most members’ yields increased to at least one ton per hectare. The union assists its members by providing market information, organizing trainings on best agricultural practices and capacity building, and ensuring quality control of cocoa produce. The union is administered by seven management committee members. The management team of the union attends training at least twice in a year for capacity building in the areas of leadership, Good Agronomic Practices (GAP), record keeping, client services, cocoa quality control, and other services that are shared with affiliate society members.

The Union collaborates with organizations like SOCODEVI, YARA Commodities Traders, and Sustainable Tree Crop Project and International Institute for Tropical Agriculture. Collaborating with relevant organizations helped to build the capacity of the union and its affiliate members by ensuring the production of high quality cocoa beans. This enabled members to receive premium prices for their cocoa. Due to the linkages provided by SOCODEVI to exporters, the union was able to easily market their cocoa. The union obtains advances from exporters, which are then remitted to the societies through the president which coordinate produce sourcing from union members. The adaptation of new technologies by the various affiliate members helps to greatly improve the quality of their produce. The union keeps good record of their activities and operations to ensure proper accountability and transparency. The union maintains bank accounts, while the affiliate society uses trading committees to ensure quality control, and the finance committee serves as an internal auditor. The union attained UTZ certification in 2010/2011.

CRACCUL Members in Session with MARKETS II Cocoa VC Team.

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Challenges:

- Inadequate funds for union activities.
- Poor road network to transport cocoa produce from interior communities to a cooperative warehouse.
- Security challenges and weak support from the government.
- Diversion of subsidized farm inputs.
- Price fluctuation.
- Distance of various affiliates to the union.
- Climate change.

Action taken so far:

- Cooperative savings are advanced to members and external funding sources are available as credit to the cooperative, allowing the cooperative to extend credit to members and alleviating the problem of inadequacy.
- Cooperative entered into working relationship with organizations such as Yara Commodities to take advantage of trainings conducted by development agencies and programs such as SOCODEVI and STCP.
- Trading committee monitors the dynamics of production and trade in terms of supply and quality control while the finance committee monitors the dynamics on finance, including price intelligence.
- Each affiliate has a representative that functions like a Union LBA at the community level.

Way forward:

Despite the achievement of the union improving yields and quality of cocoa for its members, there is one key element threatening the sustainability of producing high quality cocoa that meets international standards and commands premium prices in the competitive market, and that challenge is the climate. Continuous rainfall affected the quality of cocoa in such a way that the farmers were unable to dry their cocoa, resulting to a very poor quality cocoa which cannot compete with cocoa from other countries. A lot of key actors connected to the union were negatively affected. The exporter that provided an advance to the union for produce sourcing could not get quality cocoa beans due to improper drying of the cocoa beans, thereby reducing the revenue for the farmers and all others in the value chain.

Plate 2: Poor Quality Cocoa Beans due to Lack of Sunlight for Proper Drying.
In order to solve the identified challenges that inhibit the effective operations of the Union and the affiliate societies, the Union is considering the introduction of solar drying technology to the farmers.

Annex III: Source of growth

Resources account for the majority of growth in many of Africa’s oil exporters, although Nigeria is more diversified

Real GDP growth by industry sector, 2002–07
% 2000 $ billion

<table>
<thead>
<tr>
<th>Country</th>
<th>Resources</th>
<th>Agriculture</th>
<th>Manufacturing</th>
<th>Services</th>
</tr>
</thead>
<tbody>
<tr>
<td>Angola</td>
<td>86</td>
<td>8</td>
<td>15</td>
<td>12.2</td>
</tr>
<tr>
<td>Libya</td>
<td>63</td>
<td>24</td>
<td>31</td>
<td>11.0</td>
</tr>
<tr>
<td>Algeria</td>
<td>44</td>
<td>7</td>
<td>54</td>
<td>18.3</td>
</tr>
<tr>
<td>Nigeria</td>
<td>35</td>
<td>27</td>
<td>37</td>
<td>24.0</td>
</tr>
</tbody>
</table>