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Côte d'Ivoire

The Growth Agenda: Building on Natural Resources and Exports

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WEIGHTS AND MEASURES

Metric System

ABBREVIATIONS AND ACRONYMS

AIPH	<i>Association Ivoirienne de la Filière Palmier à Huile</i> (Interprofessional Association for the Oil Palm Sub-sector)
AFFICOT-CI	<i>Association des Faîtières de la Filière Coton de Côte d'Ivoire</i> (Cotton Producers' Association of Côte d'Ivoire)
ANARE	<i>Autorité Nationale de Régulation du Secteur de l'Électricité</i> (National Authority for the Regulation of the Electricity Sector)
AfDB	African Development Bank
AICD	Africa Infrastructure Country Diagnostic
ANADER	National Agency for the Support of Rural Development
ARECA	Regulatory Authority for Cotton and Cashew
BCEAO	Central Bank of West African States
BRVM	<i>Bourse régionale des valeurs Mobilières</i> (Regional Stock Exchange)
BSC	<i>Bordereau de Suivi de Cargaison</i> (Cargo Monitoring Invoice)
CARG	Compound Annual Rate Growth
CEPICI	<i>Centre de Promotion des Investissements en Côte d'Ivoire</i> (Ivoirian Investment Promotion Center)
CFAF	Franc of the African Financial Community
CIE	<i>Compagnie Ivoirienne d'Electricité</i> (Ivoirian Electricity Company)
CIF	Cost, Insurance and Freight
CIT	Côte d'Ivoire Telecom
CNRA	National Agricultural Research Center
CNSL	Cashew nut shell liquid
CPO	Crude Palm Oil
DAI	<i>Déclaration anticipée d'importation</i> (Advance Import Declaration)
EC	European Commission
ECOWAS	Economic Community of West African States
EECI	Electrical Energy of Côte d'Ivoire
EITI	Extractive Industry Transparency Initiative
EU	European Union
FDI	Foreign Direct Investment
FER	<i>Fonds d'Entretien Routier</i> (Road Maintenance Fund)
FIMR	<i>Fonds d'Investissement en Milieu Rural</i> (Rural Investment Fund)
FIRCA	<i>Fonds Interprofessionnel pour la Recherche et le Conseil Agricole</i> (Interprofessional Fund for Agricultural Research and Extension)
FLEGT	Forest Law Enforcement, Governance and Trade

FOB	Free on Board
FRI	<i>Fiche de Renseignement à l'Importation</i> (Import Information Form)
FSAP	Financial Sector Assessment Program
GM	Genetically Modified
GPS	Global Positioning System
GSM/GPRS	Global System for Mobile Communications/General Packet Radio Service
ICSR	Investment Climate Survey Report
ICT	Information and Communications Technology
ITES	Information Technology Enabled Service
LNG	Liquefied Natural Gas
LPG	Liquefied Petroleum Gas
MCS	Monitoring, Control and Surveillance
NGO	Non-Governmental Organization
OIC	<i>Office Ivoirien des Chargeurs</i> (Ivorian Shippers' Council)
PETROCI	<i>Société Nationale d'Opérations Pétrolières de la Côte d'Ivoire</i> (National Company for Petroleum Operations in Côte d'Ivoire)
RASCOM	Regional African Satellite Communications Organization
RCN	Raw Cashew Nuts
RSPO	Round Table on Sustainable Palm Oil
SICOSA	<i>Société Ivoirienne de Coton</i> (Ivorian Cotton Company)
SIR	<i>Société Ivoirienne de Raffinage</i> (Ivorian Refining Company)
SODEFOR	<i>Société de Développement des Forêts</i> (Forestry Development Company)
SOGEPE	<i>Société de Gestion du Patrimoine du Secteur de l'Électricité</i> (Electricity Sector Asset Management Company)
SOPIE	<i>Société d'Opération Ivoirienne d'Électricité</i> (Ivorian Electricity Operations Company)
TRIE	<i>Transport Routier Inter-Etats</i> (Inter-state Road Transport)
URECOS-CI	<i>Union Régionale des Entreprises Coopératives de la Zone des Savanes de Côte d'Ivoire</i> (Regional Union of Cooperative Enterprises in the Savanna area of Côte d'Ivoire)
VAT	Value-added Tax
VITIB-CI	<i>Village des Technologies de l'Information et de la Biotechnologie de la Côte d'Ivoire</i> (Information and Biotechnology Zone of Côte d'Ivoire)
WAAPP	West Africa Agricultural Productivity Program
WACS	West Africa Cable System
WAEMU	West African Economic and Monetary Union
WAGP	West Africa Gas Pipeline

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TABLE OF CONTENTS

PREFACE and acknowledgements	v
Executive Summary	vi
1. The Growth Agenda: An Export-oriented, Resource-based Approach	1
An export-oriented, natural resource, sub-sector approach to growth.....	3
What is left out?.....	5
Moving forward: Some practical considerations	7
PART I: The Key Sectors.....	8
2. Agriculture: Still the Foundation of the Economy.....	8
Staple food crops and livestock	10
Declining sub-sectors: pineapples and coffee.....	11
Stagnant sub-sectors with potential: bananas, sugar and cocoa.....	12
3. Agro-Industry: Promoting Value-added	15
Value-added	16
Cocoa and cashew.....	19
Other sub-sectors	20
4. Energy: Oil, Gas and Electricity.....	22
Potential and Problems	23
Moving Forward	24
5. Transport and Trade Facilitation.....	28
The Port of Abidjan and Customs.....	29
Obstacles to Transit Trade	30
Road Maintenance	31
Trucking Services	31
Rail Service.....	32
6. Telecommunications: Making up for lost time	34
PART II: VALUE CHAINS	39
7. Cashew: Growth and the Processing Challenge	39
8. Rubber: Building on a Boom	44
9. Oil Palm: Competing with Asia on the Regional Market	49
10. Cotton: Reviving an Economic Pillar.....	53
Challenges and Constraints.....	53
The Way Forward	55
11. Rice: New Potential for Import Substitution.....	58
12. Fisheries: the End of an Era?	62
Domestic Fishery	62
The Tuna Industry.....	63
Sector Governance.....	65
13. Wood Industry: Time for a New Strategy	67

List of Figures:

Figure 1.1: GDP per capita: 1960 - 2009	1
Figure 1.2: Investment as % of GDP: 2000-07	3
Figure 1.3: Major constraints according to ICSR	5
Figure 2.1: The Changing Structure of Agriculture Land Use.....	13
Figure 3.1: Evolution of the Structure of Exports: 1995 - 2008	15
Figure 4.1: Trade in Crude and Refined Petroleum (US\$ million).....	22
Figure 6.1: Market share of mobile operators.....	34
Figure 6.2: Wireless broadband subscriptions (per 100 people).....	35
Figure 6.3: Fixed broadband prices, May 2010, US\$	36
Figure 7.1: Processing and Export of Raw Cashew Nuts (RCN) ('000s tons)	39
Figure 10.1: World Price of Cotlook A Cotton Fiber: Actual and Projected (US\$ cents/lb).....	57

List of Tables:

Table 1.1: Exports: Value, Share and Growth	2
Table 1.2: Doing Business Rankings on Key Indicators.....	6
Table 2.1: Potential Growth Rate of the Agriculture Sector: 2011-2020.....	10
Table 3.1: Evolution of Processed and Manufactured Exports.....	16
Table 3.2: Estimating Value-added.....	17
Table 3.3: Investment and Export Tax Implications of Processing Cocoa and Cashew Nuts	20
Table 8.1: Comparative Profitability of Cocoa, Oil Palm and Rubber in 2008	44
Table 9.1: Oil Palm: Cost Comparison between Côte d'Ivoire and Malaysia	50
Table 11.1: Domestic Resource Cost Ratios of Different Rice Production Systems.....	59
Table 11.2: Indicative Plan for Economically Viable Rice Expansion.....	61

PREFACE AND ACKNOWLEDGEMENTS

This report has been prepared in response to a request by the Government of Côte d'Ivoire for analysis of the sources of growth which could help the country emerge from its extended period of economic stagnation and political crisis. It aims to provide timely advice to a new Government ready to elaborate a medium-term growth strategy, including the adjustment and implementation of the existing Poverty Reduction Strategy. The report provides the analytical underpinnings necessary to help prioritize among the many needs and options, and offers specific recommendations on growth-enhancing interventions and reforms. It also provides input for new budget support and investment operations proposed by the World Bank.

The focus is on resource-based exports which have always been the foundation of the economy and still hold the main potential for inclusive, pro-poor growth. It is intended to complement other work already available or under way on cross-cutting issues such as the investment climate and infrastructure. Thus the emphasis is placed on key sub-sectors and the specific, and often unique, constraints to growth which they face. The transport sector is included as a service export in its own right, as well as a cross-cutting theme, but with the focus on soft infrastructure which is not covered in other work. The rice sub-sector is added as one of the few areas where significant growth can be achieved through import substitution. And the debate over adding value to primary products is tackled in a separate chapter, drawing on sub-sector examples.

The concept note was discussed within the World Bank and with the authorities in 2009. A preliminary mission was held in February 2010 with a first group of consultants, followed by other individual consultant missions in the succeeding months. The initial results of the fisheries mission were discussed in May 2010, and those on agro-industry, wood products and transport in July 2010. The summary report was validated in a workshop on November 9-10, 2011 and was subsequently modified to take into account the comments and recommendations received.

The study was led by Philip English (World Bank) who was responsible for the summary report. Background papers were written by the following consultants: Alain Ballereau and Kalou Douabi (transport and trade facilitation), Mourad Belguedj (energy), Jean-Paul Chausse (cashew, cotton, oil palm, rubber, and agricultural overview), Elke Kreuzwieser and Guillaume Gnamien (agro-industry), Roland Finifter (wood products), Dunstan Spencer with Cyrille Berah Amani (rice), and Gert van Santen and Amadou Tall (fisheries). Mombert Hoppe and Boubker Abisourour assisted with trade data analysis.

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EXECUTIVE SUMMARY

1. **Côte d'Ivoire was an economic success story in the first twenty years of independence, but a sharp reversal began in 1980 and by 1993 per capita incomes were back to the level of 1960.** Devaluation of the CFA franc triggered an economic rebound, but this was soon undermined by the political crisis beginning in 1999. Just as the economy was starting to move forward, a new crisis struck in early 2011, with considerable loss of life and assets. GDP growth will be significantly negative in 2011, after 30 years of almost uninterrupted decline in per capita incomes and a rise in poverty from 10 percent in 1985 to 43 percent in 2008. The country is in urgent need of rapid and inclusive growth to reduce poverty, create jobs, provide hope for a better future, and help heal the wounds in the social fabric.
2. **The investment climate urgently needs improvement if the private sector is to create the jobs so urgently needed.** Côte d'Ivoire is ranked 169th out of 183 countries, far below neighboring Ghana in 67th place. While political instability is the single most important obstacle, problems exist in most key variables. Cross-cutting reforms in the business environment will be important to stimulate investment and growth in manufacturing and services, and are less prone to abuse than targeted interventions. However, they are less likely to address the binding constraints in resource-based sub-sectors which tend to be more idiosyncratic. The broader investment climate agenda is well covered by other reports, including the Doing Business Survey, the Investment Climate Survey Report (ICSR), the Africa Infrastructure Country Diagnostic, and the Financial Sector Assessment Program (FSAP). This report therefore focuses primarily on resource-based sub-sectors.
3. **The report devotes some attention to two key backbone services - transport and telecommunications.** The transport sector facilitates exports of goods, and access to essential imports, but also represents a service export in its own right (for neighboring land-locked countries). The focus here is on the “soft” side of transport – procedures, regulations and services – which are often overlooked in favor of hard infrastructure investments. Improvements on the soft side are typically more cost-effective if only because they cost little or no money. A separate Transport Sector Study is being prepared which will focus on hard infrastructure.
4. **Simplification of procedures, increased competition and resistance to vested interests could do much to reduce transport costs.** Cumbersome customs procedures, excessive documentation requirements, and lack of competition among forwarding agents are undermining the benefits of a relatively well-managed container terminal. Domestic and transit road traffic is hampered by the infamous road blocks but also by ineffective but mandatory escort services, non-functional regional transit rules, national quotas and the queuing system. The Shippers’ Council, freight offices, and truckers’ unions claim various commissions not justified by services rendered. Road maintenance is under-funded, and undermined by overloading. Yet overloading will continue until road transport is liberalized. Railway maintenance has also suffered from neglect as the public asset holding company has failed to use available revenues for this purpose.

5. After a promising start, the telecommunications sector has not kept pace with global developments. Although a certain degree of competition has been introduced with five mobile and two fixed operators, the quality of sector liberalization has been impacted by old regulations or nonexistent legislation. These inhibit the development of a modern ICT sector open to the convergence of different services and transformation to next generation networks. Legislation that would legalize online transactions for e-commerce and e-government and protect consumers in the cyber world does not exist. The country has had some successes: creating government web sites; dynamic IT firms which have achieved regional recognition; and a growing telecommunication sector. Côte d'Ivoire has the basis to emerge as a regional ICT leader. However this will require rapid passage of new laws, the introduction of converging services (between telecoms, broadcasting and IT), the licensing of high-speed wireless networks, increased access to computers, and more training and education in relevant fields.

6. The country's growth has been driven by resource-based exports and this will remain the key in the medium-term. Exports have the potential for rapid growth because they are unconstrained by the limits of the small domestic market. The impact of natural resource production extends to many other sectors through backward and forward linkages – inputs, processing, transport, financial services, taxes and final consumption. Typically a few key sub-sectors drive economies at an early stage of development. In Côte d'Ivoire it was cocoa and coffee for many years, although a variety of other activities also developed. In the 2000s, oil and gas took the lead. Some of the traditional sub-sectors are now struggling while others are gaining strength. Since each sub-sector has its peculiarities, it is important to examine them separately in order to determine their potential, their binding constraints, and the degree to which state involvement is needed.

7. Value-added transformation has long been a central element of government policy in Côte d'Ivoire but each case needs to be examined in the context of national objectives. A degree of processing is inevitable in some cases (cotton, sugar, palm oil, rubber), while in others, a processed product may be worth less than the fresh alternative (pineapples, tuna). Typically, a commodity is part of a global value chain and the producing country is only competitive in certain segments. National development requires structural transformation, but before promoting new activities, a government needs to confirm that the benefits to the domestic economy justify any incentives. The cost of creating one job in the production of cocoa liquor is 400 times the cost of a job in cashew processing, and the loss of tax revenue is significant. So if job creation and poverty reduction are the priorities, cashew processing may deserve more emphasis. On the other hand, if the authorities believe that the country should move into chocolate production, then at some point it will be necessary to tackle the capital-intensive stages of cocoa processing. The official Ivoirian policy of adding value across the board needs to be nuanced with the help of a cost-benefit analysis for each sub-sector.

8. The cocoa sub-sector is not a main focus of this report, though it remains the most important single commodity export. This is because it is not seen as a significant source of growth, and because there is an on-going debate over the definition of a new strategy, supported by extensive analysis and discussion. This report limits its treatment to the question of value-added, as well as situating cocoa in the wider context of diversification into more profitable crops.

9. **The once-prominent coffee and pineapple sub-sectors appear to be in decline.** Smallholders are leaving both commodities in favor of more promising alternatives. Niche markets may exist, particularly in the sub-region, and the authorities should do what they can to facilitate the operations of large-scale pineapple exporters, but without recourse to subsidies. However, these sub-sectors will no longer be sources of growth.

10. **Bananas and sugar are also struggling but have more promise.** Banana export levels have been maintained, thanks to the dominant role of large-scale operators who probably require little support beyond an improved investment climate. Sugar prices have recently improved and the industry should remain competitive in the expanding domestic market. Both commodities also enjoy significant market opportunities in the sub-region.

11. **Among staple crops, maize has the best potential for growth, again based on the regional market.** The WAEMU market has a significant deficit in maize and demand is likely to grow faster than population, as increased meat consumption generates demand for animal feed. There is good potential to raise current low yields. The rotation of maize with cotton means that a resurgence of the cotton sub-sector would also promote maize production.

12. **The most promising agricultural sub-sectors are rubber, cashew, cotton, rice and oil palm.** They have the potential to grow by 10 percent or more annually. Rubber and cashew have been growing fast for some time and further expansion is guaranteed given the recent planting of new trees. Cotton is recovering with the help of high world prices and can register significant growth simply by returning to previous output levels. Oil palm production had stagnated but there is renewed private sector interest now that world prices have strengthened. Rice is perhaps the least predictable of these five sub-sectors. The domestic market offers high growth potential, and increased world prices have made some forms of domestic production competitive again. However, this sub-sector is heavily dependent on effective and coordinated state support if it is going to take off.

13. **It is time to move from raw cashew exports to domestic processing.** Côte d'Ivoire is now the world's largest exporter of raw cashew. The investment climate has hardly been conducive to the development of processing capacity, but the situation should improve. Over 100,000 jobs could be created, and primarily in the impoverished north, if all the harvest was shelled locally, with the additional potential for electricity generation using the shells as biofuel. However, this will require some incentives, carefully managed to avoid penalizing the farmers or protecting inefficient enterprises. If an export tax is used, its proceeds should be channeled into a program to raise crop yields which are far below those of competing countries. Public research and extension is sorely lacking, the interprofession is weak and a stronger regulatory framework is needed to improve coordination without hampering the dynamism of the private sector.

14. **The rubber sector is booming and requires little public intervention.** World prices are expected to remain strong as they are linked to the price of oil (the key ingredient for synthetic rubber). The interprofession is already functioning well and should be given further authority to regulate activities, notably the entry of new buyers and the respect of contractual arrangements. The main challenge is to enable poor farmers to participate in this boom, given the initial investment costs and the long period before new trees begin to produce. Rubber

provides a key opportunity for diversification, at the level of both the farmer and the nation. Some modest taxation may be justified, especially if it serves to reduce the pressure on over-taxed cocoa farmers and is used to support rural development through mechanisms such as the FIMR.

15. Oil palm is enjoying a renaissance and supports a range of value-added operations. Côte d'Ivoire need look no farther than the sub-region for a large and growing market, though efforts will be required to ensure that other WAEMU and ECOWAS countries honor their free trade agreements. A concerted push will be necessary to lower costs in order to be competitive with Asian suppliers, but the private sector (including some Asian investors) is well-placed to take the lead. Here too, the interprofession will play a central role, providing its authority is reinforced by the proposed new law. A code to address environmental and social concerns should be adopted, along the lines defined by the international Round Table on Sustainable Palm Oil.

16. Cotton can help raise incomes in some of the poorest parts of the country. However, this sub-sector has been badly affected by 10 years of crisis and requires a pro-active program to rebuild confidence and establish an agreement among stakeholders. Producers insist on reducing their dependence on ginneries for inputs and advice but this will necessitate considerable capacity-building and rationalization in their organizations. Financing, research, seed production, extension and quality control all require attention and the problems cannot be resolved in the short-term without some public support.

17. Better world price prospects bode well for domestic rice production. Self-sufficiency is unlikely, but the potential for efficient import substitution is good. There are 11 different systems of rice production, not all of which are competitive with imports. Intensive, rainfed upland rice production, using improved varieties and fertilizer, offers the greatest potential. Valley swamp development, including low-cost stream diversion techniques, offer further opportunities for expansion. However, the country will remain dependent on imports for half of total consumption for the foreseeable future, so it will be important to avoid high tariffs, unnecessary import costs, or monopoly power, all of which raise prices for poor consumers.

18. The fisheries sector is in dire straits and may require radical rethinking. Côte d'Ivoire is at risk of losing its position as the major African tuna exporter in the Atlantic region due to the entry of world players in the Ghana market. It may be necessary to seek similar partners to strengthen the Ivorian tuna industry. Further improvements in the port of Abidjan, to preserve its role as the hub for tuna fishing vessels in the sub-region, could be crucial to the industry's viability. Greater attention needs to be paid to artisanal fisheries producing for the local market, given the heavy dependence on imported fish. The sector suffers from major governance problems, notably in the management and surveillance of fishery resources, and in the control of industrial fleets undermining the artisanal fishery.

19. The wood industry also faces a turning point in its evolution. This industry was once a pillar of the rural economy, but the annual supply of logs and the number of sawmills have steadily fallen. Governance problems have plagued the industry, and the parastatal SODEFOR is in urgent need of reform. The management of natural forests and plantations requires immediate

attention to ensure that a sustainable level of production can be maintained. Private plantations should be encouraged. However, the importation of natural logs, most likely from Liberia, offers the most promising avenue to increase the supply of raw material; this will require a concerted effort by the authorities, notably in customs, to facilitate this new approach. Implementation of the proposed ban on teak log exports should take into account the industry's capacity to retool in order to process these smaller logs efficiently.

20. **Finally, there is the all-important energy sector which faces huge challenges in the short-term but offers great promise if these can be overcome.** It is a source of exports – crude oil, petroleum products and electricity – as well as supplier of key inputs for the rest of the economy. Having provided new life to the economy in the last 10 years, it is now suffering from lack of investment. Off-shore exploration is urgently needed to confirm the likelihood of new reserves to offset declining output from existing wells, and to ensure the availability of natural gas critical for electricity producers and the industrial sector. In the interim, connection to the West African Gas Pipeline should be pursued to provide access to Ghanaian or Nigerian gas. The electricity sector is in a critical state. The solutions are well-known: large investments in maintenance, new private sector participation, renegotiated gas contracts, regular price adjustments, and reduction in commercial losses, among others. Lack of political will to reform has been the main obstacle.

21. **The exchange rate is not analyzed here but it cannot be overlooked.** This is the single most important price affecting a country's competitiveness. It takes on added importance in the case of Côte d'Ivoire given the fixed link between its currency and the Euro, which is proving to be relatively strong. It is no coincidence that the only period of significant growth enjoyed by the country in the last 30 years was immediately after the devaluation of 1994. The Ivoirian authorities will need to avoid inflationary pressures which raise the cost of domestic inputs and factors of production, and continue to improve the microeconomic sources of competitiveness to compensate for the absence of the macroeconomic instrument of exchange rate adjustment. Further analysis of this issue is warranted.

22. **A growth strategy demands consensus, cooperation and leadership within government, and collaboration with the private sector.** Appropriate institutional mechanisms are needed to prioritize, coordinate, allocate resources and promote policy reforms. Some potential building blocks are in place, such as the public-private platform, export and investment promotion agencies, and the poverty reduction strategy. However, there are many competing agendas and initiatives. Success in other countries has often been dependent on a small group of world-class technicians, with political support at the highest level, who define a strategy, and have the capacity to obtain decisions and ensure implementation. Ivoirians will need to reflect not just on the content of a growth strategy, but also on the institutional framework to sustain it.

Matrix of Recommendations

Agriculture and agri-business
<p>Overall recommendations:</p> <ul style="list-style-type: none"> • Consider a differentiated approach to adding-value to primary products by undertaking in-depth assessments of current and future competitiveness and cost-benefit analyses of government support. • Adopt a new law on agricultural inter-professions in order to strengthen self-regulation. • Restructure cooperatives and other economic entities, build their capacity, and revise the regulatory framework in conformity with regional initiatives (OHADA, ECOWAS). • Adopt legal texts on the quality of reproductive material and the nursery profession. • Simplify the procedures for access to rural land. • Propose a funding mechanism for the maintenance of rural roads through a synergy of actions between the different agricultural sub-sectors. • Develop new financing mechanisms with the introduction of a credit guarantee fund and a central data base on all financial transactions in relevant sub-sectors to mitigate risks. • Set up market information systems for regional trade in staple foods to help traders target deficit areas. <p>Specific recommendations for secondary value chains:</p> <ul style="list-style-type: none"> • Pineapple: Promote (i) out-grower schemes, with technical and commercial partnership between existing industries and planters; and (ii) renewal of planting materials for market adaptation. • Coffee: Encourage differentiated and high quality production by competitive growers while supporting the exit of non-competitive ones and their conversion towards more profitable activities. • Banana: Develop quality, standards and marketing to help smallholders penetrate niche markets (organic, fair trade). • Sugar: Reduce costs and expand sales in regional market to reach full capacity utilization. • Cocoa: (i) Support less productive cocoa farmers to exit the market and seek more profitable activities; (ii) encourage replanting with high-yield varieties, better husbandry and drying in the case of more productive farmers; (iii) adopt a new cocoa strategy and institutional framework.
Main value chains
Cashew
<ul style="list-style-type: none"> • Adopt a comprehensive sector strategy and attract private technical expertise for its implementation, in partnership with NGOs and farmers. • Implement a productivity improvement program focusing on (i) improved varieties, (ii) training on better agriculture techniques, (iii) a phytosanitary treatment program; (iv) extension services to advise on post-harvest techniques; (v) partnerships with the producers' organizations, NGOs and the private sector; and (vi) creation of a training center. • Strengthen producer organization governance by building a legitimate structure to support improved practices and to speak on behalf of farmers, starting with a census and the election of new leaders. • Introduce village or district-level collection, storage, and marketing systems to increase producer bargaining power while maintaining competitive linkages with middlemen/collectors. • Improve quality and traceability through an education program focusing on (i) good practice guides, (ii) systems of laboratory analysis and certification, and (iii) upgrading of existing processing facilities. • Consider targeted, temporary support for kick-starting a processing industry, including a credit guarantee fund, and undertake an analysis of the appropriate incentive package, before implementing such support.
Rubber
<ul style="list-style-type: none"> • Identify ways and financing tools to assist poor farmers to enter the rubber sector; expand the role of the Rubber Development Fund to provide partial subsidies preferably targeted to poor farmers, and give the Fund a status enabling it to receive additional public funds. • Improve access to high-quality planting material by smallholders, and more extension and tapping services; increase the number of plant production centers. • Apply the regulations on the importation of reproductive materials from other producing countries. • Strengthen APROMAC's mandate to improve regulation in the sub-sector.

	<ul style="list-style-type: none"> • Reconsider the pricing formula to better reflect market conditions. • Revisit the level of taxation of the sector and consider some contributions (e.g. small ad valorem export tax) to the FIMR to fund rural roads and social infrastructure. • Extend the environmental and social conduct code to all companies; develop guidelines for smallholders. • Design a program for training/insertion of youth to take advantage of the many employment opportunities.
Oil Palm	<ul style="list-style-type: none"> • Establish a network of nurseries linked with the research station and certified by the interprofession. • Encourage AIHP to develop a system to certify village-level producers according to adopted standards, and put in place a training center and a funding system to promote the expansion of village plantations. • Encourage AIHP to adopt an environmental and social code and enforce it across the industry. • Strengthen the capacity of AIHP to approve and regulate the installation of factories. • Ensure the application of UEMOA/ECOWAS free trade rules for vegetable oil within the sub-region.
Cotton	<ul style="list-style-type: none"> • Pursue the implementation of the strategic action plan for relaunching the sector. • Rebuild the capacity and cohesion of the producers' organizations and re-establish confidence between the different actors in the sector, through: (i) clarification of the roles of INTERCOTON and ARECA; (ii) the definition of contracts between producers and ginners; (iii) a mechanism for input distribution; (iv) a new financing mechanism; and (v) establishment of the rules of the game between ginners. • Strengthen ARECA's capacity and endow it with full authority to impose decisions on all the actors. • Design an adequately-funded research program, with rehabilitation of the research center; for extension activities, consider a model involving FIRCA, producers' organizations ANADER, NGOs and certified private sector service providers. • Improve efficiency of fertilizer utilization and move towards the adoption of GM cotton.
Rice	<ul style="list-style-type: none"> • Adjust the rice strategy considering: <ul style="list-style-type: none"> (i) Support to 400,000 ha of improved rain-fed upland rice in the medium-term. (ii) Phasing out of upland mechanized rice production in the savanna zone. (iii) Conversion of 25,000 ha of traditionally cultivated swamps to new irrigated perimeters based on stream diversion over five years. (iv) Reduction in import costs resulting from excessive administrative costs and market power.
Fisheries	<ul style="list-style-type: none"> • Revisit the Master Plan for the Development of Fishing and Aquaculture. • Support the strategy for artisanal fisheries expansion, targeting higher value products and markets; promote participation by Ivoirians; and integrate all fishermen into local governance systems. • Promote regional cooperation in fisheries research and surveillance, notably by joining the World Bank-supported West Africa Regional Fisheries Program. • Improve access to frozen tuna by (a) working with the International Commission for the Conservation of Atlantic Tuna to pursue more effective management of key resources, control the number and capacity of fishing boats and reduce the catch of juvenile tuna, and strengthen monitoring, control and surveillance (MCS) capacity to reduce illicit fishing; (b) better fleet management to reduce prices of landed tuna; and (c) improve port services to ensure that the port remains the base for the tuna fleet. • Pursue strategic partnerships to expand the production base and secure access to markets. • Encourage private local investments in foreign tuna fleets, thereby reducing dependence on individual vessels for supply, in the context of the EU fisheries agreement. • Assess whether the fiscal losses associated with the tax-free status and "<i>regime franc</i>" are justified by the local employment, value-added and foreign exchange earnings of the industry. • Undertake an analysis of: (i) the future profitability and sustainability of local fisheries, fish imports, re-export and processing operations, and their ability to pay higher license fees, (ii) the level of future direct and indirect taxes and subsidies imposed on the sector, (iii) the real costs of effective sector governance, and (iv) the division of labor between the public and private sectors in running governance programs, such as quality control, research and even parts of MCS. • Strengthen capacity of the administration to collect, analyze and disseminate statistics. • Create in the medium-term a dedicated resource management tax which could support research, MCS and other long-term management activities.

- Increase transparency by:
 - (i) Reporting to parliament the annual list of industrial fishing, processing, and import and export licenses issued to local and foreign parties, and other fees paid.
 - (ii) Creating a temporary Transparency Office to manage and control the receipt and use of all sector license fees and the compensation payments of fisheries agreements.
 - (iii) Setting up a formal Fisheries Sector Board, with representatives of the private and public sectors to facilitate the strategic analysis and decisions needed in the tuna sector.

Wood Products

- Facilitate the importation of logs and sawnwood from Liberia, including the adoption of legal texts.
- Undertake an audit of available resources and processing capacity to guide restructuring of the industry.
- Develop a new and more rigorous process for allocating logging rights, along the lines applied in Ghana.
- Promote private plantations, through resolution of land tenure issues and gradual withdrawal of SODEFOR.
- Negotiate a FLEGT agreement with the EU to protect access to this profitable market.
- Undertake an audit of SODEFOR to be followed immediately by reforms which address entrenched weak governance and refocus its mandate on regulation of the private sector.
- Update the regulatory framework to reflect current realities (Forest Code, Law on Land Ownership, Forestry Policy).
- Declare the preservation of the forest as a national priority and prevent the degradation of protected areas.
- Renew forestry research.
- Study the options to create a forestry development fund financed by all actors in the sector.

Energy: oil, gas and electricity

- Strengthen the regulatory, institutional and operational framework in the energy sector, and clarify roles and responsibilities. In particular:
 - (i) Revisit the institutional and regulatory framework in the electricity sector to promote efficiency and risk-sharing and render the national regulatory authority (ANARE) operational.
 - (ii) Adopt a new electricity price-setting mechanism to be implemented by ANARE.
 - (iii) Adopt a revised hydrocarbons law, prepare a model for production-sharing contracts and a performance contract for PETROCI.
 - (iv) Strengthen the regulatory powers of the Ministry of Mines and Energy (MME).
 - (v) Build capacity of both PETROCI and MME to improve understanding of the costs of oil production, and monitoring of foreign oil companies (including forecasting of hydrocarbon prospects and financial results). Encourage foreign oil companies to build human resource capacity in PETROCI.
 - (vi) In the case of SIR: (a) implement the results of the audit and the strategy to optimize its production capacity, help satisfy environmental standards, economize energy consumption and improve productivity; (b) clear the arrears owed by the government to SIR; and (c) consider a temporary increase in the tax on petroleum products to facilitate the modernization of the company, while ensuring that the pricing mechanism is honored so that higher costs can be smoothly passed on to consumers and businesses.
- Seek expert advice on new oil and gas contracts to ensure equitable sharing of risks and rewards.
- Increase transparency of revenue management by ensuring that: (i) the initial steps taken to adhere to the EITI are pursued so that all stakeholders can be assured that the taxes, dividends and other payments by the private sector are properly accounted in the national budget; and (ii) budget execution is strengthened through quarterly execution reports, timely and published audits by the Chamber of Commerce, and effective Parliamentary oversight.
- Promote new oil exploration, with a particular focus on the major oil companies who are the best placed to develop deep water reserves.
- Seek alternative sources of gas supply, especially through access to the West Africa Gas Pipeline.
- Develop more hydroelectric capacity and promote renewable energy sources in the long-term, such as solar power and biomass (e.g. from cashew nut processing) to contribute to rural electrification.
- Promote energy efficiency in public buildings and private industries and households.
- Reinforce and expand the electricity transport and distribution network.

Transport and trade facilitation

Road improvement:

- At least double the road tax on gasoline; expand the use of toll roads.
- Add weigh stations to reduce overloading and generate revenues from fines.
- Transfer these resources directly into the road maintenance fund (FER).
- Mobilize resources from the national budget and donors in the order of CFAF 200 billion for a three-year program of road rehabilitation.

Trucking services:

- Simplify and reorganize the regulatory framework.
- Reduce the levies imposed on truckers by unions, the shippers' council (OIC) and freight offices.
- Liberalize road transport by setting up a freight market exchange.
- Enforce the axle load limit of 11.5 tons to extend the life of trucks and roads.

Railway transport:

- Clear the financial losses of SITARAIL due to the crisis.
- Improve the management of wagons to increase the time of rotation.
- Prepare a trade facilitation strategy.
- Deposit most concession payments in a dedicated account managed by SITARAIL for track rehabilitation.
- Launch a program of new investment in the rail line and rolling stock.
- Develop multi-modal transport (ship-train-truck) through greater use of containers.

Trade facilitation:

- Establish a true single window for all services operating at the port.
- Eliminate all road blocks in favor of a system of tracking by GPS, with one control at the point of departure and one at the border crossing.
- Interconnect the computer systems of WAEMU customs services, followed later by those of ECOWAS.
- Fully exploit the SYDAM system, create an electronic pre-declaration process, and recognize the legal validity of electronic declaration.
- Improve the criteria for selectivity of controls and integrate them in SYDAM.
- Redeploy agents to focus on ex post control of customs clearance, and reinforce cooperation with the tax administration.
- Replace the TRIE process with the Unique Customs Declaration form.
- Eliminate the FRI and BSC forms.
- End OIC charges and organize escorts only at the request of shippers.
- Accelerate the establishment of joint border posts.
- Authorize importation of non-ECOWAS goods through land borders;
- Return to customs the responsibilities assigned to the OIC.
- Eliminate the queuing and traffic allocation systems.
- Reactivate the competitiveness committee for Ivoirian ports.

Telecommunications

- Introduce legislation to legalize online transactions for e-commerce and e-government and protect consumers.
- Change regulations and adapt competition policy to encourage converging services, ending artificial restrictions across telecommunications, broadcasting and information technology.
- License high-speed wireless networks.
- Increase access to computers, and provide more training and education in relevant fields.
- Create a credit guarantee facility to promote SMEs in ICT.

1. THE GROWTH AGENDA: AN EXPORT-ORIENTED, RESOURCE-BASED APPROACH

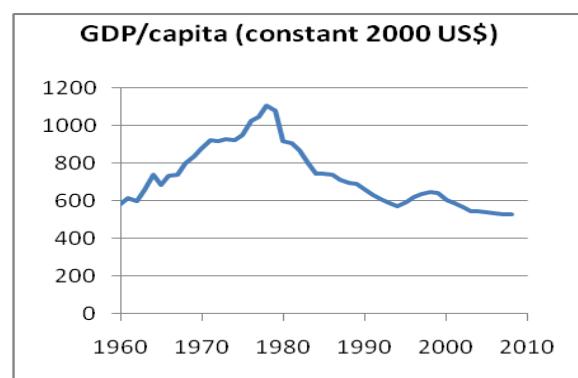
1.1. Côte d'Ivoire was an economic success story in the 1960s and 1970s, and even considered by some observers as an economic “miracle”. There was nothing miraculous about its success, however, except perhaps in comparison with its neighbors. The country was blessed with ample land and rainfall, and government took full advantage of these resources by promoting agriculture and the wood industry through heavy reliance on the private sector, with an open-door policy for both foreign investors and labor. The government invested in transport and energy infrastructure and created an investment climate which encouraged the development of sizeable manufacturing and services sectors serving the local and regional markets. By 1980, Côte d'Ivoire was the richest country in West Africa and the growth pole for the sub-region.

1.2. However, economic decline began around 1980, as commodity prices fell, state enterprises and marketing boards became increasingly burdensome, public investment tended toward unprofitable projects, and declining revenues were offset by growing external debt. An overvalued exchange rate was an important part of the problem in the late 1980s and early 1990s, as the government failed to implement the internal adjustment necessary to preserve external competitiveness. This problem was dealt with, at least temporarily, in 1994 with the nominal devaluation of the CFA franc. The economy rebounded, with GDP per capita growing at an average of 6.3 percent between 1995 and 1998.

1.3. A deteriorating political situation in the late 1990s led to a brief armed conflict and the division of the country in two distinct parts in 2002 – the Center-North-West, and the South-Southeast. The socio-political crisis, coupled with economic mismanagement, corruption and the withdrawal of donor support, took a heavy toll on the economy, infrastructure and institutions. Since

2000, Côte d'Ivoire's growth performance has been among the weakest in sub-Saharan Africa: the average annual GDP growth rate was -1.0 percent between 1999 and 2003, recovering slightly to a mere 1.6 percent over the period 2004-08. In 2009, economic growth finally surpassed the rate of population growth (3.8 percent vs 3.0 percent) for the first time in many years. Unfortunately, a renewed post-election crisis in late 2010-early 2011 has once again set back the economy. Thus the Ivoirian decline has been almost as dramatic as its rise. Average per capita income has returned to the level achieved at independence in 1960 (see Figure 1.1). Poverty, which stood at only 10 percent in 1985, rose to an estimated 43 percent by 2008, and is probably still worse in 2011.¹

Figure 1.1: GDP per capita: 1960 - 2009



¹ World Bank, Poverty Assessment, 2011. The national poverty line used is about US\$1.50 per day depending on the exchange rate.

1.4. **Côte d'Ivoire in 2011 cannot be compared to Côte d'Ivoire at independence.** Its infrastructure is far superior, and has survived the recent turmoil, even though there has been little maintenance and even less investment over the last 15 years. Its human resources are much richer thanks to heavy investment in education and on-the-job training in both the public and private sectors, though here too there has been a recent decline due to the deteriorating quality of education and some emigration. Its natural resource base has expanded in one important sense, as off-shore oil and gas has been developed. Crude petroleum production has increased from 2.6 million barrels in 2000 to 16.5 million in 2008.

Table 1.1: Exports: Value, Share and Growth

Type of export	Value of exports 2008-09 average (\$ mil.)	Share of total (%)	Growth rate p.a. 2000/01 – 08/09
Agricultural products	4,737	47.4	11.4
- Cocoa and cocoa products	3,265	32.7	13.6
- Rubber	424	4.2	24.1
- Cashew	220	2.2	22.8
- Palm oil	138	1.4	16.8
- Coffee	134	1.3	-3.3
- Cotton*	93	0.9	-7.7
- Other agricultural	463	4.6	5.0
Fish and fish products	183	1.8	5.7
Wood products	364	3.6	0.3
Oil and mineral products	3,414	34.1	32.5
- Crude oil	1,333	13.3	46.0
- Petroleum products	1,723	17.2	17.8
- Other	358	3.6	23
Manufactures	1,314	13.1	14.0
Total	10,014	100.0	14.9

* Using the mirror data from importing countries as official export data appeared misleading.

Source: UN COMTRADE data base.

1.5. **Exports have grown impressively in value terms even since 2000, driven by oil.** The value of total exports has grown by an average of approximately 15 percent per year (see Table 1.1). Crude petroleum exports have grown at an annual rate of 46 percent, due to a combination of rising volume and prices. Rubber and cashew have also enjoyed growth rates in excess of 20 percent, reflecting both real growth and improved prices. Petroleum products (17.8 percent) and cocoa (13.6 percent) have grown rapidly, though this has been essentially due to stronger prices. Manufactures have managed to grow at a rate similar to total exports, thereby maintaining their share. However, three traditional sources of growth have suffered decline (coffee, cotton) or stagnation (wood products).

1.6. **At the same time, the country faces new challenges.** Its natural resource base is not as rich as it used to be. The forests have been seriously depleted, and land is becoming scarce in some regions. The country's image as a safe haven for investment has been shattered. People have flocked to Abidjan, where many youth are un- or under-employed and represent a volatile social force. Most of them will have to be absorbed by the private sector but the existing

education system does not prepare them well for this market. And deep cleavages have been opened up within the population which will be a continuing source of tension for years to come.

1.7. There has also been a collapse in public and private investment which must be immediately reversed. Gross capital formation has fallen to a mere 10 percent of GDP during the 2000s whereas it needs to reach at least 20-25 percent (see Figure 1.2). As the World Bank-sponsored growth commission concludes: “Thanks to abundant labor and deep world demand, the speed of growth in the early stages of development is limited primarily by the pace of investment (public and private together).”² The main focus of this report is to identify growth sectors which can draw on world markets and available labor to attract significant private sector investment. It also seeks to define the type of public sector support needed to make them attractive, which may involve investment, though the amounts involved are typically modest. Much greater public investment is needed, but the bulk of it will likely be in infrastructure which is the focus of other reports.

1.8. The new government is in urgent need of a growth strategy which will generate jobs and reduce poverty, sending a clear signal that the worst is over and the future is promising. The Poverty Reduction Strategy calls for annual economic growth averaging 6.0 percent between 2010 and 2013, rising to 7.0 percent in 2014-15. Even higher growth will be necessary if the country is to offset the decline in living standards during the years of civil strife and meet the Millennium Development Goals. The authorities attach a high priority to the growth challenge and have asked the World Bank for advice on how to ensure a strong and sustained turn-around in the country’s economy. This report offers a partial response.

AN EXPORT-ORIENTED, NATURAL RESOURCE, SUB-SECTOR APPROACH TO GROWTH

1.9. This report focuses primarily on natural resource-based exports. This has always been the foundation of the Ivoirian economy and there is good reason to believe that there is still plenty of potential to generate rural and urban jobs through this channel, both directly and through the backward and forward linkages which will be created in manufacturing and services. Exports typically drive an economy, especially in a small, poor country, because they enjoy the virtually unlimited demand of the global market, unlike production for the small domestic market.³ However, some attention is also given to the opportunity for efficient import substitution in a few sub-sectors where there seems to be significant potential – in particular,

² World Bank, The Growth Report: Strategies for Sustainable Growth and Inclusive Development, 2008, p. 3.

³ Ivoirian cocoa is a rare exception given its large share of the world market, although current projections suggest that global supply will have trouble keeping up with demand.

rice, but also fish and meat. The emphasis on rural-based growth also holds the potential for the greatest impact on poverty given that 70 percent of the poor live in rural areas.⁴

1.10. The report adopts a primarily sub-sector approach for two reasons. First, growth in small, developing countries is generally driven by a few key sub-sectors which enjoy exceptional rates of growth and generate incomes and taxes which then stimulate demand in other sectors.⁵ In Côte d'Ivoire, the cocoa and coffee sector clearly played this role in the past, supported secondarily by a few others, such as the wood industry and oil palm. Second, the constraints faced by these sectors are often quite sector-specific and may be missed in a broad approach to economy-wide reforms of the investment climate. This is particularly true in natural resource-based industries. The binding constraints in cotton are very different from those in rubber, which in turn are different from those in the wood industry.

1.11. The focus on natural resource-based industries is also warranted by the prevalence of market failure which is arguably more common than in manufacturing or services. This is particularly true when small farmers dominate a sub-sector, as is generally the case in Côte d'Ivoire agriculture, or when common property resources are at stake as in forestry, fisheries or oil and gas. Coordination failures are especially prevalent, as farmers look for research and extension services, logging companies compete with each other and with farmers, and processing companies address market failure in financing through input credit only to be undermined by side-selling to competitors.

1.12. A significant component of the industrial sector is at least partially captured through this focus on natural resource-based sub-sectors. This includes cotton ginning, oil palm transformation, rubber processing, tuna canning, and wood products, as well as the future potential for cashew shelling and roasting. In addition, the analysis of the energy sector includes discussion of oil and gas production, as well as the very important production and export of petroleum products. This work also addresses some of the obstacles to adequate supply of electricity for the national and regional markets.

1.13. The manufacturing sector is also tackled from the standpoint of adding value through agro-industry. All Ivoirian governments have had a policy of adding value to raw material exports and this remains a key theme of the Poverty Reduction Strategy. However, there is some misunderstanding of the economic rationale for adding value - inside Côte d'Ivoire policy-making circles and beyond. It is therefore important to examine this issue in some depth in order to determine when adding value may be in the economic interest of a country, when it makes sense for a government to actively promote it, and how such an assessment can be made.

1.14. The report devotes some attention to two backbone services - transport and telecommunications. The transport sector facilitates exports of goods, and access to imported inputs, but also because transport represents a service export in its own right (for neighboring land-locked countries). The focus here is on the “soft” side of transport – procedures, regulations and services which are often overlooked in favor of hard infrastructure investments.

⁴ World Bank, Poverty Assessment, 2010.

⁵ Harold Innis first conceptualized this approach on the basis of his analysis of Canadian economic history.

Improvements on the soft side are typically more cost-effective if only because they cost little or no money. The telecommunications sector has been a major source of growth in sub-Saharan Africa. It has also grown in Côte d'Ivoire but the country has fallen behind some others in the sub-region in terms of the regulatory framework, education and access to technology.

1.15. This approach is consistent with the framework for growth identification and facilitation proposed by the World Bank's chief economist, Justin Lin, and Célestin Monga.⁶ It recognizes (i) the need to identify specific tradable goods and services with high growth potential which are consistent with a country's comparative advantage; (ii) the importance of giving priority to industries where firms have already entered spontaneously; (iii) the existence of binding constraints which are industry-specific and may be missed by broad improvements in the investment climate; (iv) the potentially important role of the state in addressing market failures; and (v) the risks of a proactive industrial policy which ignores comparative advantage. Our approach is a simplification in that – with one small exception, cashew processing – it does not attempt to identify new industries on the basis of what has worked in similar but more developed countries. Given the limited capacity of the state, and the number of existing sectors in need of attention, there would appear to be enough to occupy the state in the immediate future. And given this limited capacity, we emphasize the role of the private sector and the need for the state to rely on the private sector as much as possible.

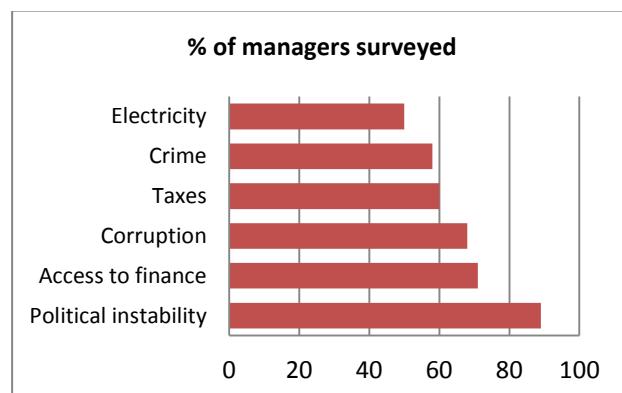
WHAT IS LEFT OUT?

1.16. The key cocoa sub-sector has not been examined in detail. Cocoa receives only limited attention for two reasons: i) it is not seen as a major source of growth; and ii) it is the subject of intensive analysis and debate in the context of the preparation of a new cocoa sector strategy. The challenge will be to avoid a decline in this sub-sector and to develop a consensus on a new institutional framework, and the Bank is actively involved in this dialogue. The discussion of cocoa in this report concentrates on its relative importance among the various competing agricultural value chains and the extent to which further processing should be promoted.

Figure 1.3: Major constraints according to ICSR

1.17. The broader investment climate issues related to promotion of the manufacturing and service sectors are not addressed. Beyond the specific issues of resource-based sub-sectors discussed here, most of the constraints faced by the secondary and tertiary sectors can be best tackled through improvement in the general investment climate. This agenda has already been explored in other reports and is relatively well-understood. The World Bank's

Investment Climate Survey Report (ICSR) provides important insights based on an enterprise survey of 526 firms, of which 189 were in manufacturing. Not surprisingly, it found political



J. Y. Lin and C. Monga, Growth Identification and Facilitation: The Role of the State in the Dynamics of Structural Change, World Bank Policy Research Working Paper 5313, May 2010.⁶

instability to be the problem most often considered to be a major or severe constraint by managers (89 percent). Other key obstacles are shown in Figure 1.3. The ICSR also provides useful analysis on access to credit and labor markets. The 2009 Financial Sector Assessment Program (FSAP) report provides many recommendations for the financial sector.

1.18. Further insights into the difficulties faced by investors can be drawn from the annual Doing Business Survey. This survey focused on the procedures involved in doing business – the number of documents, the time required and the costs incurred. Côte d'Ivoire ranked 169th out of 183 countries, similar to that of Cameroon but behind Senegal, and much worse than Ghana (see Table 1.2). Its ranking is universally bad across the different indicators, underlying the widespread nature of the problem. The new government is committed to improving its ranking and the World Bank and the IFC are supporting this reform program.

Table 1.2: Doing Business Rankings on Key Indicators

	Ease of Doing Business	Starting a Business	Dealing with Construction Permits	Trading across Borders	Paying Taxes	Getting Credit
Côte d'Ivoire	169	172	160	155	153	152
Cameroon	168	131	118	155	159	138
Mali	153	117	87	154	159	152
Senegal	152	101	117	67	170	152
Nigeria	137	110	167	146	134	89
Kenya	98	125	35	144	162	6
Ghana	67	99	151	89	78	46

Source: World Bank, Doing Business 2011.

1.19. The role of infrastructure is not examined in any detail. A good overview of the status of the various sectors is provided in the Africa Infrastructure Country Diagnostic (AICD) for Côte d'Ivoire.⁷ A Transport Sector Strategy is being funded by the World Bank. Electricity is partially addressed in the discussion of the energy sector, but a comprehensive treatment is not attempted. There is no doubt that access to electricity is a key constraint to growth. Blackouts in the first half of 2010 were largely responsible for a decline in GDP growth of 0.8 percent from initial forecasts. Infrastructure used to be one of the strengths of the Ivoirian economy but it has suffered from years of neglect.

1.20. Finally, the exchange rate is not analyzed here but it cannot be overlooked. This is the single most important price affecting a country's competitiveness.⁸ It takes on added importance in the case of Côte d'Ivoire and other members of the CFA franc zone, given the fixed link between their currency and the Euro. It is important to remember that the WAEMU group of countries enjoyed an immediate rebound in economic growth after the devaluation of the CFA franc in 1994. The effect was particularly dramatic in the case of Côte d'Ivoire where 13 years of decline were reversed and the country enjoyed four years of rapid growth. At the present time, it is not clear if the exchange rate suffers from any misalignment. However, the fairly steady rise of the Euro relative to the US dollar over the last 10 years must be cause for

⁷ This has been recently prepared by the World Bank and the AfDB and is available on the latter's website.

⁸ Hausmann, Pritchett and Rodrik (2005) found that exchange rate depreciation is an important part of growth accelerations and Freund and Pierola (2007) found that sustained manufacture export surges are typically preceded by a large real depreciation.

concern. The Ivoirian authorities will need to avoid inflationary pressures which raise the cost of domestic inputs and factors of production, and continue to improve the microeconomic sources of competitiveness to compensate for the absence of the macroeconomic instrument of exchange rate adjustment. The period of 1980-93 has shown how difficult the alternative of internal adjustment can be once competitiveness has been lost.

MOVING FORWARD: SOME PRACTICAL CONSIDERATIONS

1.21. The Ivoirian authorities face a challenge of prioritization on two broad fronts. After more than ten years of political crisis and economic decline, the need for reform is extensive. The choice of priorities can be facilitated by identifying key sub-sectors, but even then there are a large number with growth potential. It will be important to make some strategic choices. An attempt has been made to estimate the growth potential of various agricultural value chains, and clearly those with the highest potential deserve attention. But it will also be necessary to identify where the private sector can play the leading role, and where state involvement is critical to success. Fortunately, there are some sectors, such as rubber and oil palm, where the private sector is fairly well-organized and the state can limit its engagement to the regulatory framework and a few carefully targeted interventions which leverage the strength of the private sector and promote the interests of small farmers. On the other hand, sectors like rice and cotton may require more state support in the short and medium terms.

1.22. The authorities may also want to reflect on the institutional mechanisms for implementing and sustaining the growth agenda. As a first step, the present report will need to be discussed, revised and validated with the relevant stakeholders, supported by the more comprehensive background papers. Sectoral workshops will be needed to allow a more detailed discussion which involves the range of public and private sector actors. Ideally, an action plan will be drawn up. Then, regular consultations should be planned, perhaps on a semi-annual or annual basis to take stock of progress, and identify next steps, while retaining an objective, arm's-length relationship with the private sector. Additional analytical work will be necessary to examine the concerns of enterprises in the broader context of the national interest. While much of this is routine, the element of regular consultations often lapses quickly. Yet regular contact with the private sector is critical if a growth strategy is to remain well-informed.

1.23. For a more comprehensive approach, the authorities may wish to go one step further. Experience in successful developing countries has demonstrated the value of a small group of empowered technicians who can drive the reform agenda.⁹ Mauritius, Botswana, Cape Verde, Taiwan and Malaysia have all adopted variations of this model at some point in the past. Typically, the formula has involved highly qualified economists and other technical specialists with direct access to the highest levels of government and some control over funding, domestic and external. This combination has empowered them to obtain the cooperation of ministries and ensure proper coordination. Consultation with the private sector, without being captured by it, has been another key ingredient. For the first 20 years of Côte d'Ivoire's independence, the Department of Major Public Works (*Direction des Grands Travaux*) based at the Presidency played a similar role, with considerable success. It may be time to constitute a new team which can fill a similar function, though perhaps with a different institutional form.

⁹ Alberto Criscuolo and Vincent Palmade, "Reform Teams: How the Most Successful Reformers Organized Themselves", World Bank, Finance and Private Sector Development Note No. 318, 2008.

PART I: THE KEY SECTORS

2. AGRICULTURE: STILL THE FOUNDATION OF THE ECONOMY

2.1. **Côte d'Ivoire has built its economic development on agriculture and up to 1980 this was a highly successful strategy.** Indeed, progress has continued in some sub-sectors up to the present. Its performance in cocoa, as the world's largest exporter, is well-known. Less appreciated is the number of other crops in which the country has excelled. Côte d'Ivoire has become the largest exporter of raw cashew nuts in the world and remains the largest exporter of rubber, oil palm, bananas, pineapples and copra in Africa.¹⁰ At some point in the past, it was the largest sub-Saharan exporter of coffee and cotton as well, and both these crops remain significant, as does sugar. The country is self-sufficient in a variety of staple foods – maize, sorghum, millet, yam, cassava, plantain banana – with some small exports to the sub-region. The only exception is rice, for which imports represent two-thirds of the country's needs. The country is the third largest exporter of non-oil products in sub-Saharan Africa after South Africa and Nigeria.

2.2. **The agricultural sector accounts for 22 percent of GDP, over three-quarters of non-oil exports, and provides income to two-thirds of all households.** In addition, much of the manufacturing and transport sectors also depends on agriculture. Cotton ginneries, and rubber, palm oil, and sugar factories provide the base for rural industry, while an important component of urban industry is made up of cocoa processing plants, textile and cottonseed oil operations, an instant coffee factory, packaging materials, and second stage transformation of palm oil into soaps, cosmetics, etc. The domestic trade and transport industry (trucking, rail, port) depends on this sector for a large part of its business - 1.3 million tons of cocoa, 350,000 tons of cashew, 250,000 tons of bananas, 1.8 million tons of oil palm bunches, plus fertilizer, pesticides, etc.

2.3. **This success is the result of favorable agro-climatic conditions and enlightened policy.** Roughly 75 percent of the country's territory is arable, and rainfall is generally plentiful, while conditions vary enough between the north and the south to enable a wide variety of tropical crops. Soils are adequate, though they have traditionally required long fallow periods to rejuvenate. Agriculture received priority attention from the long, initial presidency of Houphouet-Boigny (1960-1993), who also recognized the need for labor and therefore opened the doors to immigration from neighboring countries. The private sector, domestic and foreign, has also been encouraged to invest in the sector. While parastatal companies dominated some sub-sectors in the 1970s and 1980s, they often played a constructive role, including the promotion of smallholder participation. When the need for improved management and additional investment became apparent, the state disengaged, with more or less success depending on the case.

2.4. **However, the agriculture sector has grown little over the last 20 years.** Plant production grew by an annual average of 1.6 percent between 1996 and 2003, before declining by 0.7 percent per year from 2004 to 2008. The livestock sector was stagnant. This implies that agricultural output was growing considerably less than the overall population, and even less than

¹⁰ Cameroon banana exports are comparable to those of Côte d'Ivoire.

the rural population. Declining world prices played a role, notably in coffee, cocoa, cotton and palm oil. The political crisis which erupted in 2000, and the subsequent division of the country, is partly to blame, especially for the decline in the cotton sector which is located in the northern part of the country, though it had remarkably little effect on the booming cashew sector in the same Savanna region. Although the crisis had little apparent effect on cocoa output, there is no doubt that it had a negative impact on agriculture in the southern part of the country, because of widespread land tenure insecurity and the many roadblocks that considerably increased transport costs. This crisis also undermined the implementation of liberalization policies introduced in the late 1990s (cocoa, coffee, cotton), and weakened governance at various levels. Cooperatives and other producer organizations succumbed to personal interests, and the cocoa sector in particular became rife with corruption.

2.5. This slowdown in agricultural growth also reflects the challenge of moving from an extensive production model to a more intensive one. Whereas past growth depended primarily on absorbing a growing labor force through expansion into new land, leaving previously cultivated land idle for many years, there is a need to focus more on increasing productivity on land already under cultivation, and with little or no increase in labor inputs. Land is still relatively plentiful at the national level, but it is becoming scarce in some high potential regions, requiring shortened fallow times, or even the elimination of this practice. Meanwhile, the rural labor force is ageing and it is becoming increasingly difficult to keep the next generation on the land. Consequently, a new model of production is required which is based on better farming practices, the spread of high-yielding varieties, greater use of fertilizers, and appropriate mechanization where possible. A shift in resources between declining and growing sub-sectors also seems inevitable. All this has major implications for research and extension services, financing, and input supply chains.

2.6. Nonetheless, the agriculture sector can and must regain its role as a driver of growth. Only 40 percent of arable land is currently being exploited, and the average farm size is fairly reasonable at 10 ha. Commodity prices have risen sharply in the last few years and they are projected to remain strong in the foreseeable future. This is particularly significant for the all-important cocoa sub-sector, but also for the lagging cotton and rice sub-sectors. Some sub-sectors have boomed in spite of the political crisis – notably rubber and cashew nuts – and these should continue to do well. Major private foreign investors are already engaged and willing to invest further, for example in oil palm and rubber. The food and livestock sectors also have potential for expansion given the rapid urbanization under way across the sub-region, and the prospect of rising meat and fresh produce consumption as incomes improve. Table 2.1 summarizes the potential growth rates of the different components of agricultural GDP over the next decade and how an overall rate of growth of almost 5 percent could be achieved in this sector. Such an achievement would provide a solid basis for robust growth in the national economy and would have a significant impact on rural poverty.

Table 2.1: Potential Growth Rate of the Agriculture Sector: 2011-2020

Sub-sector	Share of agricultural GDP	Potential growth rate (%)	Contribution to overall growth of agriculture (%)
Food crops, of which			
- Rice	0.62	4 10	2.5
Livestock	0.08	6	0.5
Export crops, of which:	0.30	6	1.8
- Casewh		15	
- Cotton		15	
- Rubber		10	
- Oil palm		10	
- Sugar		4.5	
- Cocoa		2	
Total	1.00		4.8

Source: Authors' calculations.

STAPLE FOOD CROPS AND LIVESTOCK

2.7. Demand for staple food crops should grow somewhat higher than the rate of population growth (3.0 percent p.a.). This is due to the effect of rising income, urbanization, and the demand for maize, sorghum and cassava for animal feed. There is great potential for import substitution in the case of rice, hence our hypothesis of 20 percent growth for this crop (see separate section on rice). All other food crops will have to expand sales into the sub-regional market if they are to achieve much higher growth rates. Limited exports already take place but they tend to be handled through the informal sector. Modern enterprises may have to get involved if the necessary storage, marketing and finance for large-scale trade are to be found. The state could assist regional trade through support to market information systems to help traders target deficit areas.

2.8. Maize appears to present the best potential for regional exports. The WAEMU region has a significant deficit in maize, but a surplus in millet and sorghum. Maize is the most widely cultivated cereal in Côte d'Ivoire. Average yields (900 kg/ha) are well below the regional average (1500 kg/ha) so there is ample room for productivity enhancement. In addition, maize is grown in rotation with cotton so a rebound in the latter would favor an increase in the former. Improved seeds, input supply and mechanization will be needed. Cassava has potential for exports, particularly for animal feed, and in the easy-to-prepare forms of gari and attiéké for human consumption. Plantain banana is also finding regional markets, with the help of innovations in its processing (chips, aloko, foutou). Major increases in yields are possible (15 tons/ha instead of 2-3 tons/ha currently).

2.9. The future of the livestock industry is less clear. Domestic production covers 45 percent of current meat consumption, and only 15 percent of current consumption of milk products. There is thus, in principle, a great opportunity to substitute for imports as well as to satisfy the rapidly expanding demand for animal products which comes with rising incomes. On the other hand, Côte d'Ivoire is not a traditional livestock country and it has relied on the Sahelian countries for much of its red meat, and cheap imports from overseas for chicken and milk. However, meat production was growing at 6 percent per year until the 2002 crisis led to the disappearance of veterinary services in the north, so one could expect a recovery in this sub-

sector with the normalization of the political situation. Poultry production has suffered from competition from frozen chicken parts from Europe and Brazil, a common phenomenon across coastal West Africa. Côte d'Ivoire responded with a special import tax in 2005 which sparked resurgence in the domestic poultry industry (8 percent p.a.). However, it is not clear whether this tax is consistent with WTO or WAEMU rules, or if it is in the interest of the poor.¹¹

2.10. The diversified export crop sector includes sub-sectors with contrasting growth potential, but it should do well overall. The most promising sub-sectors are discussed in separate sections of this report, while the prospects for those in difficulty are summarized briefly in the following paragraphs.

DECLINING SUB-SECTORS: PINEAPPLES AND COFFEE

2.11. Not all traditional export sub-sectors have a promising future and farmers should be encouraged to move into new activities if necessary. The pineapple industry is the most obvious example. Exports have plummeted from 150,000 tons in 1999 to only 31,000 tons in 2009. Exports from smallholders have nearly disappeared. They have been squeezed out of the European market by an aggressive campaign from Latin American countries who have introduced a new variety which quickly gained popularity while reducing production costs.¹² Tougher product standards and traceability requirements in Europe have also posed a major challenge for small farmers. As a result, farmers have been switching into more profitable alternatives, notably rubber. A few large-scale industrial plantations continue to export some 30,000 tons and they are in a better position to make the necessary adjustments. They are investing to improve their competitiveness and may be able to increase their exports to the rapidly expanding European market. It is doubtful that smallholders are in a position to do the same. All the remaining cooperatives are in financial difficulty and ill-prepared to adapt. Official plans for a rebound in this sub-sector appear unrealistic, though it may be possible to promote some out-grower schemes (with a technical and commercial support from the remaining industrial plantations).

2.12. The case of coffee is more complicated. As one of the two traditional mainstays of the Ivoirian economy, it will be difficult to accept that this crop is no longer viable. Exports still average some 100,000 tons per year, but this is down from a peak of 370,000 tons in 1981. World prices for robusta coffee, which Côte d'Ivoire produces, have been low for many years, and although they have strengthened somewhat in the last year, this is not projected to last. There is no potential for the branding and marketing strategies which have proven successful for some arabica producers, such as Rwanda. A small part of the production is transformed locally into instant coffee (25,000 tons) but there is little prospect for significantly expanding this activity. Yields are low, trees are old and need replacement, and coffee cultivation is relatively labor intensive. Farmers have been abandoning coffee in favor of the more lucrative cocoa, and more recently rubber. The government should probably concentrate its efforts on growers who can progress toward differentiated and high-quality product while expanding their estates, especially

¹¹ Contrary to popular opinion, these chicken parts are not “dumped” by the definition of the WTO, but instead represent a cheap by-product of foreign markets which demand white meat but have no use for the associated brown meat. It would be important to assess the impact of these import taxes on poor consumers.

¹² The new variety, MD2, produces two harvests from the same plant.

in regions that have no obvious alternatives, and organize a smooth exit for other non-competitive growers towards more profitable activities in or outside the agriculture sector.

STAGNANT SUB-SECTORS WITH POTENTIAL: BANANAS, SUGAR AND COCOA

2.13. The banana industry is suffering similar problems to those of the pineapple sub-sector. European product standards and traceability are again making it difficult for smallholders to comply. Latin American competition is increasing as the European Union has been obliged to reduce the preferences traditionally offered to its former colonies in Africa, the Caribbean and the Pacific, and these preferences will decline further over the coming decade. Côte d'Ivoire's exports have stagnated since 2000 (at about 230,000 tons) in spite of the fast growing European market, and its share of this market has fallen from 65 percent in 1999 to only 15 percent today. There has been an important consolidation in the sector and currently one large producer is responsible for about two-thirds of total exports. Small holders have all but disappeared from banana cultivation. However, industrial plantations have made important efforts to increase productivity and competitiveness, and they may be able to maintain their current level of production, providing the investment climate improves, particularly in terms of trade facilitation. The domestic and sub-regional markets will offer some opportunities for modest growth. This market and the increasing demand in niche markets (organic, fair trade) may also offer some opportunities for smallholders, with support on quality, standards and marketing.

2.14. The sugar industry is also losing its preferences in the European market but it enjoys a large, protected domestic market. Côte d'Ivoire has two companies which operate four sugar complexes with a total capacity of 250,000 tons. Total production in 2009 amounted to 180,000 tons, of which 80 percent was consumed locally, the rest being exported to Europe and the regional market. This was enough to satisfy local demand, which has generally been protected from import competition.¹³ The privatization implemented in 1997 brought in two credible groups who have made significant investments. The industry has suffered badly from the political crisis, due to the disruption of supply chains, theft, and informal taxes, and now requires further investment. However, world prices have improved recently and with planned support from the EU, this industry could remain competitive, at least in the national and regional market.

2.15. There is potential for expanding exports within West Africa, providing world prices remain higher than in the past, and the industry is able to bring down costs. Current production in the ECOWAS group of countries is only sufficient to meet 20 percent of demand, and product standards are less demanding. In principle, Ivoirian sugar should benefit from the regional free trade agreements of WAEMU and ECOWAS. In practice, however, many countries protect their own sugar industries, including by allowing them to subsidize their operations through a monopoly on cheap sugar imports from overseas, while failing to accord duty free status to Ivoirian sugar. On the other hand, the industry will continue to enjoy strong national demand, estimated to be rising by 4 percent per year. Thus, even if Côte d'Ivoire loses its overseas

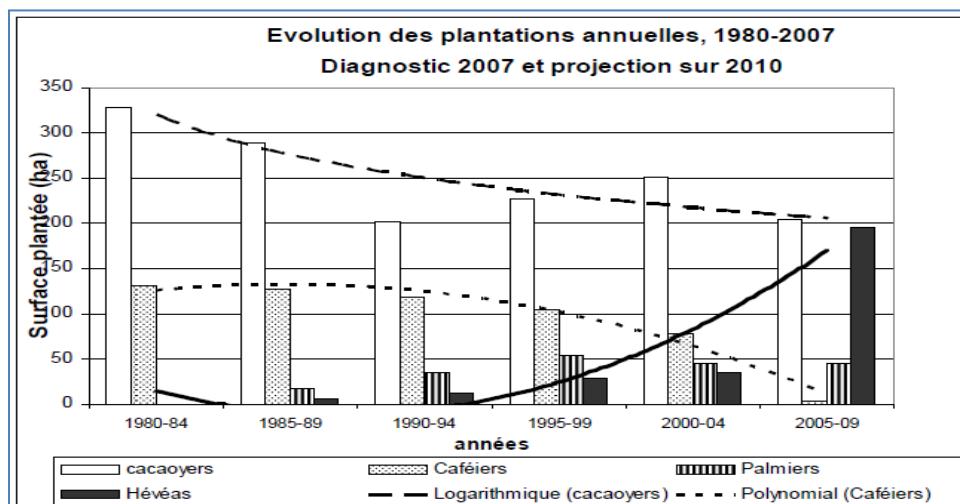
¹³ As allowed by WAEMU, Côte d'Ivoire has used an equalizing tax (Taxe de Péréquation) to maintain a given domestic price, regardless of how low the world price falls. This policy was not applied between 2003 and 2006, resulting in significant imports, but has been reinstated since 2007.

markets, it should be able to maintain current production levels and eventually reach full capacity utilization of the four sugar complexes. Annual growth of 4-5 percent seems possible.

2.16. The cocoa sub-sector remains the central pillar of the economy and it requires immediate attention. Production has fluctuated around 1.3 million tons since the mid-2000s, depending primarily on the adequacy and timeliness of the rains. Some observers fear that the sub-sector cannot avoid a decline; others hope for continued expansion, including those in the international chocolate industry who worry about a global shortage. All agree that there are many serious problems that require urgent attention. Yields are low, diseases are spreading, the trees are old and in need of replacement. The governance of the sub-sector is in turmoil, at all levels from the national to the village. The producer organizations have been discredited. The majority of cocoa farmers have fallen below the poverty line. A new strategy and institutional framework is needed, but the most recent proposals have created anxiety among the international private operators on whom the sub-sector depends. Not surprisingly, farmers are starting to abandon cocoa (and coffee) in favor of less taxed, more profitable and better organized crops such as oil palm and especially rubber (see Figure 2.1).

2.17. The solutions to the cocoa crisis are well-known and many actors are ready to help, but that does not mean it will be easy. There are huge financial interests at stake and a long tradition of exploiting the sector for personal benefit, and at the expense of farmers who have typically earned less than 50 percent of the world price. The debate over the appropriate role of foreign enterprise continues. Large investments will be required to replace the existing plantations, and only limited funding will be available in the short term. And perhaps most fundamental, cocoa is competing directly with rubber cultivation in many regions. Over the past ten years, rubber has offered compensation five times as high per day worked as cocoa¹⁴, revenues which are spread evenly over the entire year, minimal taxation, and a well managed inter-profession. While some observers bemoan the movement of farmers out of cocoa, one should instead be thankful that alternatives like rubber (and oil palm) exist.

Figure 2.1: The Changing Structure of Agriculture Land Use



¹⁴ Even at the high cocoa prices of early 2011, rubber was still three times more profitable.

2.18. A consolidation of the cocoa sub-sector is probably necessary, with fewer farmers enjoying higher productivity. Many cocoa farmers have too few trees to earn a proper living, and many plantations are reaching the end of their productive life. An estimated 60 percent of cocoa farmers live below the poverty line and indeed they account for some 28 percent of all the poor in Côte d'Ivoire. Many of these farmers should probably be encouraged to seek alternative livelihoods. Rubber and oil palm companies are more than willing to provide support through outgrower schemes. The state and its partners could then focus on a subset of cocoa farmers who are more productive or have the potential to become so. These farmers could be organized into efficient producer associations able to become partners with private traders and exporters to get better access to inputs and markets. Through replanting with high-yield varieties, better husbandry and drying, output per hectare could triple. The same national output could be produced by fewer farmers, and eventually overall output might increase. Cocoa could once again become part of the solution for poverty reduction. Furthermore, the economy would become more diversified and less vulnerable to the vagaries of the world cocoa market.

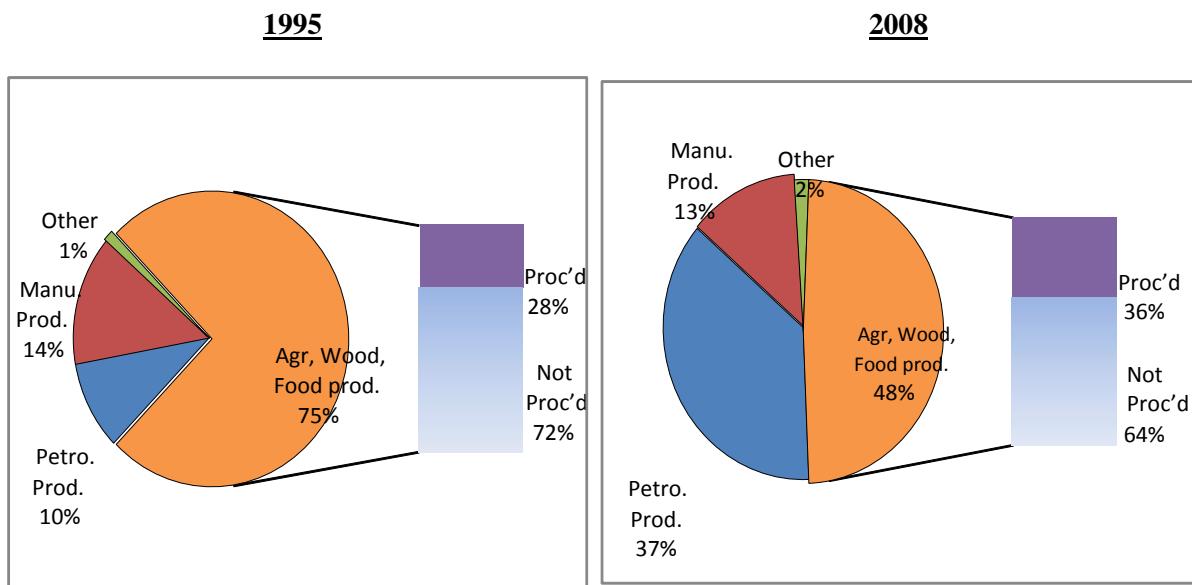
2.19. A new cocoa strategy and institutional framework is urgently needed. A draft strategy was at an advanced stage of preparation in late 2010, although there was no clear consensus on some of its critical elements. The new government was in the process of revisiting it in mid-2011. Additional consultations will be required with all stakeholders, as the insulated approach to developing the proposal appeared to be one of its major weaknesses. The World Bank has already provided extensive comments on earlier drafts and it stands ready to support the completion of this process.¹⁵ However, cocoa is unlikely to be a significant source of growth. It will be difficult for output to grow in the short to medium-term, because of aging trees and the threat of disease, while world prices are likely to decline from their current 30-year high. This report will therefore focus in Part II on the sub-sectors which are already growing quickly – rubber and cashew – or which hold the promise of rapid growth – cotton, oil palm and rice.

¹⁵ The completion of this strategy and its implementation for 6 months is also one of the two outstanding triggers for HIPC completion point.

3. AGRO-INDUSTRY: PROMOTING VALUE-ADDED

3.1. **Almost all countries seek to develop their industrial sector, and Côte d'Ivoire is no exception.** It is seen as a way to capture more value from natural resources, generate urban employment, learn new skills, benefit from the faster growth in demand associated with manufactured goods, diversify the economy and reduce vulnerability to fluctuating commodity prices. Countries typically intervene in many different ways to encourage this process, but a heated debate continues over the effectiveness of these policies and the circumstances under which they may be warranted. East Asian countries have had some success in this respect, while sub-Saharan African countries are better known for their failures. Côte d'Ivoire has long had an explicit policy of promoting the transformation of its various primary products. This policy is emphasized once again in the current Poverty Reduction Strategy, where the government has set a target of processing 50 percent of locally-produced primary products.¹⁶

Figure 3.1: Evolution of the Structure of Exports: 1995 - 2008



3.2. **Côte d'Ivoire has an impressive industrial sector**, only surpassed in West Africa by that of Nigeria. This sector accounts for approximately 19 percent of GDP, as compared to 11 percent in Senegal and only 8 percent in Ghana.¹⁷ Unlike that of Nigeria, this sector has proven fairly competitive in Côte d'Ivoire, exporting significant amounts especially, but not exclusively, to the sub-region. While the share of industrial exports has fallen as a percentage of total exports, this is because crude oil exports have increased so dramatically (see Figure 3.1). In fact, both manufactured exports and processed agricultural exports have more than doubled in value since 2002 (see Table 3.1), and their share of exports of non-petroleum products has risen from 39 percent in 1995 to 48 percent in 2008. The share of agricultural raw materials in non-petroleum products steadily decreased during this period from 60 percent to 50 percent. The

¹⁶ Presumably this excludes petroleum.

¹⁷ World Bank, World Development Indicators, 2007. This definition includes refined petroleum products.

share of processed goods in total agricultural and agro-industrial exports has improved, from 28 to 36 percent (see Figure 3.1).¹⁸ This progress is surprising given the difficult investment climate prevailing in Côte d'Ivoire over the last 10 years. It may be explained by a shift in business from the domestic to the international market. Overall, the industrial sector (excluding petroleum refining) has not shown much dynamism, with its share of national GDP falling from 17.5 percent in 2002 to 13.6 percent in 2009.

Table 3.1: Evolution of Processed and Manufactured Exports

	US\$ billion			% of non-petroleum exports		
	1995	2000	2008	1995	2000	2008
Agricultural raw materials	2.02	1.57	3.08	60	54	50
Processed agricultural products	0.78	0.74	1.70	23	26	28
Manufactures	0.53	0.52	1.24	16	18	20
Other	0.05	0.06	0.16	1	2	2
Sub-total	3.38	2.89	6.18	100	100	100
Crude oil and petroleum products	0.37	0.74	3.63			
Total	3.74	3.63	9.78			

Source: COMTRADE.

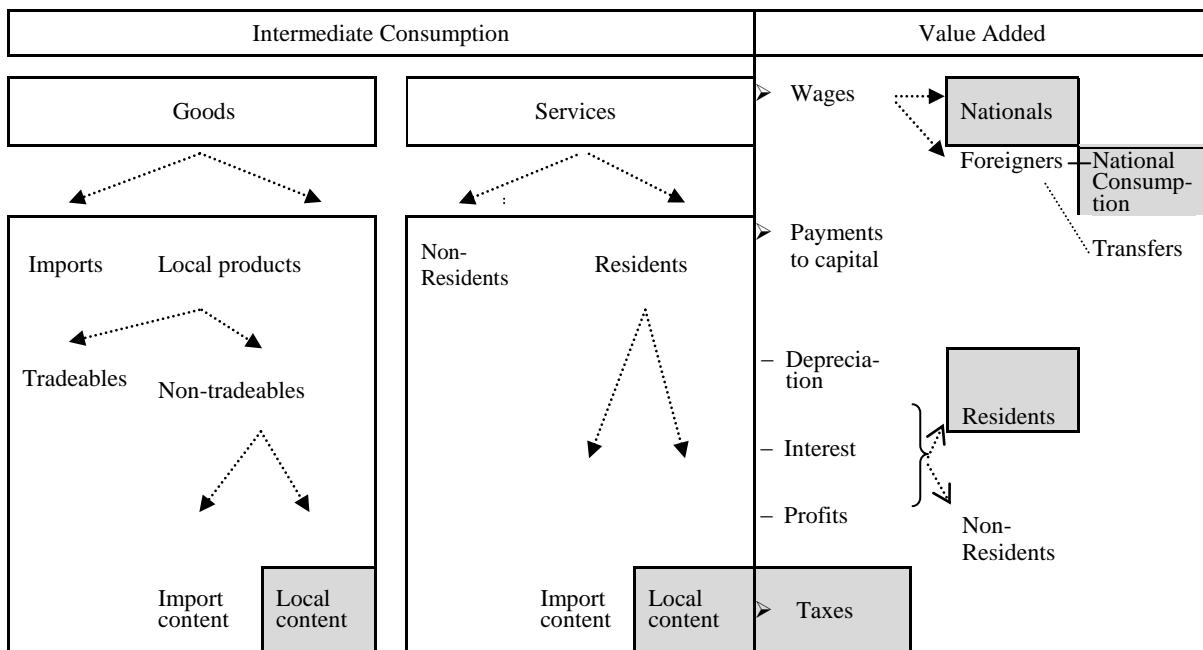
VALUE-ADDED

3.3. The processing of primary products seems like a logical next step, and in some cases it is essential. Cotton has to be separated from its seed and transformed to fiber before it is exported; the latex from the rubber tree has to be processed into rubber. Palm oil has to undergo a first stage of processing in order not to go rancid. Sugar cane is far too bulky to be transported very far and it soon starts to lose its sugar content, so it is always processed near to the plantations. Then the question is how much more processing is feasible.

3.4. Transforming a primary product does not always add value. There are cases where an unprocessed product actually sells at a higher price – such as fresh pineapples or tuna as compared to the canned alternative. The value-added in these instances lies in the management of the supply chain, ensuring adequate storage and transport facilities to deliver a perishable product which respects stringent phytosanitary standards, often including traceability. Here canning becomes a second-best choice. And, in a case such as bananas, there may be no alternative to exporting fresh.

¹⁸ Making this distinction is not straightforward; the methodology is described in the background paper.

Table 3.2: Estimating Value-added



3.5. The problem lies in the term “value-added”. The fact that a processed product sells for a higher price than the raw material does not mean that it adds value, at least not for the country. There will have to be some value-added for the enterprises concerned or they would not operate. But this does not mean the country will benefit. There are two other questions which must be answered: (i) how important are any incentives being provided by the government; and (ii) how much of the value-added is actually captured by nationals, either through wages, dividends, rent or taxes. Often governments provide incentives in the form of tax reductions or exemptions, or subsidies on such things as capital or utilities. Estimating how much of the value added remains in the country is not straightforward either, as demonstrated in the following chart.

3.6. It is possible to have negative value-added. This can happen in two ways. If the transformation process is very inefficient, so much of the primary product may be lost that it would have been better to export it in the raw form. For example, if the processing of logs into wood products results in major losses of wood which cannot be used for anything else, then, after accounting for the cost of processing, it may have been more profitable to export logs. Or, the processing may be efficient but the small value added may be more than offset by losses to the state due to subsidies or other special treatment. For example, governments typically tax wood products much less than log exports, but the lost tax revenue may be larger than the benefits earned by national workers and shareholders.

3.7. The distributional implications of promoting value-added must also be considered. Promoting a capital-intensive processing operation may benefit relatively few better-paid urban employees at the expense of poorer farmers. For example, mechanized cashew shelling is often encouraged by applying a tax on exports of raw cashew. This may generate several thousand jobs in processing plants but it is also likely to mean a lower farm-gate price for farmers who

number in the 100,000s. If the largest benefits accrue to firm owners, and if some or all of them are foreigners, the results are not likely to be pro-poor.

3.8. Value-added must be assessed in the context of global value chains. The dramatic fall in the cost of transport has brought the world much closer together and removed much of the advantage of proximity to raw material supplies or final consumers. In many sectors, national integrated value chains are a thing of the past. In the case of clothing, it now makes economic sense for Burkina Faso to export its cotton fiber to China where it is transformed into cotton/polyester blended textiles and then sold to Bangladeshi clothing manufacturers who export their final product to the United States. And that holds even though the US is a significant cotton exporter too! The advantage of having cotton in Burkina Faso soon fades beside the high cost of capital and electricity, the need to import non-cotton inputs, and the inefficiency of small-scale production runs.

3.9. Nonetheless, the market prices which determine private sector decisions may underestimate the benefits of an activity to society as a whole. High taxes may render an economic activity unprofitable for the private operator, while the government reaps substantial rewards. Less obviously, the cost of employing workers may be higher than their cost to the economy as a whole. The minimum wage, social benefits and/or other labor legislation may raise the cost of unskilled labor to a price that the private operator cannot afford, yet there may be many unemployed who would be willing to work for less – and whose employment would cost little or nothing to the economy since they are not producing anything. If these “market distortions” cannot be removed for one reason or another, governments may choose to offset them with other incentives.

3.10. Comparative advantage can also change over time and state support can accelerate this process. A careful analysis may determine that firms could be competitive in the processing of a raw material once certain constraints are removed. This might relate, for example, to electricity costs which are temporarily high, production costs which will fall as output increases, or labor productivity which will improve through learning-by-doing. If there is reason to believe that the cost disadvantage is small, and that the expected improvements can be achieved in a short period of time, temporary incentives may be justified. Unfortunately, the international and African record for such incentive programs has not been very good. This is often because the inherent disadvantages faced by an activity are underestimated, the underlying constraints are not addressed, and the support becomes permanent. States without the capacity to assess the costs and benefits of such programs, or the political will to stop incentives when it is clear they are not working, are well-advised to resist the temptation to launch them.

3.11. The safest approach is to identify the key constraints to profitable processing, and determine what if anything the state can do to alleviate them directly. For example, in the case of the wood industry, the declining supply of raw material is now a central problem. Given that the forests are a common property resource, the state clearly has an important role to play in managing it. Unfortunately this has not been done very successfully in the past and is in need of considerable improvement. In addition, the industry will need to begin using imported logs – most probably from Liberia – if it is to avoid further decline. The state can play a useful role in facilitating duty-free importation of logs, notably by ensuring that customs agents respect the ECOWAS rules on free trade which allow for duty-free import of primary products from

member countries. The state may also be able to assist through bilateral discussions with the Liberian government on the establishment of maritime cabotage services.

COCOA AND CASHEW

3.12. These two products provide an interesting contrast which exemplifies the issues related to value-added. It has been estimated that the FOB price of cocoa (including taxes) accounts for a mere 11 percent of the final value of chocolate. Hence there is a lot of value-added which is not captured in Côte d'Ivoire and indeed the government has made considerable effort to move up the value chain. With the help of reduced export taxes and other incentives, the government has convinced private operators to process about 40 percent of the annual harvest of cocoa beans, as cocoa butter, liquor, cake and powder, and some liquid cocoa ("couverture"). However, cocoa butter and liquor only constitutes another 4.6 percent of the final value; liquid cocoa represents another 11.1 percent (of which 3 percent is sugar). The final manufacture and marketing of chocolate tablets account for the remaining 74 percent of value.

3.13. Cocoa processing is capital and energy intensive and adds extra storage and transport costs. Most operations are fully automated and require both heating and cooling stages which are particularly costly in a tropical climate. A processor in a cocoa producing country has to cool the butter and package it (often using imported materials), transport it under controlled conditions, and then the importer has to melt it down in special facilities before it can be turned into chocolate. In contrast, cocoa beans can be shipped loose in containers and do not require special treatment. Processors in the Netherlands have the advantage of cooler weather and cheap natural gas energy. They can also store their butter in liquid form and deliver it in tanks on a just-in-time basis to nearby customers (e.g. Belgium, Switzerland). For these and other reasons, "it is not surprising that virtually all cocoa-processing operations in origin countries depend on subsidies in one form or another."¹⁹

3.14. Cashew processing presents a very different situation. The value chain is much simpler – shelling, roasting and salting, and marketing. Labor-intensive technologies exist for shelling which are actually more advantageous than mechanized alternatives because fewer nuts are broken. These technologies can also be net generators of energy through the use of the shells as biomass. The raw cashew nut accounts for 34 percent of the final product value, while shelling adds another 8 percent and roasting and salting an additional 16 percent. The contrast in cost per job created is stark. One job in cocoa processing costs an estimated US\$420,000, as compared to US\$1,290 for a job in cashew processing. In other words, it costs 333 times more to create one job.²⁰ The remaining value added is primarily profit, much of which accrues to non-nationals.

3.15. In addition to the investment costs, one must consider the loss in tax revenues. While the export tax paid on cocoa butter and liquor is not much lower than for cocoa beans, it is only about one-half as large in the case of liquid chocolate or couverture. Recent policy has been

¹⁹ ITC, *Cocoa: A guide to trade practices*, p. 98. Other problems for cocoa-producing countries include storage of beans for year-round production, timely access to imported spare parts, and finding a market for the cake by-product. A 2001 BNEDT study concluded that Côte d'Ivoire was not competitive in cocoa processing.

²⁰ The jobs in cocoa processing would be better paid but because they involve more skilled labor, their opportunity cost will be much higher. If the same labor would have been hired elsewhere, the net social benefit could be zero.

to promote the transformation of one-half of the cocoa harvest. If this was pushed to the level of liquid chocolate, the state would lose US\$137 million per year at the prices prevailing in early 2011, or an additional US\$91,000 per job. If processing were limited to butter and liquor, the tax loss per job would be much lower – in the order of US\$11,000 – but still comparable to, if not above, the average salary paid to the employees. By contrast, the loss in export taxes from promoting cashew processing would be approximately US\$10 million, or US\$200 per job. Table 3.3 summarizes these preliminary estimations. More work will be needed to refine the analysis – including any other tax incentives or subsidies which may be involved – but the contrast is so great that the overall conclusion will not change. If the main objective is jobs, priority should be given to cashew nut processing (see chapter 7 for more details). In fact, cocoa processing has received all the attention and cashew processing has been neglected.

Table 3.3: Investment and Export Tax Implications of Processing Cocoa and Cashew Nuts

	Cocoa	Cashew
For one processing factory		
Investment costs per factory (US\$ 000s)	84,000	644
Capacity (tons)	100,000	1,500
Employment	200 (250) ⁺	500
Investment cost per job (US\$)	420,000	920
To process half of annual output		
Half of total annual production (tons)	600,000	150,000
Value per ton (US\$)	3,000	650
Tax loss per ton from processing (%)	7.65*	10**
Total tax loss (US\$000s)	137,000	10,000
Total job creation	1,500	50,000
Tax loss per job (US\$)	91,000	200

+ Assuming an extra 50 jobs created for the production of liquid chocolate.

*Assuming all cocoa is processed into liquid chocolate.

** The current tax difference between raw and shelled cocoa is only 4.5% but we assume this will have to increase to 10% to provide the necessary incentive.

OTHER SUB-SECTORS

3.16. The potential for value-added in coffee is limited for different reasons. Ivoirian Robusta coffee needs to be mixed with Arabica coffee in order to be attractive to the final consumer, but Arabica coffee is not available in any significant proportions in West Africa. This effectively prevents the direct marketing of Ivoirian branded coffee. Côte d'Ivoire has attracted a Nestle factory producing instant coffee, which is an important asset given Nestle's dominant position in the global market. However, this also means that it is subject to Nestle's global strategy and so there is little potential to expand these sales beyond the regional market which Nestle targets from its Abidjan plant.²¹

3.17. In wood products, significant processing capacity has existed for some time but it is now struggling. There will be pressure from the industry to obtain support in order to prevent further plant closures, as well as proposals to prevent the export of teak logs. However, the

²¹ Similarly there is little potential to develop the production of chocolate milk powder in Côte d'Ivoire since Nestle has located this activity in Ghana.

industry includes a wide range of actors, and it is not clear that all of them have the potential to be competitive. The state may be best advised to address the common problem of raw material supplies and then let competition within the private sector determine which companies survive. It will also need to be careful not to provide incentives for teak processing unless it is clear that private firms are prepared to invest in the new technologies needed for this small-diameter log.

3.18. Tuna canning poses even greater challenges. In 2005, the state granted special status to these canneries, including tax exemptions and the reimbursement of 50 percent of the costs of electricity, petroleum products, water and telecommunications. While these advantages have not yet been paid, there is now strong pressure to honor this commitment. However, it is not clear whether a cost-benefit analysis has been conducted to justify this policy, or whether such an analysis would be positive in the current context. Ivoirian canned tuna is competitive at the moment because it enjoys important tariff preferences in the European market which are likely to diminish over time. Furthermore, one of the major Asian players has recently purchased canning facilities in Ghana and the competition for tuna supplies is going to grow dramatically. Assessment of the long-term viability of this activity is urgently needed before state support is deployed.

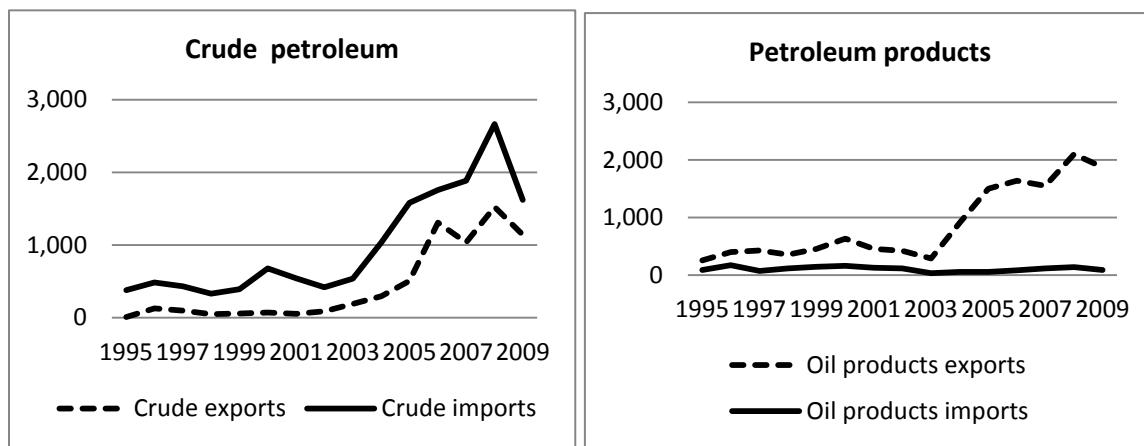
3.19. Adding value has also been justified by the need to reduce vulnerability to world price fluctuations. However, the evidence for this argument is not convincing, at least in the case of Côte d'Ivoire. The price of cocoa beans correlates almost perfectly with that of cocoa liquor, and the correlation is also very high with cocoa butter. The same is also true for green coffee and instant coffee, or for unprocessed and semi-processed vegetable oils. On the other hand, processing cashew nuts may be partly justified in order to reduce dependence on one buyer, India, which has a dominant position in the world for processing raw cashew and a virtual monopsony in Côte d'Ivoire. India also has an explicit policy of achieving self-sufficiency in raw cashew production over time.

3.20. In conclusion, an undifferentiated policy of adding-value to all primary products is a highly risky approach. It is more advisable to approach this issue on a case-by-case basis and to do a careful assessment of current and likely future competitiveness, accompanied by a cost-benefit analysis, before offering any government support.

4. ENERGY: OIL, GAS AND ELECTRICITY

4.1. **The energy sector has been one of the main sources of growth in the last ten years.** Crude oil output quadrupled between 2002 and 2009 with the start of operations at the Baobab deepwater oil field, reaching a maximum of 70,000 barrels per day. With the average price of crude oil also quadrupling over the period, this resulted in a major increase in export earnings and a smaller but significant rise in government revenues. Exports of crude oil increased from US\$91 million in 2002 to US\$1.1 billion in 2009 (with a peak of US\$1.5 billion in 2008; see Figure 4.1). Taxes, dividends and other revenues amounted to 14 percent of total government revenues in 2008, but fell to 5 percent the following year.

**Figure 4.1: Trade in Crude and Refined Petroleum
(US\$ million)**



4.2. **Côte d'Ivoire is also a major producer and exporter of petroleum products.** Its refinery (Société Ivoirienne de Raffinage, SIR) is the largest industrial enterprise in the country, and indeed in all of WAEMU. Total sales were estimated at US\$2.8 billion in 2010. It is also considered to be one of the best performing oil refineries in sub-Saharan Africa. More than half of its output is exported to neighboring countries, as well as Nigeria and even the United States. The value of petroleum product exports increased dramatically from 2000 to 2009, in line with world prices, while output also rose slightly due to higher efficiency and productivity gains. This refinery was built before oil was discovered in Côte d'Ivoire and is designed for the lighter oil available in Nigeria. The value added of petroleum products is therefore limited to that which derives from the refining operation, and the cost of imported oil should be deducted from the value of petroleum product exports, to obtain an accurate measure of the net exports generated in this category. Taking crude oil and petroleum products together, net exports amounted to an estimated US\$900 million in 2010.

4.3. **Côte d'Ivoire is one of the few countries in Africa which uses its own natural gas on a significant scale.** It produces gas either in association with crude oil or in separate gas fields. Gas production increased when the Baobab oil field began operation, but in more modest proportions. While none of this is exported, it plays a major role in electricity generation and energy supply to the industrial sector. All thermal electricity generating plants in the grid now use natural gas, and most major industrial enterprises have converted from oil and diesel to gas.

This should be an important advantage for the Ivorian economy as gas-based thermal energy is more efficient, production is normally cheaper and easier to expand as compared to oil-based power generation, as well as being more environmentally friendly. However, this depends on assured supplies of nearby gas as it is very expensive to import other than by pipeline.

4.4. Electricity is the other major component of the Ivorian energy sector. The country has traditionally been a significant exporter of electricity to Ghana, Burkina Faso, Togo and Benin. Originally this was based primarily on hydroelectric capacity, but thermal power has played an increasing role since the mid 1990s and now accounts for over half of capacity and two-thirds of actual production. Electricity exports reached roughly US\$100 million in 2002 but have since declined to US\$32 million in 2009, due to expanding domestic demand and lack of investment in maintenance or new capacity. Indeed, in early 2010 the country suffered rolling blackouts for the first time in its history, requiring the government to rent expensive diesel-powered industrial generators. This was one of the main reasons for the drop in estimated GDP growth in 2010 to 3.0 percent, from 3.8 percent the previous year.

POTENTIAL AND PROBLEMS

4.5. All components of the energy sector have potential for growth which could be a major driver of the national economy in the coming years. The crude oil and natural gas sectors are particularly promising in light of the recent discovery and exploitation of oil fields in Ghanaian territorial waters adjacent to those of Côte d'Ivoire, which are much larger than any of the existing Ivorian fields. There have also been recent finds in Sierra Leone and promising new leads in Liberia, on the other side of Côte d'Ivoire. Given the lack of recent extensive exploration in Ivorian waters, especially in deep waters beyond the continental shelf, it seems highly likely that more oil and gas can be found. Furthermore, the presence of exploration companies in the sub-region should help attract them to Côte d'Ivoire, since it reduces the cost of mobilizing expensive ships and personnel. With more gas, the production of thermal electricity could expand relatively easily. Coupled with new hydroelectric options, Côte d'Ivoire should be able to recover its role as a major electricity exporter. The Ministry of Mines and Energy is planning on an increase in the value of such exports to US\$150 million by 2015. The potential for growth in refining may be more limited but not out of the question, given the qualities of SIR's installed capacity and ancillary infrastructure and the likely strength of regional demand.

4.6. However, the oil and gas sub-sectors face serious challenges which require urgent attention. Exploration has been neglected and existing reserves are running out. At current rates of extraction, gas reserves will only last for another five years, and oil reserves for six. Yet deep water exploration, which holds the most promise, can take 5-10 years to begin commercial production, especially for gas fields, since their development requires dedicated additional infrastructure for its processing and transmission to consuming markets. At the same time, the alternative of importing Liquefied Natural Gas (LNG) is very expensive, imposing additional costs on all domestic users, with corresponding implications for competitiveness, including but not limited to that of electricity exports.

4.7. SIR remains viable but vulnerable. Its financial situation has been constrained by the government's reluctance to allow adjustments in petroleum product prices in keeping with rising costs, as well as payment of its arrears by the state. It is also one of those enterprises to convert

early to natural gas, while freeing more Liquefied Petroleum Gas (LPG) for the domestic market, but it became more dependent on gas for its own uses. Its most immediate problem however, is the competition it faces in the regional market. Larger overseas refineries have surplus capacity and they have been cutting their prices, to gain market share for petroleum products in West Africa. In addition, it is likely that investments will be made to upgrade refineries in Ghana and Nigeria, which would both have the advantage of locally-sourced oil.

4.8. The biggest challenges lie in the electricity sub-sector. This sub-sector has suffered from years of neglect. The political situation has discouraged new investors, while existing private operators and the government have lacked resources to maintain the current infrastructure. This is due to a combination of factors, including the high cost of gas resulting from unfavorable contracts with private gas producers, the low electricity tariffs charged to residential consumers and businesses, the obligation to serve the entire country, even though bill collection was not possible in the North, while illegal connections and inefficiency were growing everywhere, including in Abidjan. Technical and commercial losses have reached 24 percent of revenues whereas the industry norm is less than 5 percent. The sub-sector faces growing deficits which are becoming a major burden for the national budget. In 2010, government subsidies were estimated to exceed US\$200 million. Without urgent attention, exports will dry up, and domestic industry will suffer major power shortages, requiring it to produce its own electricity at much higher costs.

MOVING FORWARD

4.9. Côte d'Ivoire should be an attractive target for foreign investors in oil and gas, given the established track record of production, the amount of territory still unexplored, the local market for gas, and a credible local partner in PETROCI, the national oil company and the reliable SIR refinery for crude processing including for third parties . As soon as the political crisis of 2011 has passed, the authorities will need to actively promote new exploration, with a particular focus on the major oil companies who are generally the best placed to develop deep water reserves.²² But they will also need to strengthen the institutional framework to clarify roles and responsibilities, promote growth, ensure that the state captures a fair share of the rents, improve transparency and protect the environment.

4.10. The first steps will be the approval of a revised Hydrocarbons Law, the preparation of a new model for production-sharing contracts, and a performance contract for PETROCI. This work was well-advanced in 2010 but stalled with the political crisis. A key goal would be to stimulate a more proactive involvement on the part of PETROCI, which would have greater clarity in its objectives, and an incentive system more closely linked to their achievement. At the same time, the Ministry of Mines and Energy would acquire stronger regulatory powers. Both institutions would also require capacity building to improve their effectiveness, notably in monitoring the operations of foreign oil companies. For example, it will be important for PETROCI to better understand the costs of oil production in order to better protect its interests and those of the state. Its share of total oil output, which it markets on behalf of the state, is currently determined as a residual, after all costs, often unaudited, are deducted by

²² The French company, Total, signed an agreement for oil exploration in October 2010, just before the crisis erupted.

the international oil companies. Similarly, the Ministry will need better tools to assess and forecast both future hydrocarbon prospects as well as financial results. Foreign oil companies should be obliged to contribute to building the human resource capacity in PETROCI, as they are for the Ghana National Petroleum Corporation. To date, this has not been required in Côte d'Ivoire.

4.11. Particular attention must be paid to the revenue-sharing formula to be adopted. As relatively few jobs are created directly by the oil and gas industry, its main contribution comes through the provision of government revenues. Yet the risks to private investors are not negligible, and the country urgently needs their capital and technical expertise. The oil companies also have much better information and expertise. The government has already learned the cost of poorly designed contracts in the gas sector, where the state agreed to buy gas at an unprotected price, linked to the international price of oil. At the same time, it had guaranteed a supply of gas at different prices to private operators of thermal stations in order to promote their investment. With the rapid rise in the price of oil, the state found itself in the position of having to either increase electricity tariffs or subsidize electricity production. Thus a natural resource which should be generating rents has instead required subsidies. The government will need to bring in expert advice, to ensure that new oil and gas contracts are properly structured to equitably share the risks and rewards between the parties.

4.12. High public revenues must be matched by effective transparency if society as a whole is to benefit. Unfortunately, the examples of misuse of resource rents are legendary and have led to concern for the so-called “resource curse”. Many developed countries have drawn huge benefits from rich resources (e.g. Norway, Canada), as have some developing countries (notably Chile and Botswana). However, where institutions and governance are weak, the record has more often been negative. Paul Collier has concluded that “the resource curse is confined to countries with weak governance.²³ In light of Côte d'Ivoire’s record over the last ten years, one can legitimately ask what the prospects are for effective use of natural resource rents. It is therefore essential that the initial steps taken to adhere to the Extractive Industry Transparency Initiative (EITI) be pursued so that all stakeholders can be assured that the taxes, dividends and other payments by the private sector, are properly accounted for in the national budget. In addition, however, accountability in the execution of that budget will have to be strengthened through such measures as on-going quarterly execution reports, timely and published audits by the Chamber of Accounts, and effective Parliamentary oversight.

4.13. The country will also need to seek alternative sources of gas supply. Given the dependence of the industrial and electricity sectors on natural gas, the country must prepare for the possibility that new local gas reserves may not materialize in time, to replace existing supplies. Fortunately Ghana has now become a gas producer and there is the prospect of extending the West Africa Gas Pipeline from Ghana. Since Ghana has long-term gas purchase contracts with Nigeria, it actually has surplus gas of its own for sale. Access to the WAGP would open up the possibility of buying gas from Nigeria or Ghana, giving Côte d'Ivoire more bargaining power vis-à-vis these two suppliers but also with regard to its own private gas producers.

²³ Paul Collier, *The Plundered Planet*, p. 46.

4.14. An audit and subsequent strategy already lay out the necessary steps for SIR. The company will need to optimize its production capacity to match local and regional demand, satisfy increasingly stringent environmental standards, economize on energy consumption and keep improving productivity. It will need to increase its “hydrocracking” capacity in order to maximize the production of gasoline, diesel and kerosene which are in high demand, as opposed to heavy fuels. Desulfurization equipment will be required if it is to meet new international norms for sulfur content. This will be essential to protect its exports to the USA and will soon be important for the sub-regional market as well. Other investments will be needed in its subsidiary, the Multinational Bitumen Company, in order to expand asphalt output and produce low sulfur bunker fuels, for maritime shipping needs.

4.15. The necessary investments have been estimated at US\$1.0 billion over ten years. Some of this can be financed internally, with the help of further increases in efficiency, including pursuing automation and corresponding reductions in staffing, through retirements. Clearing the remaining arrears owed to SIR by the government would also help. However, it may also be necessary to increase the tax on petroleum products. The pricing formula for petroleum products has traditionally included a k coefficient to generate revenues for investment in the refinery, and this has been steadily reduced over the last 15 years. It may be time for a temporary increase to permit the necessary modernization of SIR. However, the state will also have to ensure that the pricing mechanism is honored so that higher costs can be smoothly passed on to better informed consumers and businesses. This will require a regular education and communication campaign to overcome resistance, which is otherwise politically charged.

4.16. A 2009 audit outlined the key elements of a strategy to rescue the electricity sub-sector. Clearly, substantial investment is urgently needed by both the government and private sector partners to fix the existing infrastructure and expand capacity. Some short-term remedies are available, such as the use of steam from existing thermal plants applying combined cycle technology to generate additional power without increasing the demand for natural gas. Investors including IFC were prepared to invest in one such operation in 2010 but were hesitating due to the weak overall financial situation of the sub-sector, combined with the unstable political context. Recent institutional rationalization should also help. The former electricity distribution company, EECI, has finally been dissolved and its assets formally transferred to the state's asset-holding company, SOGEPE. This should enable the latter to raise the required financing, but it will need to launch an aggressive campaign. However, the financial situation of the sector continues to pose problems.

4.17. The institutional and regulatory framework needs further modification to share risks and promote efficiency. The current structure was designed to attract private investors by minimizing the risks they faced, and in that it has succeeded. The state guarantees a stable supply of gas for private thermal electricity producers by buying all gas from the private gas operators at attractive prices. It then purchases all electricity for resale to the private distribution company, CIE (Compagnie Ivoirienne d'Electricité). However, this has forced the state to bear most risks, while removing incentives for the private sector to improve productivity and reduce costs. Unfortunately the crisis of 2011 has created new and extraordinary risks for the private sector which will make it difficult for the state to argue for a renegotiation of the regulatory framework in the short term, but this can be embedded in future contracts.

4.18. There is also a problem of lack of competition and transparency within the private sector. There are a very limited number of private operators, and they are typically vertically integrated in two or more stages of the value chain (gas production, electricity generation, electricity distribution) including the management of financial flows. This has constrained competition while making it difficult for the state to get a clear picture of costs. While little can be done in the short term about the composition of private investors, an effort should be made to attract different partners for new investments in natural gas fields and thermal power plants. Furthermore, the national regulatory authority (ANARE, Autorité Nationale de Régulation du Secteur de l'Électricité) which has existed on paper since 1994 must finally be made operational, independent and powerful, but this will require significant capacity-building along with a more aggressive take-over and execution of its regulatory mission, as the national regulator.

4.19. Once the political crisis has been resolved, the government will need to reverse the financial hemorrhaging in the sector. This will be essential for the health of the national budget as well as to attract private investors. Investment and different private sector incentives will help. But the state will have to renegotiate the price at which it purchases natural gas from the gas operators, to delink it from the rising price of oil, or at least, to equitably bench-mark it against wild upwards or downwards fluctuations. The state will also have to come to grips with the necessity of increasing electricity tariffs for the sake of the sector's survival. A new price-setting mechanism will need to be established and implemented by ANARE. Here too, an active and on-going multimedia educational campaign will be needed, to convince consumers and businesses that short-term increases are necessary, while longer-term mitigating measures are being implemented.

4.20. In the medium to long-term, renewable energy sources should be developed. There is still ample potential for hydroelectricity. In fact, some ten sites exist which together have a generating potential (1300 MW) slightly greater than the entire hydro and thermal capacity in the country today (1210 MW). The top priority is the Soubré site (290 MW). Solar power should also be developed beyond the few pilot projects currently in operation, especially off grid for rural areas and as energy complement in urban areas. The development of biomass, including cashew nut processing, could also contribute to rural electrification, through the use of the shells. Several sites for wind power have been identified which would warrant pilot projects, and could eventually be included in a realistic vision and long term "Energy Master Plan" and strategy that the sector will need.

4.21. Overall, the Ivoirian oil gas and electricity sector still offers huge unrealized potential, in resource development, demand-side management as well domestic or regional growth. A well thought-out and structured, post-crisis, "Energy Master Plan" would help the country move forward with a clear vision of its economic future, combined with a strong appeal for private sector investments.

5. TRANSPORT AND TRADE FACILITATION

5.1. Côte d'Ivoire has developed arguably the best overall transport system in West Africa, even though it has suffered from neglect in the last ten years. The port of Abidjan is the most important one after Lagos, and its privately-managed container terminal is considered to be one of the most efficient in all of sub-Saharan Africa. The secondary port of San Pedro also plays a significant role, notably in the cocoa and wood products trade. The railway to Ouagadougou provides the lowest cost alternative for transit trade to Burkina Faso, with a multi-modal option to serve Mali. It was one of the first railways in Africa to be managed under a concession agreement, and it continued to function for all but a few months of the political crisis of 2000-10. This railway remains the busiest and most productive in West Africa. The airport of Abidjan has also been turned over to private management, which has invested in important renovations. This should have helped preserve its traditional role as a hub for air traffic in West Africa, were it not for the political instability. Finally, an impressive road system had been built which provided access by paved road to all parts of the country, supported by secondary and rural roads which facilitated the evacuation of agricultural products and the provision of social services. The road system represented almost half of all the roads in the UEMOA countries.

5.2. The extended political crisis has taken a heavy toll on this system. Transit trade fell from 1.4 million tons in 2002 to some 200,000 tons in 2003 and did not recover to its previous level until 2009. The revenues of the rail, port and trucking companies were badly hurt, undermining new private investment. Maintenance of the road system has been neglected, and public investment non-existent. Governance has deteriorated badly, leading to the multiplication of road blocks and the infamous “rackets”. Land-locked countries have increased their reliance on alternative transit routes, and competing coastal countries have gradually improved their infrastructure and serves to consolidate the gains made at the expense of Côte d'Ivoire.

5.3. Reforms in trade facilitation can offer low-cost, short-term gains while financing is identified for long-term investments. Physical infrastructure is high on the government's list of investment priorities but public resources are very limited and there are many competing demands. Transport regulations, procedures, and services – the soft side of infrastructure – are often overlooked by governments and donors, yet these typically offer the most cost-effective interventions to improve competitiveness. There are many such opportunities in Côte d'Ivoire. Immediate attention to these issues may be the best way for Côte d'Ivoire to regain some of the lost transit trade. It will also improve the competitiveness of exports, increase the farmgate price for producers, and reduce the costs of imports for consumers.

5.4. The cost of transport is very high. Shipping a 20-foot container from Singapore to Abidjan costs between €700 and €1000, while the cost of unloading and delivering the container, still within Abidjan, costs another 500 to 800 Euros. Transit trade to Ouagadougou can cost at least another 1500 Euros. Even though container unloading is more efficient than in Lomé (or any other port in West Africa), total port costs in Abidjan for transit trade are 38 percent higher than in Lomé. The port of Abidjan can unload an average of 23 containers per hour, yet it still takes from 6 to 12 days to clear the port, compared to only 1-3 days in Dakar. The total cost of transit trade from Abidjan to Burkina Faso has been estimated to be 16 percent higher than from Lomé and 40 percent higher than goods imported through Tema, Ghana.

THE PORT OF ABIDJAN AND CUSTOMS

5.5. Productivity has improved markedly but the benefits have not materialized. Private management of the container terminal and the handling of bulk merchandise have led to significant investments and good performance. Yet delays and costs remain high. The average time spent in the port by imported containers (10 days) has not changed between 2004 and 2009, while the time has actually increased for containers destined for export or transshipment. This is particularly costly because the port charges penalties after the fifth day.

5.6. Lack of competition among forwarding agents appears to explain the high cost of moving goods out of the port. There are eleven dominant forwarding agents, referred to as “the multinationals”, who are members of the exclusive Maritime Federation of Côte d’Ivoire (FEDERMAR). This organization sets high, fixed prices which are officially sanctioned by decree. There are numerous smaller forwarding agents but they have great difficulty capturing business. Greater competition should be encouraged, including through assistance for the certification of small companies, equal treatment, and the liberalization of prices.²⁴

5.7. Bigger obstacles exist in customs. Customs officials are omnipresent in warehouses, at the scanner, and even on board ships, slowing down clearances in order to earn overtime and unofficial payments. The share of import declarations accepted in the green circuit has steadily decreased from 60 percent in 2004 to 30 percent in 2009, leading to an increased number of physical inspections. For the rest, verification only begins when a paper copy of the declaration form and accompanying documents are delivered. The computerized system SYDAM World has been introduced but it is underused, and parallel manual systems endure. All imported containers pay for the scanning service, even though only 17 percent are actually scanned.

5.8. There are also an excessive number of required documents. The Advance Import Declaration (*Déclaration anticipée d’importation*, DAI) duplicates the Import Information Form (*Fiche de Renseignement à l’Importation*, FRI). The Cargo Monitoring Invoice (*Bordereau de Suivi de Cargaison*, BSC), created by the Shippers’ Council (*Office Ivoirien des Chargeurs*, OIC), seems especially unnecessary. It is justified by the need for statistics, preparation for duty clearance prior to arrival, and to prevent fraud. However, the statistics published by the OIC are not up-to-date and can already be obtained from the DAI, which also serves to prepare for customs clearance. The fight against fraud is the responsibility of Customs.

5.9. This analysis leads to the following recommendations:

- Eliminate the FRI and BSC forms;
- Fully exploit the SYDAM system, and create an electronic pre-declaration process;
- Recognize the legal validity of electronic declaration;
- Improve the criteria for selectivity of controls and integrate them in SYDAM;
- Redeploy agents to focus on ex post control of customs clearance, and reinforce cooperation with the tax administration;
- Establish a true single window for all services operating at the port;
- Reestablish the competitiveness committee for Ivoirian ports.

²⁴ One of the biggest companies enjoys a credit on custom duties payable of CFAF 14 billion, while the small companies are typically limited to CFAF 25 million.

OBSTACLES TO TRANSIT TRADE

5.10. Road blocks and bribes have become out of control. Between Abidjan and the frontier with Burkina Faso and Mali, 38 control points were counted in 2008, which amounts to one every 18 km.²⁵ The total charges were estimated at CFAF 150-200,000 by one study, but others have put them as high as CFAF 1million. This compares to only 8 control points in Togo, with a cost of CFAF 40,000. Numerous agencies are involved in addition to the former rebels (police, gendarme, security, customs, water and forest service, health, and local municipalities). The cost of this “racket” is estimated at 10 percent of total transport costs by one report, or a total of CFAF 150-300 billion by the Chamber of Commerce. Furthermore, these controls typically do not stop overloading or unsafe trucks.

5.11. Additional charges are applied for escort services to prevent offloading of goods in transit. Since 2001, the OIC has been responsible for organizing convoys of trucks to pass through to Burkina Faso or Mali, at a charge of CFAF 250,000 per truck, plus CFAF 150,000 per convoy. This escort service is not systematic and trucks often leave on their own. This system has been extended to national traffic, at a total cost of CFAF 120-200,000 depending on the products, and even if a truck is empty. This is ostensibly to provide security from racketeering, but in fact it has become simply another tax.

5.12. Further obstacles await at border crossings. The TRIE regulations long promoted by WAEMU/ECOWAS are not applied. The guarantee issued by the Chamber of Commerce is not recognized and instead shippers must provide a guarantee equivalent to the total value of the shipment. This has effectively discouraged all but the biggest trucking companies. OIC has the responsibility to certify that goods actually leave the country. And, with a few exceptions, customs does not clear at land borders goods imported from outside of ECOWAS, in order to prevent competition with the port of Abidjan.

5.13. Ivoirian truckers have virtually abandoned the transit trade due in part to onerous regulations. In addition to the above problems, transit trade is divided two-thirds to trucks from the importing country, and one-third to the transit country (Côte d'Ivoire), and a queuing system is used to allocate shipments on a first-come first-serve basis. This system protects a lot of old, inefficient trucks and reduces the number of rotations to 1-2 per month, undermining profitability. There is also relatively little return traffic from Burkina Faso or Mali and what is available tends to go to their national companies.

5.14. A second set of recommendations emerges for transit trade:

- Eliminate all road blocks in favor of a system of tracking by GPS, with one control at the point of departure and one at the border crossing;
- Replace the TRIE process with the Unique Customs Declaration form;
- End OIC charges and organize escorts only at the request of shippers;
- Interconnect the computer systems of WAEMU customs services, followed later by those of ECOWAS;
- Accelerate the establishment of joint border posts;

²⁵ M. Touré and E. Diarra, “L’étude du racket sur les routes en Côte d’Ivoire », World Bank. 2008.

- Authorize importation of non-ECOWAS goods through land borders;
- Return to customs the responsibilities assigned to the OIC;
- Eliminate the queuing and traffic allocation systems.

ROAD MAINTENANCE

5.15. The road system has suffered badly from years of neglect and the impact of truck overloading. Main roads were constructed for a 15-year life span which has long been surpassed. From 2000 to 2006 there was no maintenance, with the exception of some emergency repairs. Between 2007 and 2009, spending on road maintenance averaged only CFAF 13 billion. By comparison, Ghana spent almost four times as much for a road network that is one-third smaller. As a result, a major program of road rehabilitation is needed as well as a regular and robust program of road maintenance.

5.16. The Road Maintenance Fund (*Fonds d'Entretien Routier, FER*) needs more resources on a more reliable basis. Part of the problem is the low road use tax on gasoline (CFAF 16/liter) which is less than half the rate charged in much poorer Togo. Second, no resources have been generated from toll roads, unlike in Togo. Third, what resources are collected from the gasoline tax transit through the budget rather than being paid directly into the FER, resulting in resource availability significantly below projections, and delays in receiving those funds which are transferred.

5.17. An urgent program of road improvement would require the following:

- At least doubling the road tax on gasoline;
- Expanding the use of tolls;
- Adding weigh stations to reduce overloading and generate revenues from fines;
- Transferring these resources directly into the FER budget;
- Mobilizing resources from the national budget and donors in the order of CFAF 200 billion for a three-year program of road rehabilitation.

TRUCKING SERVICES

5.18. The stock of Ivoirian trucks is old and costly to operate. It is estimated that 85 percent of trucks are more than 10 years old. Investment in new trucks has been discouraged by low profitability, and the stock is not suited to the expanding container trade. The average annual distance travelled is only 60,000 km, as compared to 180,000 km in Europe. This is due to the many obstacles and delays cited in the context of transit trade, which also apply to national transport.

5.19. Transport policy is liberal but the regulatory framework requires simplification. The number of required documents and controlling actors is excessive. Progress has been made with the creation of the Single Window for Automobiles, but the number of steps could be reduced from six to three (matriculation, customs and safety inspection), and it needs to become a true single window where all services are performed on the spot. The paperwork for transporters and drivers is also excessive. The OIC, freight offices, and many truckers unions are all involved and claiming their commissions. Taxes add up to 45-55 percent of turnover for

modern sector companies, including import duties, ownership fees, utilization charges and gasoline taxes. While the latter may have to rise to help cover road maintenance, this should be offset by reductions in some of the others.

5.20. One regulation which needs to be tightened is that relating to overloading. In fact, the WAEMU member states and Ghana have agreed to limit axle loads to 11.5 tons and to put in place rigorous controls through the installation of weighbridges and the imposition of penalties. The deadline for implementation was June 30, 2010. This reform is long overdue as it will reduce road damage and generate some additional revenues for maintenance. However, it will make it harder for truckers to cover their costs.

5.21. It is time for a new, modern approach to trucking services. Up until now, old trucks have stood in line waiting for their turn, limiting the number of trips but avoiding the need to compete. Drivers have been underpaid or not paid at all, left to generate their own business one way or another. Both truck owner and driver have had an incentive to overload to make ends meet, unpacking containers and piling the contents of two or even three on a truck. This has in turn shifted costs to society, through damaged roads and accidents. But new axle load restrictions may finally put an end to this model.

5.22. Instead, a competitive model is needed which allows shippers to choose their truckers, with the most competitive truckers able to generate higher revenues through increased turnover and perhaps even higher fees for improved service. In turn, this will enable investment in new trucks, and greater containerization. And containerization should facilitate passage through the port, remove the need for escorts and reduce the justification for road blocks, through the use of bonding and GPS tracking. To support this new approach, a freight exchange could be established where shippers submit their requests and transporters compete on the basis of cost and service, and without paying commissions to freight offices.

5.23. Another set of recommendations emerges from this analysis for trucking services:

- eliminate road blocks and controls;
- simplify and reorganize the regulatory framework;
- reduce the levies imposed on truckers by unions, OIC and freight offices;
- liberalize road transport by setting up a freight market exchange;
- enforce the axle load limit of 11.5 tons to extend the life of trucks and roads.

RAIL SERVICE

5.24. The concession agreement with SITARAIL has helped build and maintain traffic, but the infrastructure has deteriorated. Traffic grew from 485,000 tons in 1996 to over 1 million tons in 2001, fell drastically in 2003 when the railway was forced to suspend operations for much of the year, but then rebounded to an average of 870,000 tons in 2007-9. The rail also carries some 500,000 passengers per year. This is impressive given the de facto division of the country. It was achieved by an improvement in service, competitive rates, and considerable investment in rolling stock. However, there has been little investment in the rail line and there are 77 locations with a total length of 98 km where the train must slow down. The cost of

rehabilitation has been estimated at CFAF 64 billion (US\$128 m). Even more is required for the renewal of rolling stock; the average age of the locomotives is 35 years.

5.25. Part of the problem lies with the public asset holding companies created in both Côte d'Ivoire and Burkina Faso. These companies are responsible for track rehabilitation and upgrade and receive each 2 percent of gross revenues from the concession to service the debt associated with their obligations. This system has not worked as the CFAF 11 billion (US\$22m) paid out to them from 1995 to 2005 has been diverted to pay unwarranted personnel costs in these companies and various expenses in both Ministries of Transport. Future concession payments should be capped at CFAF 100 million (US\$200,000) per year with the balance going to a secure account managed by SITARAIL to finance track rehabilitation. This modification should be introduced when the concession agreement is renewed in 2011.

5.26. SITARAIL is virtually bankrupt. The lost income due to the political crisis of 2002-9 has been estimated at CFAF 15.8 billion (US\$31.6m), while the compensation due to SITARAIL for passenger traffic (CFAF 19 billion or US\$38m) has not been paid by the state. As a result, the company is unable to repay its debts to the two states, nor is it in a position to finance new investments. It is imperative that SITARAIL's liabilities be cleared in order to reestablish a sound financial basis, and that the agreed investment plan be launched urgently, with contributions from the two states and the rail company.²⁶

5.27. The investment plan must also include reforms to facilitate trade. A major problem is the slow turnaround time for wagons – 15 days or more – which leads to shortages of capacity. Slowdowns due to poor track conditions are only a small part of the problem. Loading and unloading times are too long, and the rail service is hampered by delays at the border and between the north and the south of Côte d'Ivoire. The railway does not escape the requirement to pay fees to the armed forces in both the north and the south. As a result, wagons spend more time standing still than moving, and are often used as storage facilities. Existing investment plans fail to address trade facilitation.

5.28. The key recommendations for the rail service are as follows:

- Clear the financial losses of SITARAIL due to the crisis;
- Improve the management of wagons to increase the time of rotation;
- Prepare a trade facilitation strategy;
- Deposit most concession payments in a dedicated account to be managed by SITARAIL for track rehabilitation;
- Launch a program of new investment in the rail line and rolling stock;
- Develop multi-modal transport (ship-train-truck) through greater use of containers.

²⁶ The port is also interested in promoting the railway, and launched a bond issue in 2010 to help finance new rolling stock.

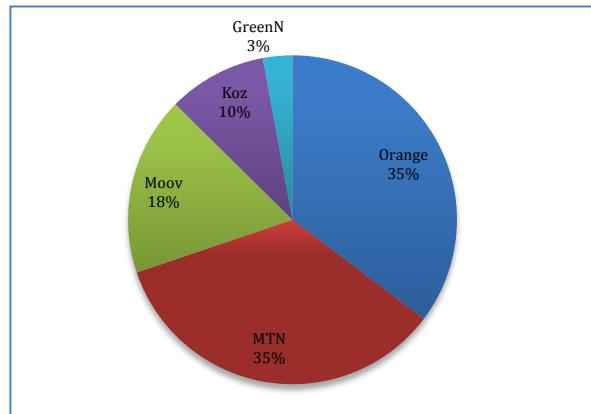
6. TELECOMMUNICATIONS: MAKING UP FOR LOST TIME

6.1. The ICT sector has been a bright spot for the Ivorian economy. Telecom sector revenues have grown significantly, from some 3.5 percent of GDP in 2000 to 6.3 percent in 2009. This is less than in Senegal (9.4 percent) but higher than Nigeria (5.1 percent) or Ghana (4.8 percent). Telecom firms are among the largest companies in the economy: Orange Côte d'Ivoire ranks fifth, MTN Côte d'Ivoire eighth and CI-Telecom twelfth in terms of turnover.²⁷ Despite the political crisis, investment in the telecommunications sector has grown. The latest figures (ATCI, 2007) indicate sector capital expenditure of over US\$350 million. Data from the Ivorian Investment Promotion Center (CEPICI) for 2009 indicate that the telecommunications sector accounted for the largest portion of FDI at 43 percent.²⁸ CEPICI reports over US\$160 million of FDI in the telecommunications sector, reflecting the impact of new mobile operator network deployments. However, the sector is still far from reaching its full potential for increasing economic growth and improving Côte d'Ivoire's competitiveness. Significant reforms are needed to sustain long-term growth.

6.2. Côte d'Ivoire is falling behind competing countries in the region, in spite of the competition in the sector with five mobile, two fixed and several Internet Service Providers. Different market segments tend to be dominated by the subsidiaries of the two main groups operating in the country. Competition is not working effectively as prices are relatively high and quality, particularly for Internet services, is low.

Figure 6.1: Market share of mobile operators

6.3. The country has made notable progress in extending voice communications access through wireless technology with a relatively high level of coverage and growing subscription take-up. The mobile market is the most competitive ICT segment with five mobile operators at the end of 2010. Nonetheless, the two original operators accounted for some 70 percent of the market (see Figure 6.1) and despite the entry of new operators over the last few years, market concentration has actually increased. License conditions do not include coverage obligations. The two largest operators cover a large part of the population while the three others cover mainly urban areas. Despite five mobile operators, prices remain high and usage lower than in other similar countries in the sub-region.



6.4. Côte d'Ivoire Telecom (CIT) is the incumbent operator. It was partly privatized in 1997 when France Telecom purchased 51 percent of the shares.²⁹ France Telecom (Orange), along with its partner CIT, is a major player in the Ivorian telecom sector and active across all ICT market segments through fixed line operations, mobile communications and Internet

²⁷ "Top 500 Companies in Africa." *The Africa Report*, February. 2011.

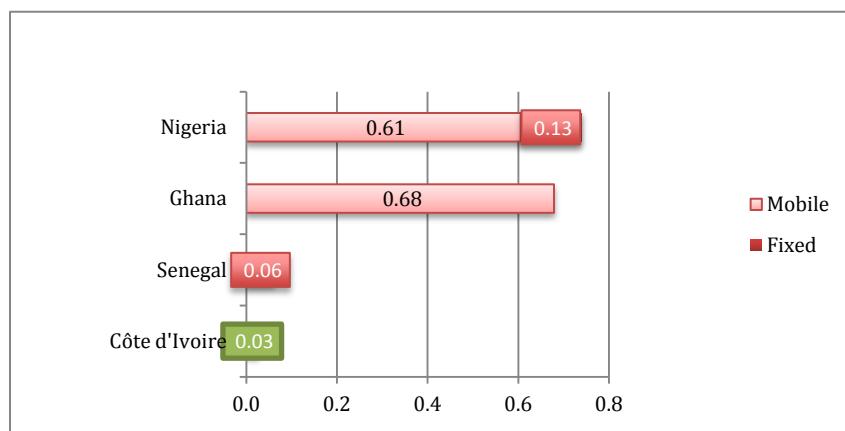
²⁸ U.S. Department of State. 2010. *2010 Investment Climate Statement - Côte d'Ivoire*.

²⁹ The shareholding in CIT has since been reduced to 45.9% whereas France Telecom's ownership of its Orange mobile subsidiary in the Côte d'Ivoire is 85%.

provision. South African-owned MTN has also emerged as a significant force across various market segments through its acquisition of mobile operator Loteny in 2005 and fixed operator Arobase and ISP Afnet in 2008.

6.5. Côte d'Ivoire has yet to deploy mobile broadband networks. High-speed mobile networks can generate additional competition in the broadband market provided that licenses are also awarded to new entrants who have the resources to quickly deploy a nationwide network. The quality and pricing of broadband services needs to be improved and Côte d'Ivoire needs to ensure it is not left behind in undersea fiber optic connectivity and that there is cost-based, open wholesale access to fiber networks both international and national for operators and ISPs. Fixed broadband is extremely low at just 0.2 subscriptions per 100 people. Nevertheless in terms of benchmark countries, Côte d'Ivoire ranks second behind Senegal. Around 15 percent of main lines are used for DSL in the Côte d'Ivoire, a lower ratio than Senegal. This suggests that there is scope for higher fixed broadband take-up although factors such as distance from the exchange and investment in DSL technology will affect this capability.

**Figure 6.2: Wireless broadband subscriptions
(per 100 people)**

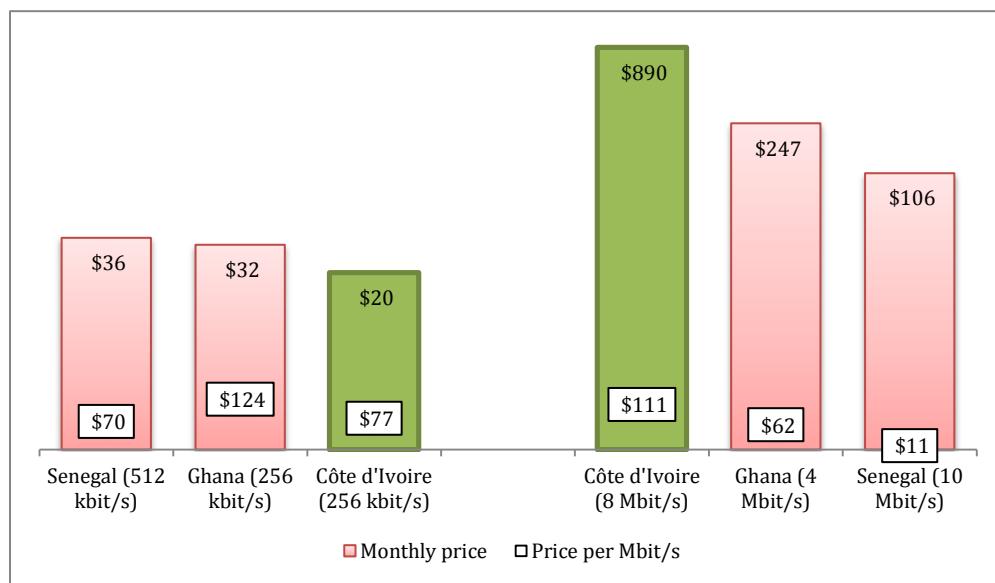


6.6. Broadband performance is impacted by the availability of international bandwidth. Sufficient overseas Internet capacity is critical for ensuring quality. All comparator countries in the sub-region are connected to the SAT 3 fiber optic submarine cable deployed in 2002 and controlled by the incumbent operators in each country. In addition, Senegal has capacity on the Atlantis cable running from Brazil to Portugal. New cables have been deployed or are under consideration. The Main One and Glo-1 cables have been deployed in Ghana and Nigeria (Côte d'Ivoire and Senegal are also supposed to be landing sites for phase two of the Main One cable). As a result, Côte d'Ivoire is connected only to SAT-3 whereas Senegal is connected to two cables and Ghana and Nigeria are connected to three. Two additional cables are to be deployed with landings in Côte d'Ivoire, the Africa Coast to Europe (ACE) and West Africa Cable System (WACS). The signatories are Orange and MTN. Therefore although cable access will increase Côte d'Ivoire's international bandwidth, connectivity will be controlled by the two dominant companies with possible negative repercussions for pricing in absence of appropriate wholesale regulation. In terms of pricing, Côte d'Ivoire has competitive entry-level packages for broadband

but they are generally not good value for money. Despite competition, mobile prices are high, constraining usage. Restrictive legislation inhibits the introduction of bundled services.

6.7. Individual usage of ICT by the population is low, hindered by low ownership of personal computers, lack of mobile broadband access and limited availability of computers and the Internet in schools and public facilities. The availability of web sites and use of email in Ivoirian enterprises is below the Sub-Saharan Africa average, affecting business usage. This shortcoming is highlighted by WEF where the perception about the extent of business Internet use is low with Côte d'Ivoire ranking only 125 out of 138 economies in 2010-2011.

Figure 6.3: Fixed broadband prices, May 2010, US\$



Source: Adapted from operators.

6.8. The main bottleneck the ICT sector faces is the need to adopt updated legislation. A related issue is the need for an electronic transaction law as well as privacy and security regulations. The telecommunications law dates from 1995 and is out of date. Although a new law is being drafted, as well as laws relating to electronic transactions—which are to be harmonized with ECOWAS guidelines—this is progressing slowly. Likewise there is a need for a new sector plan as the previous one dates from the year 2000. The quality of competition can be enhanced through the passage of a new telecommunications law that allows for unrestricted market entry and unified licenses. This will lower costs for existing and new operators through economies of scale and streamlining of administrative approvals. Laws and regulations should also adapt to convergence, ending artificial restrictions across telecommunications, broadcasting and information technology, in order to usher in new services and accelerate the evolution of next generation networks. A formal ICT policy and plan would enshrine the country's goals and strategies for the sector and instill greater confidence.

6.9. The country faces challenges in accelerating the adoption of ICTs by small business. According to the World Bank Enterprise Survey, just over 10 percent of firms were using their own website in 2009. This is heavily skewed towards large, export-oriented firms with over half

of large firms and two thirds of export firms having their own web site. Use of Internet among small, medium and micro enterprises is limited and the national average is below the regional level. If the country can successfully reform the telecommunication sector, increasing competition, and lowering prices, this should generate higher ICT take-up among micro, small and medium enterprises (MSMEs). Cheaper prices alone may be insufficient to generate demand among MSMEs and therefore the government may need to devote resources to raising awareness and training. At the same time, the government can stimulate demand for ICTs by building on its initial success in e-government and introducing transaction oriented systems and encouraging enterprises to interact with it electronically. This requires the passage of electronic transaction and related online security and privacy legislation.

6.10. The growth of mobile phones and the ability to use them for financial transactions provides a viable alternative for those without bank accounts. Access to finance is cited as the biggest obstacle to business by enterprises in Côte d'Ivoire. This lack of credit opportunities is most prevalent among the poor and SMEs. Only around ten percent of the population has a conventional bank account. Microfinance institutions attempt to take up some of the slack but there are less than a million accounts and the industry is in disarray. Both Orange and MTN have launched mobile payments systems with over half a million subscribers by June 2010.

6.11. Small farmers lack modern technology and the most prevalent ICT device is a radio, owned by an estimated 90 percent of farmers. ICT could provide them with improved market and pricing information, farming techniques and ways of diversifying into other crops. Unlike a number of developing countries where SMS-based rural market information for farmers is widespread, this has been slow to develop in Côte d'Ivoire. Mobile phone coverage has been inadequate in rural areas due to the political situation. However coverage has improved over the last few years with the entry of new mobile operators. Orange reported that it covered 82 percent of the country with a GSM/GPRS signal including over half of villages.³⁰ The wider availability of mobile phones in rural areas offers a platform for applications such as SMS-based market information and mobile money.

6.12. More attention is needed to support the development of a local ICT industry and to develop ICT skills. The country has a base of IT firms that have achieved regional recognition and have been doing well with software exports. Resolution of the political crisis may help spark the return of emigrants that have acquired IT skills abroad. Given its location, Côte d'Ivoire is well placed to serve as a sub-regional technological hub. It is headquarters for a number of regional and sub-regional organizations including the Regional African Satellite Communications Organization (RASCOM) and the regional stock exchange (*Bourse régionale des valeurs Mobilières*, BRVM). Furthermore Côte d'Ivoire has fiber optic connectivity to international destinations and provides undersea fiber optic connections for several bordering land-locked nations.

6.13. There have been several initiatives by the government, development partners and the private sector to establish IT parks and research and development facilities. In 2006, the government created the Information Technology and Biotechnology Village (*Village des Technologies de l'Information et de la Biotechnologie*, VITIB) in the town of Grand Bassam, 40

³⁰ Orange. "Couverture nationale" http://www.orange.ci/index.php?rub=couv_nationale

kilometers from Abidjan. It is also known as the “Mahatma Gandhi IT Park”, as a result of a US\$25 million Indian government loan to develop the facility. As a free trade zone, the 8 million square meters offer a number of advantages to firms locating there, such as significant tax benefits and one-stop facilitation for processing administrative documents, company incorporation, etc. In November 2010, France Telecom announced that it would open an Orange Lab (“Technocentre”) in Abidjan to develop products and services for the regional market and leverage Côte d’Ivoire’s experience with the Orange Money service.

6.14. An emergent ICT sector will require skilled staff and digital literacy among the overall population. In that regard, the government needs to devote resources to raising the overall educational level of the population and providing them with greater exposure to ICTs through school computerization and public Internet facilities. Côte d’Ivoire has demonstrated success with niche high-tech markets and has considerable potential. In order to fulfill that potential, there needs to be better coordination between post-secondary ICT training facilities and the private sector to ensure that curriculum and research match industry needs so that graduates are quickly employable.

6.15. In addition to the VITIB IT park, the government may need to offer additional incentives to stimulate the industry. If Côte d’Ivoire wants to emerge as a base for IT-enabled service (ITES) exports, then it will need to develop an ambitious skills program tailored to the types of jobs in this industry. It will also need to support an ITES industry association; develop the capacity of local SMEs to participate in the industry including entrepreneurship development, incubation and facilitation of venture capital; ensure that appropriate infrastructure is available in emerging ITES areas such as animation, mobile apps and 3D; and generally promote the industry.

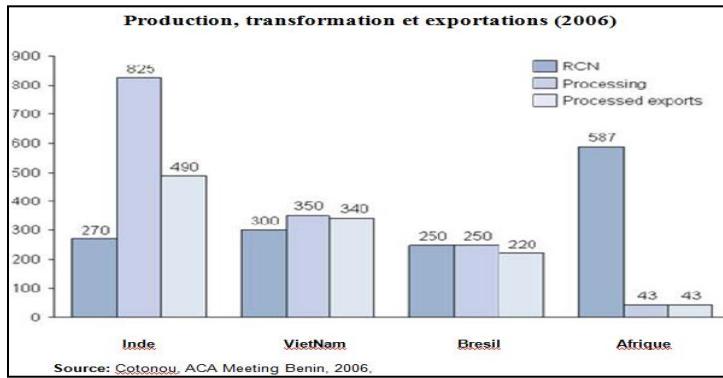
6.16. Côte d’Ivoire has promising opportunities, especially now that the political situation has stabilized. Although the proposed recommendations do require funding, it is critical that there be a strong commitment from the government towards ICT, followed-up by concrete policies and programs to foster a sustainable, forward thinking ICT sector. This can inspire the necessary confidence to attract partners to assist with the financial requirements particularly for developing the ITES export sector. This includes Public-Private Partnerships and assistance from development partners. The country’s historical role as a West African leader; its strategic geographic location; and the resolution of the political crisis provide a platform for economic growth and renewal. ICTs can play an important part in the post-crisis environment by helping to transform the Ivorian economy so that it can exploit the opportunities of the globalized world of the 21st century.

PART II: VALUE CHAINS

7. CASHEW: GROWTH AND THE PROCESSING CHALLENGE

7.1. **Côte d'Ivoire has become the world's largest exporter of raw cashew nuts**, with sales surpassing 370,000 tons in 2010. With the recent increase in international prices, the value of cashew exports is estimated at over US\$300 million, which makes them the third most important commodity export after cocoa and rubber, and ahead of coffee. Cashew is even more critical when viewed in a regional and poverty reduction context. It is grown primarily in the poorer, northern half of the country, where cashew has become the most important source of rural cash income. Gross farmer receipts are estimated at US\$100 million, ahead of those of cotton (US\$80 million), the traditional cash crop of the north. A comparison in terms of net farmer receipts would be even more favorable, since cotton involves much higher input costs. At least 250,000 farmers (supporting 1.5 million individuals) are involved, the vast majority of whom are smallholders with only 2-3 hectares. Cashew output has been growing by over 20 percent per annum and future prospects are very positive. Many of the trees are still young and have not yet reached their peak production, and there is much room for improved yields and value-added. World demand has been growing by about 5 percent p.a. and supply has been keeping pace (growth of 5.7 percent since 2000). World prices have been volatile over the last ten years, with no clear trend, although prices were very high in 2011.

Figure 7.1: Processing and Export of Raw Cashew Nuts (RCN) ('000s tons)



raw cashew nuts go to India, and another 39 percent go to Vietnam. While some competition between buyers may exist, there are also suspicions of anti-competitive practices, and this dependence on two countries could be a problem. India has a declared policy of eventually substituting all imports of raw cashew nuts with expanded local production, though some observers doubt that this is feasible.

7.3. **The growth of the Ivoirian cashew sector is all the more remarkable since it has taken place during a period of socio-political crisis** and in a part of the country which was essentially cut off from support services, and impeded (but not blocked) in its access to the main port. Apart from a few modern orchards, the national orchard consists of traditional, low density plantations established with low productivity planting material. Yields are very low: an average

7.2. **Less than 3 percent of the Ivoirian cashew harvest is processed locally and it is the government's policy to raise this share substantially.** Côte d'Ivoire processes less than 10,000 tons of raw nuts into kernels per year. The world market for raw cashew nuts is not very competitive, as India currently processes the large majority of the world's exports, including most of those from Africa (see Figure 7.1). Vietnam has also become a significant processor. Thus 60 percent of Ivorian

of 300 kg/ha compared to 1,000 kg/ha in India and Guinea Bissau, and up to 2,000 kg/ha in Vietnam.³¹ Quality is also low. Treatment for disease and insects is rare, harvesting practices leave much to be desired, and drying and storage are poorly done. Consequently, Ivoirian cashew nuts suffer an average price discount of about 20 percent compared to the average price for African cashew exports to India.

7.4. The elements of a program of productivity improvement are well understood. These include using improved varieties, training on better agricultural techniques, launching a phytosanitary treatment program, and extension services to advise on harvest and post-harvest practices. A similar program in Benin has recently raised both yields and quality, leading to a doubling of incomes per hectare. Implementing such a program in Côte d'Ivoire will require funding, stronger producer organizations and government commitment, with support from NGOs and the private sector. Currently, some funding is being collected from the sector but little is invested back into it. In 2009, the sector paid CFAF 4.6/kg in parafiscal levies (down from CFAF 7.5/kg in 2006) as well as an export tax of CFAF 10/kg. These levies generate some US\$3 million annually, with an additional US\$7 million coming in tax revenues.³² The levies are paid to the regulatory authority (ARECA), the agency responsible for financing research and extension (FIRCA), the inter-profession (INTERCAJOU), and the private company handling the control of quality and export quantities (ACE). However, the sector has not benefited from any research and extension from public agencies, the inter-profession is weak and unrepresentative, and the effectiveness of ACE's services has been called into question.

7.5. Attention must also be paid to building the capacity and improving the governance of producers' organizations. There are many cooperatives and other village-level groups, but they are mainly focused on collecting the harvest. They offer few other services, have little knowledge of the market, and are generally poorly governed. Not surprisingly, they generate much distrust among farmers and only control an estimated 15 percent of production. There are several federations of producers' organizations but they do not do much better, so that producers' interests are poorly represented in the inter-profession. A considerable effort will be needed to build a legitimate structure to support improved practices and to speak on behalf of farmers, starting with a census and the election of new leaders.

7.6. Marketing is dominated by foreigners, largely Indians. In 2008, there were 21 active commercial exporters (of which 15 were Indian) who accounted for 82 percent of sales, and 10 cooperatives (of which 3 were pre-financed by Indians), accounting for the remaining 18 percent. This foreign presence is explained by their industry knowledge and their access to cheap financing from their overseas parent companies (3-5 percent vs 12-15 percent at Ivorian banks). While these Indian middlemen undoubtedly deserve some of the credit for promoting the growth of the sector, the marketing margins appear high, even taking into consideration the high cost of transport over long distances and the illegal taxes paid at the many roadblocks on the way to the port. The farmgate price is 40-60 percent of the CAF price, depending on the location, similar to the experience in the cocoa sector although the level of taxes has been much higher for cocoa (30-40 percent vs 3-8 percent for cashew). A minimum farmgate price is announced each year but this seems to be consistently above the prices actually paid and has little effect on them.

³¹ Yields of up to 5 tonnes per ha are possible.

³² This amounts to about 3 percent of the CAF price in 2011.

There is clearly a need for improved bargaining power at the level of the producer, through better market and product information, strengthened farmer groups or cooperatives, and improved storage facilities with the accompanying financing. Better quality control would also ensure that the product is not undervalued, as appears to be happening at present.

7.7. The promotion of more processing of raw cashew nuts is undoubtedly the greatest challenge facing the sector, and also the most controversial one. There are labor-intensive methods for shelling cashew nuts which have been successful in other African countries and are being used on a limited scale in Côte d'Ivoire. They require relatively little investment (about US\$1.5 million including land and construction for a capacity of 1,500-2,000 tons of nuts per year), and would create considerable employment – about 40,000 full-time jobs if one-third of the current output was processed. They also require little or no energy as the shelling machinery is manual and the shells can be burned to generate the power needed for boiling and drying, and even produce a surplus for the local community. The machinery is relatively simple, part of it can be produced in the country, and should not pose serious maintenance problems. The presence of local processors would create a private sector with an incentive to provide support services to farmers, as well as to demand improved quality.

7.8. On the other hand, Côte d'Ivoire is not competitive with India and Vietnam in the processing of raw cashew nuts at the present time. There was one fully operational factory in Côte d'Ivoire in 2010, with a capacity to process 10,000 tons of raw cashew nuts per year. Although using the most efficient technology and being managed by a world class operator, it has struggled to make a profit at the price it has to pay in order to be competitive with raw nut exporters. Processing costs can be estimated at CFAF 200-220/kg in Côte d'Ivoire compared to only CFAF 150/kg in India and Vietnam. Labor productivity, building and utility costs, interest rates, and taxes (official and unofficial) provide part of the explanation. But a bigger problem is the need to constitute a large stock of raw material, and finance it at prevailing high interest rates, in order to keep the factory running during the eight months between the end of one harvest and the start of the next one. Indian firms can avoid most of this expense by purchasing from different regions of the world at different times. However, the same operator opened a larger factory (30,000 tons capacity) in 2011, so apparently these challenges are not insurmountable, at least for major international players.

7.9. The biggest question before the Ivoirian authorities, therefore, is whether protection can be justified, and if so by how much and in what way. It is a fact that all other countries with a significant processing capacity have provided some protection in order to promote value addition. Brazil has adopted a ban on the export of raw cashew nuts while India, Vietnam, and Mozambique have relied on export taxes on raw cashew nuts in the range of 18 to 40 percent, combined with other fiscal incentives. Côte d'Ivoire's cost disadvantage relative to Indian processors amounts to about CFAF 50/kg, which would require an export tax on raw nuts of the same amount, or 12-20 percent of the FOB price depending on the level of world prices. This is considerably higher than the current level of taxes and levies (CFAF 15/kg).

7.10. However, an export tax could prove to be in contradiction with the Government's poverty reduction strategy. Such a tax would be passed on to farmers in the form of a lower farmgate price, thereby penalizing 250,000 smallholders. The benefits would accrue to (i) owners and workers of the processing plants which open as a result; and (ii) the beneficiaries of

the tax proceeds – government and possibly sector stakeholders. Since the general investment climate is poor, and this sector is considered particularly risky, investment in processing will only increase gradually. Processing one-third of the harvest would generate 40,000 jobs but would require 60 factories of 2,000 tons each, costing in the order of US\$90 million in total. It could easily take ten years or more to reach this stage, and meanwhile farmers will have been suffering the impact of the tax on their entire output.

7.11. One solution would be to recycle some or all of the revenues from this export tax back into a program to improve productivity. In this way, farmers should gain much more in terms of higher yields and improved quality than they lose through a slightly lower price. This assumes an institutional structure capable of managing significant sums in a transparent matter and accountable to the farmers, avoiding the abuses experienced in the coffee-cocoa sector.

7.12. A second, complementary element would be to minimize the level of the export tax and compensate by using other incentives. The tax could be reduced to 10 percent or less by combining it with improved incentives for investment, guarantees for bank loans, and tax credits. For example, the tax exemption for imported equipment worth over US\$1 million should be available at the lower levels of investment relevant for a cashew processing plant. Such a lower tax would also have the advantage of reducing the incentive for smuggling into Ghana where no such tax exists.³³

7.13. The industry should be monitored closely to ensure that firms are becoming competitive and that the tax is not serving to protect inefficiency. Ideally, this form of infant-industry protection should decline over time to keep the pressure on its beneficiaries to improve their productivity. This principle should be retained, especially as the investment climate improves and the profitability of this activity is confirmed. However, as long as the main competitor in India distorts its market, the elimination of the export tax may be unrealistic. At the same time, care must be taken not to succumb to pressure from poorly performing firms to raise the export tax in order to ensure their survival. The opening of a major new processing plant in 2011, in the absence of an export tax, suggests that some world class companies may be able to succeed without protection (though it is not clear if other fiscal incentives have been provided).

7.14. Ultimately, the development of a processing industry through limited protection and support may be justified as a risk-mitigation measure in view of the fact that the alternative is continued dependence on one importing country which has an express policy of reducing its raw material imports in favor of local product. Not to build up local processing capacity could mean jeopardizing the entire sector, a sector in which Côte d'Ivoire has proven its comparative advantage in producing the raw material, and where it should be competitive in processing under the right conditions. But further analysis is required to design the appropriate package of incentives, and consultation among all stakeholders will be needed to explain the objectives and seek a consensus.

7.15. Quality and traceability will pose additional challenges for Côte d'Ivoire. In order to sell shelled kernels directly to consumer markets in the EU and the US, the country will have to

³³ It is estimated that 54-60,000 tons are smuggled into Ghana each year.

raise the low quality of its nuts and develop the capacity to meet increasingly tough standards applied by governments and the private sector. National standards exist and they are equivalent to the international ones (CODIFORM). Now they need to be applied. A recent audit found numerous potential violations – contamination by pesticides used for cotton, utilization of inappropriate bags, risk of contamination in handling and processing, weak quality control – and little knowledge among actors in the sector on issues related to quality and risk management. It recommended a program of education through good practice guides, systems of laboratory analysis and certification, and the upgrading of existing processing facilities.³⁴

7.16. Another major constraint is the need to develop a local market to absorb rejects which do not meet international standards, as well as for some of the potential by-products. Local demand for cashew nuts is weak as it is considered a luxury snack. The fruit of the cashew nut is not used in Côte d'Ivoire today but it can be used to make jam, juice and an alcoholic beverage. The cashew nut shell liquid (CNSL) has important properties which make it valuable for automobile brake linings and paint and varnishes. These by-products are fully used in the main processing countries (Brazil, India) and can bring as much revenue as the cashew nut itself.³⁵

7.17. The cashew sector is clearly an exciting source of growth with the added advantage of being based in the poorer parts of the country, being a smallholder crop and having the potential to generate significant rural employment through processing. The output of raw cashew nuts can reasonably be expected to grow by at least 10 percent per year over the next decade, even without improvements in productivity. Yields can be increased by another 10 percent within ten years, with more improvements possible thereafter as new varieties are planted and begin to bear fruit. Farmers can be expected to continue investing in cashew as it is at least as profitable as the main cash crop alternative in the north (cotton), is less demanding of labor, and is less risky. Better harvesting and storage can raise quality, resulting in prices 10 percent higher. Finally, transformation of 30 percent of the national production will increase the total value of exports by 8 percent.³⁶ Eventually much higher value added should be possible through the processing of finished consumer goods (roasted, salted nuts), though this will only be possible in the medium-term. Overall, growth in the value of cashew exports by 15 percent p.a. over the next decade seems feasible, providing a comprehensive strategy is put in place soon, aiming at improving on-farm productivity and product quality, promoting domestic processing, and strengthening the management of the sector.

³⁴ Such programs already exist for other commodity exports in Côte d'Ivoire and could easily be implemented for cashew, providing there is secure access to a market which could absorb the costs of compliance.

³⁵ An R&D technology adaptation program could be run using the WAAPP/CARG initially, and eventually expanded through the inter-profession.

³⁶ Shelling adds about 25 percent to the value of the cashew nut. $25\% \text{ of } 30\% = 7.5\%$.

8. RUBBER: BUILDING ON A BOOM

8.1. Rubber has become the undisputed second most important agricultural export crop after cocoa. The value of rubber exports is more than twice that of cashew or coffee, and unlike cocoa or coffee, production is growing very fast. Côte d'Ivoire is the largest exporter of rubber in Africa. Volume has grown by 7 percent per year from 1995 to 2010, reaching 215,000 tons. The value of exports has grown much faster over the last five years (some 30 percent p.a.) due to the rise in world prices. As the price of natural rubber is determined by the price of synthetic rubber which in turn is driven by the price of crude oil, the future prospects for natural rubber look very good. World prices hit a record high in December 2010, and prices are not projected to fall significantly in the future.

8.2. This has become the most profitable crop in Côte d'Ivoire, helped by attractive prices and ideal agro-climatic conditions in the southern part of the country. Estimated net revenue per hectare was already over US\$2000 in 2008 and it will have increased since then due to rising prices (see Table 8.1). In addition, rubber can be harvested fairly consistently throughout the year, providing a stable source of cash income. Consequently, private investors of all sizes have been investing in new plantations, including many coffee producers and more recently some cocoa farmers who are replacing their trees in favor of rubber. While production began on large-scale plantations, small and medium-sized rubber farms now account for 56 percent of production. This represents the future of the industry given the lack of availability of large tracts of land. Small village-level farms still dominate the non-industrial sub-sector, but medium-sized plantations, often owned by urban dwellers, are becoming important. Because rubber requires some processing before it can be exported, the sector supports 15 factories in various rural locations. The total processing capacity is about 350,000 tons, or about 50 percent above current production. In total, an estimated 60,000 agricultural and industrial jobs have been created in rural areas. Sector stakeholders are projecting growth of more than 10 percent per year, which seems feasible if current international prices are sustained.

Table 8.1: Comparative Profitability of Cocoa, Oil Palm and Rubber in 2008*

	Cocoa	Oil palm	Rubber
Production (kg/ha)	700	8 000	1 800
Price (CFAF /kg)	450	35	432
Gross Revenue (CFAF /ha)	315 000	280 000	1 296 000
Net Revenue (CFAF /ha)	169 000	80 000	1 173 000
Value of a day's work (CFAF)	3 313**	4 043	16 442

* assuming good agricultural practices are used in each case.

** closer to CFAF 6000/day at the high world prices of early 2011

Source: Author's estimates on the basis of data from BNETD.

8.3. Another advantage of the rubber sector is the strength of the inter-profession, APROMAC. While the state has played an important role in developing both industrial and village-level plantations, its involvement has now been limited to the definition of the sector's policy and regulatory framework, while the inter-profession effectively manages the sector's commercial operations, including rubber pricing policy and the financing of research. This has

been facilitated by the limited number of companies involved (11) and the presence of well-organized, medium-scale farmers in the producers' association. Two of its significant achievements have been the creation of a sector development fund and the establishment of a transparent price-setting mechanism which satisfies all stakeholders. The farm-gate price is set at a minimum of 61 percent of the f.o.b. price, which means that market risks are shared between producers and processors, while competition among processing plants and the strength of the world price have ensured that the actual price paid is typically higher than this minimum.

8.4. Average yields are already among the highest in the world for industrial plantations, though yields on smallholder farms are substantially below those on industrial estates. These yields may fall somewhat in the coming years as the rush to expand plantings and the shortage of high-quality varieties have often resulted in the use of sub-standard seedlings by smallholders. It will be important to avoid this practice in future. While industrial plantations should expand their sales of high-quality planting material, the performance of private nurseries must be improved. Pilot programs to certify these nurseries and create new ones are already having some success. The subsidies from the Rubber Development Fund for the purchase of new seedlings from certified suppliers provide an important incentive to farmers to buy high-quality materials rather than use sub-optimal seeds bought from sub-standard nurseries or produced from their own or their neighbors' farm.

8.5. After the withdrawal of the state, the two largest industrial plantations continued to provide extension services in their areas, but this left many other regions unserved. Since 2005, the inter-profession has addressed this problem by raising funds through parafiscal levies and channeling them to the Inter-professional Fund for Agricultural Research and Extension (FIRCA). These funds now support nine of the eleven industrial companies to provide extension services according to contracts signed with FIRCA. However, the number of extension workers is still inadequate to meet the rapidly expanding demand, services are not available to farmers whose young plantations have not yet begun to produce, and complications arise in the case of absentee farmers. Research is also being funded by APROMAC through FIRCA, on the basis of research contracts negotiated with the National Agricultural Research Center (CNRA).

8.6. Rubber cultivation is very labor-intensive, including considerable semi-skilled labor needs, as it requires specialists in grafting and tapping, and the latter is needed on a continuing basis. Surprisingly, three-quarters of smallholders prefer to hire professional tappers rather than learning how to do it themselves. This raises two risks: i) that these workers will focus on short-term returns rather than maximizing the long-term benefits of a plantation, and ii) with the rapid expansion of plantation, there may be a shortage of such specialists, as they opt for their own farms, or move to town. The former has already emerged as an issue; the latter may do so as the national economy resumes a more normal growth pattern. On the other hand, in a country suffering from major youth underemployment, it should be possible to turn this growing demand for grafting, tapping and extension services into an opportunity.

8.7. Access to land is an issue but not yet a binding constraint. Population pressure is increasing in the southern half of the country, and it will be difficult if not impossible to identify large blocks of land sufficient for an industrial estate. However, there is still significant potential to expand smallholder cultivation, through both the utilization of fallow land and substitution for less profitable cash crops such as coffee, cocoa or pineapple plantations. Nor should there be a

negative impact on food production. Food can be grown for several years in between the young rubber seedlings until their canopy is too dense, and the income from rubber is often used to buy inputs for food crops. Evidence from the Dabou region indicates that food production increased in parallel with the expansion of rubber (and oil palm).

8.8. It will be important to identify ways to assist poor farmers to enter the rubber sector, including those who cannot make a reasonable income in coffee and cocoa. Substantial investment in the expansion of rubber plantations is taking place on the basis of personal resources, but this is primarily coming from larger farmers and the urban middle class. The rubber companies have lost interest in providing long-term credit to small farmers after suffering poor repayment rates, and the commercial banks are reluctant to do so given the length of the necessary credit period (7 years grace period until the trees start to produce, then 8 to 10 years thereafter for repayment). The Rubber Development Fund is not mandated or equipped to offer credit. However, it subsidizes the cost of producing high-productivity seedlings, thereby reducing the cost of establishing small-scale plantations. Risks could be reduced by creating a centralized data base to keep track of all borrowers, thereby increasing the willingness of financial institutions to provide credit. APROMAC has already initiated the establishment of such a mechanism by carrying out an exhaustive inventory of all rubber producers. A partial risk guarantee through the Rubber Fund would also be helpful, although there would be obvious risks involved and it may also require an additional levy on rubber exports. Finally the cost of establishing plantations may be reduced through carbon credits as allowed for in the Kyoto Protocol for the reduction of greenhouse gases.³⁷

8.9. Other challenges exist at the level of processing. Costs are higher than for Asian competitors due to the high cost of electricity, diesel fuel, equipment, spare parts and maintenance. Another big factor is the excess capacity resulting from the entry of new companies. For the time being, this does not appear to be affecting competitiveness as Côte d'Ivoire has a transport cost advantage for the European market, and world prices are very high. Furthermore, overcapacity should gradually decline as the domestic supply of rubber increases.

8.10. A bigger issue is the disruption being caused by new entrants. The installed processing capacity is now 346,000 tons which is 60 percent higher than the level of production in 2009 (203,000 tons). Some of the new companies do not have plantations of their own and there are buyers who do not even have factories. These operators are therefore primarily dependent on producers who have previously supplied other companies under contractual arrangements. While competition among buyers has been good for producers in terms of prices, it risks undermining important relationships. Many farmers benefit from free inputs and services or short-term equipment credit from a processing company with the understanding that they will sell their rubber to that company. The company then deducts the cost of these services before paying the farmer. Companies which have not provided such services in advance can afford to pay a higher price, but the established companies may withdraw their services if they cannot recoup their costs. Buyers are also expected to collect certain levies to support APROMAC and the Rubber Development Fund, and through it, seedling production, research and extension.

³⁷ Such credits are feasible if i) the land was not forested as of December 31, 1989; ii) the amount of carbon sequestration claimed is net of what would have happened in any event; and iii) the planting would not have happened without the credits. While this may exclude replanting, it should apply to extension on fallow land.

Some of the new entrants are not contributing these levies and APROMAC does not yet have the authority to enforce the agreed rules.

8.11. APROMAC needs to have the authority to accept or reject new entrants, to approve their location and to insist on their respect of the rules of the game. There is now recognition in Côte d'Ivoire that new legislation is required to allow the formation of true interprofessions which enjoy this type of authority. A draft law on agricultural interprofessions has been prepared. It should be rapidly approved, whereupon APROMAC should be one of the first to benefit. APROMAC will then need to design rules to determine when a new entrant can be accommodated and how investors will be chosen. Further strengthening of APROMAC, within a competitive environment, may help enforce supply chain coordination and cooperation, while improving the country's competitiveness over time.

8.12. APROMAC can and should revisit its pricing mechanism, even without any change in its status. The decision to fix the farmgate price at 61 percent of the fob price was made in 1999 when the world price was much lower. In addition, technological progress has reduced the cost of processing rubber. The current arrangement has encouraged very large profits and overinvestment in capacity while depriving farmers of income which could have been used to expand production. With international prices expected to remain high, it is time to review normative costs and the share of the international price that should be retained by producers.

8.13. It may also make sense to reconsider the level of taxation of the sector. The contrast with the cocoa sector is stark. While cocoa taxes and levies have gradually been reduced in the last few years, they still stand at 22 percent of the c.i.f. price, of which 14.6 percent goes to the treasury as tax revenues. The rubber sector does not pay taxes and only pays levies amounting to 0.4 percent of the f.o.b. price which all go back into the sector. Given the higher profitability of the rubber sector, and the growing presence of medium-sized farmers, it would seem reasonable to impose a modest export tax, but one which is ad valorem and therefore fluctuates with the world price. Under current market conditions, it may even be possible to do this without affecting the 61 percent share of farmers. It should also contribute to the Rural Investment Fund (FIMR) which funds rural roads and social infrastructure in areas where rubber is also grown but is currently supported only by poorer cocoa producers.

8.14. The social and environmental implications of an expanding rubber sector should not be neglected. Social problems can arise because of land expropriation, working conditions for labor in the industrial estates and factories, or the unequal relationship between these companies and the village producers. Negative environmental impacts may result from deforestation, the use of fertilizer and pesticides, and water pollution from the industrial estates. These problems are not severe in Côte d'Ivoire should be manageable in the future, especially if the emphasis going forward is to develop smallholder production, using largely fallow land and conversion from other crops. Rubber cultivation is not very dependent on chemical inputs once the trees are established. The larger companies have already adopted their own internal code of conduct on social and environmental matters. However, it would be good to extend this practice to all companies in the sector and to develop guidelines for smallholders, under APROMAC's oversight.

8.15. The rubber industry is set to be a major driver of rural growth and employment in the southern part of the country in the coming decade. APROMAC has set itself the ambitious target of tripling total production in the next 10 years to reach 600,000 tons by 2020. Significant growth is inevitable given the amount of new planting that has occurred over the last 7 years but has not yet begun to deliver product. It is estimated that only half the plantations in existence in 2009 were over 7 years of age and therefore in production – 75 percent of the industrial estates but only 40 percent of the village plantations. This alone guarantees almost a doubling of production. Additional growth will have to rely primarily on new planting, since yields are already quite high. Achieving another 100,000 tons to bring the total to 550,000 tons by 2020 would already be a remarkable success and would seem to be more realistic. It would amount to real growth of 10 percent per annum. This will require planting about 20,000 ha per year with improved access to high-quality planting material, extension and tapping services for smallholders, and further improvements in the regulatory environment enforced by a strengthened inter-profession.

9. OIL PALM: COMPETING WITH ASIA ON THE REGIONAL MARKET

9.1. Côte d'Ivoire is the largest exporter of palm oil in Africa.³⁸ The total production is around 400,000 tons per year from 230,000 ha of plantations. Approximately 74 percent of the area planted in oil palm belongs to 35,000 independent farmers, and of those, about half have plantations of less than 10 hectares. Another 30 percent have medium-sized farms of over 30 ha. These plantations only account for 55 percent of production, however, as their average yields are much lower than on industrial estates. Oil palm cultivation in Côte d'Ivoire grew steadily between 1963 and 1990, but stagnated since then. Output grew between 1995 and 2000 after the devaluation of the CFA franc and the privatization of the parastatal, Palmindustrie, but then fell back with the collapse of world prices. Village plantations continued to expand in size but this was offset by falling yields; industrial plantations stagnated.

9.2. Côte d'Ivoire has a powerful oil processing sector. There are four large producers of crude palm oil (CPO) with a total capacity of 500,000 tons/year and a world-class industry of consumer goods producing substantial amounts of edible oil and other products for the domestic market, including margarine, soap, toothpaste, cosmetics, and several industrial inputs. The value of CPO production for local consumption and export in 2010 can be estimated at roughly US\$400 million using world prices, which does not include the value added through second transformation into consumer and industrial products.

9.3. The recent rebound in world prices has stimulated new investment in replanting on industrial estates, and the expansion of village plantations. The world price for CPO jumped from US\$400/ton in 2005 to US\$1200/ton in 2008, fell briefly in 2009 and then quickly rebounded to US\$1200/ton in early 2011. World prices are likely to fall somewhat, but they are forecast to remain in the US\$800-900/ton range in the medium term. World demand for palm oil is growing at 9 percent p.a., faster than for any other vegetable oil. It is very competitive with any other edible oil because it produces far more oil per hectare, and it has now replaced soybean oil as the most popular type. Now it is being used for biofuel, a new source of demand which will drive the world market for years to come.

9.4. With higher world prices and an expanding local and regional market, the sector looks profitable once again. Côte d'Ivoire need look no farther than its sub-region for a market. Imports of edible oil are large and growing in the UEMOA and ECOWAS regions as demand is increasing three times as fast as supply, and palm oil accounts for 60 percent of these imports. Oil palm is easily the most efficient source of edible oil in the region, producing eight times as much oil per hectare as groundnuts – the next best alternative.

9.5. The question is whether Côte d'Ivoire can compete with the two biggest exporters, Malaysia and Indonesia. Yields in Côte d'Ivoire are much lower than those in Southeast Asia, where village plantations average 15 tons of fresh fruit bunches (ffb)/ha and industrial estates reach 25-30 tons/ha, as compared with 6 tons/ha and 11 tons/ha respectively in Côte d'Ivoire. This is partly due to somewhat inferior agro-climatic conditions, though they are generally quite good in Côte d'Ivoire. The primary problems appear to lie elsewhere: the poor quality of

³⁸ Ghana exports slightly more in volume terms but the value of its exports is lower due to the lower prices earned.

planting material, aging trees, insufficient maintenance and fertilization, inefficient harvesting practices among smallholders, high transport costs, and less efficient processing.

Table 9.1: Oil Palm: Cost Comparison between Côte d'Ivoire and Malaysia

	Côte d'Ivoire	Malaysia
Yield on village plantations (tons of bunches per ha.)	7	15
Yield on industrial plantations (tons of bunches per ha.)	10	25
Fertilizer use (kg/tree/ha.)	1-3	10
Price of oil palm bunch (US\$/ton)	200	164
Variable costs of factory (US\$/ton of bunches)	3.8	1.5
Fixed costs of factory (US\$/ton of bunches)	6.8	4.4
Depreciation (US\$/ton of bunches)	7.6	2.5
Rate of oil extraction	20%	18%
Cost of first stage processing (US\$/ton of oil)	470	154

9.6. Factories in Malaysia and Indonesia tend to be more efficient because they are larger and have the necessary supply of raw material within the optimum distance (30 km or less from the factory). Energy, packaging and transport costs are also lower. A detailed benchmarking study conducted in 2002 found that the cost of processing one ton of CPO in Côte d'Ivoire was twice as high as in Malaysia – and the total cost of production was three times as high when the cost of the raw material was included (see Table 9.1). Yet costs used to be similar in Malaysia before it launched a concerted effort to improve performance throughout the supply chain. It should be possible for Côte d'Ivoire to reduce its costs by at least one-third, still well above those of Malaysia, but close to the world average and competitive in the regional market.

9.7. The presence of major private sector operators in Côte d'Ivoire, and their recent affiliation with Malaysian interests, provides grounds for optimism. Three private agribusinesses were created when the original palm oil parastatal was privatized in 1996. Each one has its own industrial plantations and factories, while also buying from independent farmers. Several smaller operators without plantations have entered the market, making for a total of 18 factories producing CPO. With the recent rise in farm-level production, the installed capacity is now insufficient. There has recently been a consolidation in the industry such that PALMCI now accounts for 80 percent of the CPO produced in Côte d'Ivoire. Its parent company, SIFCA, has recently partnered with two Malaysian companies, Wilmar, the world's largest producer of CPO, and Olam, the largest exporter of CPO. SIFCA has also bought one of the major second-stage refiners of CPO and is planning to double its capacity. The other major player in the transformation of CPO in Côte d'Ivoire is Unilever, the world leader in this activity. These two groups are therefore well placed to improve efficiency, satisfy growing domestic demand and increase exports to the sub-region. They are already implementing some of the recommendations of the 2002 audit.

9.8. Côte d'Ivoire has a long history of effective research in oil palm which has produced some of the most productive varieties in the world. However, especially since the privatization of the sector, the process of distributing these varieties to the village level has deteriorated. The one research station supplying the improved seeds is a long way from most farmers, and has trouble keeping up with demand. As a result, farmers tend to rely on intermediaries operating nurseries, but the quality of their product is often substandard due to their inadequate knowledge of proper cultural practices, and the absence of a system of quality control. To support the expansion of the sector, it will be necessary to establish a network of nurseries linked to the research station and certified by the inter-profession.

9.9. The availability of extension services and input financing also deteriorated after privatization, as the new companies found it increasingly difficult to absorb the high costs involved in the face of high default rates. The farmers' association tried to fill this void but was not successful. PALMCI is now strengthening its support to farmers, and other actors will need to follow suit. Some funding is raised through a levy imposed by the inter-profession and collected when the product is delivered to the factory. This levy is then managed by FIRCA to subsidize research and extension, and the production of improved planting materials. The amounts involved remain modest, however, and may need to be enhanced.

9.10. The problem of long-term financing for replanting or expansion is equally serious, especially for smallholders. Industrial estates, large farmers and urban investors are managing to use their own resources or access to foreign capital but poor farmers risk being left behind. The inter-profession will need to explore the possibility of establishing a partial guarantee fund for commercial bank loans, and a credit bureau to reduce risks by tracking borrower performance. In fact, in order to achieve the necessary replanting at industrial estates, as well as upgrade and expand factory capacity, some financial assistance will probably be needed through, for example, the WAEMU regional fund for agricultural development, carbon credits and/or a MIGA guarantee facility.

9.11. There are major challenges at the harvesting stage, where it has been estimated that up to one-quarter of the harvest is lost. Normally, farmers should not be more than 35 km from a factory in order to ensure that their product arrives in good condition. Rural transport has suffered in the last 10 years from lack of road maintenance, inadequate trucking capacity, and road blocks. The inter-profession might consider contributing to the FIMR which has developed a rural road project for the cocoa sector which could be extended to support oil palm. Farmers also need an incentive to maximize the quality of their product. PALMCI has had some success after introducing a quality premium which should be generalized across the sector.

9.12. The oil palm sector has created the necessary basis for an institutional framework to manage and regulate its activities. An inter-profession (AIPH) was created in 2003. Farmers are organized in cooperatives around each crude palm oil factory, and together they are grouped into a national federation. The CPO companies have their own professional association as do the industries involved in the second transformation. AIPH has succeeded in establishing a transparent price-setting mechanism with floor prices for fresh fruit bunches, CPO and refined palm oil which shares market risk across the actors. It has also initiated a financing mechanism for extension services through FIRCA. However, AIPH remains very weak and imbalanced, since the farmers' federation is no match for the industrial associations. The recent boom in palm oil prices has breathed new life into the AIPH. It has been decided to increase its funding, create a full-time secretariat, expand its activities, and establish a development fund similar to the one in existence for rubber. The proposed new law on inter-professions should be applied to the palm oil sector, enabling AIPH to enforce its rules on all members.

9.13. Palm oil production has generated serious concerns about the environmental and social impact, to the point where most aid agencies have imposed a temporary moratorium on projects in this sector. These concerns revolve around deforestation, the emission of greenhouse gases from burning forests and from the effluent treatment ponds of factories, contamination of underground water by fertilizer, the impact of pesticide use, the displacement of smallholders and their conversion to laborers, and the lack of respect of national labor laws. These issues

have gained attention because of operations in Southeast Asia where industrial plantations are much larger, more dominant, and growing faster. They are less relevant in Côte d'Ivoire where there has been little growth, and village plantations are more important. There has been little use of fertilizer and pesticides at the village level and no displacement of farmers in the last 20 years. Also the largest company, PALMCI, has adopted its own code of conduct. Nevertheless, more can and should be done. The international Round Table on Sustainable Palm Oil (RSPO) has adopted principles and criteria to deal with all environmental and social concerns which have not yet been adopted by any actors in Côte d'Ivoire. The AIPH should either adopt its own code or ideally that of the RSPO, and enforce it across the industry.

9.14. The focus of expansion should be on village plantations. The new interest in oil palm may well create pressures to expand industrial plantations but, with the rapidly growing rural population in the southern half of the country, there will be few if any opportunities for such growth. It will be far preferable to support village plantations, although even here the demands from larger farmers and urban investors could generate problems on a smaller scale. Also, AIPH and/or individual companies will need to develop a system to certify village-level producers according to whatever standards are adopted.

9.15. The oil palm sector looks set to enjoy a new period of growth. Some growth is guaranteed by industrial estates which have launched large replanting programs with high-yielding varieties. Higher prices should also encourage smallholders to replant and expand their plantations look after their trees more carefully. Under the right conditions, it should be possible to create 100,000 ha of new plantations over the next ten years through replanting and extension which will start to bear fruit after only three years. As a consequence, CPO production could increase from 350,000 tons in 2010 to 900,000 tons in 2020, a rate of growth of almost 10 percent per annum. This in turn would create some 50,000 new agricultural jobs, plus many more industrial ones.

9.16. This vision assumes that Côte d'Ivoire can compete with Malaysian and Indonesian imports. This should be possible if the improvements currently underway at the farm and factory levels are pursued, and if fraudulent imports are prevented. The entry of prominent Malaysian interests in Côte d'Ivoire suggests that the country can remain competitive. As an expansion in production will require increased exports to the sub-region, Côte d'Ivoire will need to keep pressure on fellow members of UEMOA and ECOWAS to honor their free trade agreements.

9.17. It is more difficult to predict how competition with rubber will play out. World rubber prices have also improved dramatically and are expected to remain high and, for the time being, rubber cultivation is significantly more profitable than oil palm. Rubber also provides a more regular flow of revenue to the farmer. However, it takes much longer to come into production – seven years vs three – raising the cost of entry. Oil palm can also be used directly by the farmer. Ultimately, most farmers will probably opt for the crop with which they are familiar and/or for which they have the best access to technical advice and financial support. Small farmers near to well-run CPO factories offering reliable extension services will probably be interested in oil palm. Medium and large farmers may choose to diversify their risks by planting both rubber and oil palm. At the national level, such diversification would seem well worthwhile.

10. COTTON: REVIVING AN ECONOMIC PILLAR

10.1. Cotton has long been the foundation of the economy in Northern Côte d'Ivoire. By 2000, 200,000 households were involved in its cultivation, production had reached 400,000 tons, and the country had become the largest producer of cotton in sub-Saharan Africa.³⁹ There were 13 ginning companies, all in the North, three spinning and weaving mills, two textile companies and one cottonseed oil processor. Several of these enterprises were based in Bouaké, creating the basis for an industrial hub in the North-Central part of the country and a significant driver of regional development. Cotton production was also growing fast, rising by 7.5 percent per annum from 1990 to 2000.

10.2. Cotton had a significant positive impact on rural welfare. A 2002 survey found that over 90 percent of the population lived above the poverty line in northern villages where cotton cultivation was widespread, whereas this figure dropped to 30 percent in villages with little cotton activity. Furthermore, it was complementary to food production. Cotton production is typically grown in rotation with other crops (maize, rice, sorghum) and because it provides access to fertilizer, the production of maize and other rotation crops also benefits.⁴⁰ Cotton production supported the adoption of animal traction, through the revenues necessary to make the initial investment and the production of oilseed cake for animal feed.

CHALLENGES AND CONSTRAINTS

10.3. In 1998, after several failed attempts at reform, the monopoly parastatal CIDT was broken up into three companies with temporary regional monopolies. Two of these were immediately privatized, with the intention of selling the third one as soon as possible. After a transition period of two years, competition between ginneries was supposed to begin and producers' organizations could start to provide the inputs and services to their members where feasible. The ginneries resisted this liberalization, which was supported by the producers, preferring the traditional vertically integrated model which reduced supply risks but also preserved lucrative margins on input provision. But production continued to grow and its management had started to evolve toward more competitive contractual arrangements between producer organizations and ginnery. Under strong pressure from producers, in particular the farmers' association, URECOS-CI,⁴¹ which represented farmers accounting for 80 percent of production, the liberalization strategy adopted in 1998 was confirmed in a national workshop in January 2002 and officially adopted by government decree.

10.4. However, this sector has been perhaps the most seriously affected by the protracted socio-political crisis which began in 2000 and divided the country in half after 2002. The crisis, and the ensuing isolation of the North, increased the costs of production and disrupted the new coordination mechanisms and governance structures. Ginnery quickly reverted to a top-down approach and one of them (LCCI) willfully defaulted on its payment to producers for seed-cotton. URECOS-CI was hard hit – the ginnery it had recently established was ransacked, and it

³⁹ The three-year average for 1999-2001 was equal to the exports of Benin and slightly higher than those of Mali.

⁴⁰ Either through the residual effect of fertilizer remaining in the ground after the cotton harvest, or because some fertilizer is kept aside for application on the maize crop.

⁴¹ Regional Union of Cooperative Enterprises in the Savanna Zone of Côte d'Ivoire.

was unable to recover the costs of inputs it had financed, undermining this initial attempt to escape the control of ginners. At the same time, the authorities allowed the creation of a multitude of other associations, often promoted by the private ginneries with the explicit objective of weakening URECOS-CI.⁴² The cooperative movement quickly broke down. Bank financing dried up, while theft and vandalism destroyed much factory equipment. Reduced access to fertilizer and pesticides led to falling yields. Finally, the sector's competitiveness was also hit by falling world prices, the appreciation of the Euro (to which the CFAF is pegged), and the sharp increase in the cost of inputs. Total production fell from 400,000 tons in 2000 to 120,000 tons in 2008, and the number of producers declined to 70,000.

10.5. The situation began to turn around in 2009. A new strategy was adopted, confirming the vision of 2002, with a focus on financial restructuring and the establishment of efficient and transparent mechanisms for managing and regulating the sector. The mismanaged LCCI factories were sold to a consortium of solid operators enabling the relaunching of cotton in one of the most productive parts of the country. New institutional arrangements for jump-starting research, seed production and extension received fresh attention. A new price-setting mechanism was adopted in 2010, allowing for transparency and the sharing of market risks between ginners and producers. At the same time, world prices rebounded remarkably, climbing from US\$0.56/lb in 2008 to US\$1.50/kg at the end of 2010. Output has started to respond, with 185,000 tons in 2009/10 and around 210,000 expected in 2010/11.

10.6. However, the disintegration of the cooperative movement remains a central problem. It undermines the possibility of establishing a legitimate, representative interprofession and it deprives the ginneries of the partners necessary to engage in contractual relationships. However, the association of regional unions, AFFICOT-CI, is regaining strength under new management and appears to be in a position to provide leadership to farmer organizations. For the 2010/11 season, its members account for about 60 percent of total production. It will nevertheless be necessary to rehabilitate the cooperative movement financially, and also from the point of view of its internal management. This issue was addressed in a 2008 study which outlined a program to restructure and rebuild producer organizations.

10.7. The system of research, seed production, and extension also needs attention. Research funding for cotton virtually ceased after 2002, while producers wish to reduce their dependence on ginners for extension services. Seed quality has decreased, with a negative impact on yields. A STABEX-funded program was launched in 2007 to relaunch the seed selection and multiplication scheme, with notable success in contracting out to seed farmers. Starting in 2008, a levy of CFAF 5/kg has been charged on seed cotton and transferred to FIRCA, of which 20% is for research and 60% for extension.

10.8. Quality control may be the area where gains can be most easily achieved. The quality of Ivoirian cotton is generally very good, yet it suffers from a discount on the world market which has been increased over the last ten years. This discount can be as high as US\$0.10/lb of cotton fiber which represents US\$17 million for a total harvest of 200,000 tons of seed cotton. While part of this discount may be due to a problem of perception which could be

⁴² By 2008 there were 27 federations of cotton producers, and URECOS-CI accounted for only 14 percent of production.

addressed by an active marketing program, part is well-founded, resulting from the presence of foreign matters (such as propylene), the quality of the ginning process, and the faulty classification of lint by ginners. Ginners are now providing advice on on-farm storage and bagging to reduce contamination, and an EU-UNIDO project is tackling other important dimensions of the problem: rehabilitating the Bouaké classification center to international standards, and building technical capacity for quality control. However, these measures need to be supported by a seed-cotton pricing system that rewards superior quality. The current differential between first and second quality cotton is not sufficient. In addition, ginners need to stop the current practice of over-classifying cotton, which is how they compete for the limited supply because the fixed farmgate price prevents them from competing on the basis of price.

10.9. A fundamental disagreement persists between the producers and the gineries. The latter insist on a return to exclusive zones in which they provide all critical inputs and services, and have a monopsony on cotton purchases. Their argument is based on the need to ensure, through good extension, the efficient use of the inputs the pre-finance, and an instrument for recovering their cost. However, their control over inputs and extension is not consistent with Government policy and the aspirations of the producers to reduce their dependence on the gineries, nor is it compatible with the current geographical location of gineries. Ultimately, competition between gineries and the option of contracting with other input and service providers should improve transparency and increase the share of the world price going to the producer.

THE WAY FORWARD

10.10. The contentious issue of extension delivery may be resolved soon. URECOS-CI has already started to break away from ginners' grip on input supply and extension by entering into a contract to sell the lint produced in its own ginnery (SICOSA) to a European buyer who in turn has agreed to pre-finance URECOS-CI inputs. It has finally been agreed that, starting with the 2010/11 season, FIRCA will enter into contracts for the delivery and financing of extension services (i) with unions for their members (who also have received inputs); and (ii) with ginners, for producers having received inputs from them. The unions and the ginners will then be free to deliver extension services either through their own staff or by sub-contracting to other certified service suppliers (such as ANADER or NGOs), FIRCA being responsible for monitoring the quality of the services delivered.⁴³

10.11. Perhaps the single biggest challenge will be to find a suitable mechanism for financing inputs which frees producers from ginners' control. Several attempts were made since 2000 to do so, in particular by URECOS-CI. They failed for different reasons, from the lack of credit discipline of farmers to the socio-political crisis, but farmers remain adamant. The high cost of inputs (which represent today about 50 percent of the value of the crop), make it impossible for most producers to buy them for cash. In the short term, most producers will probably need to continue to rely on credit from the cotton companies. But there are new attempts by farmer organizations to mobilize credit on their own. For the last three years, URECOS-CI has succeeded in mobilizing an increasing amount of input credit from an Italian

⁴³ Participation in the WAAPP will have the advantage of bringing new technologies from other countries involved in the Program, and shortening the time for generating and disseminating adapted technologies

buyer. Eventually, the stronger producer organizations should be able to attract credit from suppliers, buyers or banks, possibly with the guarantee of forward contracts for the sale of cotton-seed to ginners (while currently banks request the guarantee of forward sales of lint, which only ginners can provide). This approach can be promoted with the introduction of a credit guarantee fund and a central data base on all financial transactions in the sector to manage risks.

10.12. The sustained development of the cotton sector within a more competitive environment will require rebuilding the trust between the main stakeholders of the value chain – producers and ginners – and their capacity for collective action. INTERCOTON, the inter-profession created in 2002, has survived the long socio-political crisis and the very divergent views of producers and ginners. Since 2008, it has in fact made remarkable progress on a number of critical fronts, including the adoption of a new producer pricing policy and the recent agreement on the management and financing of extension services. Its success in concluding very difficult negotiations for the 2011/12 producer price without Government arbitrage is a strong sign of its capacity to manage the sector.

10.13. The promising on-going institutional reforms must continue. The long term vision for the development of the sector has been clearly stated by government in its 2008 policy paper. This vision must now be translated into the necessary institutional reforms. The key reform is the clarification of the roles of the inter-profession (INTERCOTON) and the regulatory authority (ARECA) and the granting to INTERCOTON of the full authority to impose its decisions on all actors in the sector once they have been adopted by a majority of actors. A new law on agricultural inter-professions has been prepared in 2010 which would meet this need. This law should be rapidly adopted and INTERCOTON should be a priority beneficiary. Once this is done, INTERCOTON will have the authority to define and impose the contractual arrangements for managing the commercial activities of the sector and the rules of the game between its private actors such as: (i) the definition of supply contracts between producers and ginners; ii) the mechanism for input financing and distribution; and iii) the policy regarding the establishment of new ginning facilities when necessary

10.14. The recent rise in world prices, and the prospect of continued price strength, presents and excellent opportunity for a strong rebound in cotton production. Even if prices subside to the projected level of US\$0.85/lb, cotton production should remain profitable. However, given the rising cost of fertilizer and pesticides, it may be necessary to reduce the dependence on these inputs by using these fertilizers more efficiently and moving toward the adoption of GM cotton as Burkina Faso and other major cotton exporters have done. The latter can reduce pesticide use and labor requirements while increasing yields, but it will require access to credit for financing the seeds.⁴⁴

⁴⁴ Genetically-modified cotton can reduce the number of pesticide treatments from 6 to 2 while increasing yields.

Figure 10.1: World Price of Cotlook A Cotton Fiber: Actual and Projected (US\$ cents/lb)



10.15. **Many other factors are also in place for a robust recovery.** There are a large number of cotton farmers familiar with cotton cultivation who could be attracted back to the sector as conditions improve. Land and labor should not be binding constraints, in spite of the expansion of food and cashew production in the north. Land is still available, cotton and food crops are complementary, and the labor requirements of the cashew harvest are compatible with the cotton timetable. High-quality cotton varieties are available and only require multiplication. Excess ginning capacity exists, managed by competent companies. Consequently, it is reasonable to imagine a return to production levels achieved in 2000-02 (400,000 tons of seed cotton) within the next five years, implying a rate of growth of 15 percent per year. But this will require concerted action to build a sound institutional framework with rules of the game accepted by all stakeholders and to improve producers' access to inputs and equipment.

11. RICE: NEW POTENTIAL FOR IMPORT SUBSTITUTION

11.1. Rice is the most consumed cereal in Côte d'Ivoire (about 70 Kg/year per capita). Total annual consumption is estimated at about 1.4 million tons. In spite of repeated efforts since independence, national output has consistently lagged behind demand and imports have steadily increased. Domestic rice production stagnated during the decade of 2000 and is currently estimated at about 400,000 tons and imports at about 1 million tons per year. Two principal types of rice production are found in the country; rainfed and irrigated rice, which are found in both the forest and savannah zones. Two-thirds of total rice area is rainfed, upland rice manually cultivated, with little intensification and very low yields (1.2 ton/ha of paddy on average), produced largely for home consumption. Irrigated systems (valley swamps or with full water control) represent the remainder (about 100,000 ha of which 35,000 with full water control). They are responsible for over 50 percent of total production, with average yields around 3.5 tons/ha of paddy.

11.2. In 2008, the government adopted yet another National Rice Development Program, just as the world witnessed a phenomenal rise in rice prices as part of the worst food crisis since the early 1970s. This price rise did great damage to the food security of the poorest households in Africa and Asia. Rice prices (5 percent broken) reached an unprecedented US\$1,000/ton in May 2008, before moderating to about US\$500/ton, a level still twice that of the early 2000s. Long term forecasts are for current rice prices to continue at that level over the next decade. The Government's 2008 "Sustainable Rice Development Strategy" calls for self-sufficiency by 2014, which would imply more than doubling production in five years, an objective that may prove overly ambitious in view of past history, in spite of the strong incentive given to domestic producers by the very high price of paddy. The strategy has a major focus on the development of intensive irrigated rice production by farmers who would be provided high yielding varieties, inputs and support services.

11.3. It is important to inform this policy with a careful analysis of the comparative advantage of rice cultivation in Côte d'Ivoire, including an assessment of the relative merits of the many different rice production systems available. As recently as 2009, a major rice importer tried to substitute imports with rice milled in the interior of the country but the unit cost in Abidjan proved higher than that of imported rice from Southeast Asia. The low competitiveness of domestic production has been aggravated by the political context since 2002, which dramatically affected the transport system between producing areas in the north and consuming areas in the south, in particular Abidjan, including road blocks and demands for bribes. This has also had an impact on the price of inputs such as fertilizers, which need to be transported from Abidjan or neighboring countries.

11.4. In addition, there is reason to believe that the import price is unreasonably high. The CIF price for rice in Abidjan in 2009 was 63 percent higher than the FOB price in Thailand. Using transport costs for neighboring Ghana and Sierra Leone, and adding extra insurance costs for risks associated with Côte d'Ivoire,⁴⁵ one would only expect a difference between the CIF and FOB prices of 20-30 percent. This may be partly due to the limited competition in rice importing, where one company accounts for 70 percent of imports and two others control another

⁴⁵ Importers pay 1% extra for insurance related to war risks.

17 percent. Analysis of the competitiveness of domestic rice should therefore allow for the possibility of improved efficiency in rice importation, resulting in lower border prices.

11.5. There are 11 different rice production systems in Côte d'Ivoire, using different levels of inputs and mechanization in rain-fed upland areas, valley swamps, and irrigated perimeters in the forest and savanna regions. Not all are equally viable so it is important to assess their relative efficiency and then determine the potential for their expansion. The domestic resource cost (DRC) methodology has been used to compare the economic value of the factors of production to the value of their output for the economy/society as a whole. A DRC ratio greater than 1.0 suggests that the factors used in the production process could have been more efficiently used elsewhere.⁴⁶ Table 11.1 summarizes the DRC ratios for the 6 main production systems, with three variants for the irrigated option. The base case scenario assumes that the current high transaction costs of importing continue, and makes generous assumptions about yields. More conservative scenarios were also modeled with lower import transaction costs, perhaps resulting from greater competition among importers, and lower yields.

11.6. This analysis indicates that Côte d'Ivoire should have a comparative advantage in several types of rice production. The most efficient production systems appear to be in the forest zone, which are closer to the main urban centers of consumption: valley swamps (*bas fonds*) intensively cultivated either manually (#4) or with power tillers (#5a) are consistently competitive, as is the intensive manual rain-fed upland system (#2). Traditional rain-fed upland rice (#1) is marginal under alternative scenarios and should be upgraded to the more profitable intensive approach. New irrigated systems using a simple stream diversion technique have the potential to be competitive. New irrigated systems requiring a catchment dam (#5c) are marginal and quickly lose their profitability as more conservative assumptions are made. They also require substantial investments and caution should be exercised before implementing such an approach. Production in the northern, savanna zone either with oxen (#7) or fully mechanized (#9) is not economically viable for supply of urban markets under even the most optimistic base case scenario.

Table 11.1: Domestic Resource Cost Ratios of Different Rice Production Systems

Forest Zone	Base case	Lower import prices*	Lower import prices and yields#
Type 1: Rain-fed upland, traditional, manual	0.77	0.99	1.27
Type 2: Rain-fed upland, intensive, manual	0.58	0.66	0.84
Type 4: Valley swamps, intensive, manual	0.50	0.62	0.87
Type 5a: Existing, irrigated, intensive, mechanized	0.59	0.73	0.93
Type 5b: New, irrigated with stream diversion	0.67	0.84	1.09
Type 5c: New, irrigated with new catchment dam	0.99	1.23	1.67
Savanna Zone			
Type 7: Rainfed upland, intensive, animal traction	1.53	1.91	2.97
Type 9: Rainfed upland, intensive, full mechanization	1.12	1.46	2.10

* The CIF price is assumed to be only 30% above the FOB price.

Yields are assumed to be 25% lower due to poor rains or pest and disease attacks.

Source: Authors calculations.

⁴⁶ This is not the same as the financial profitability of an activity for an individual, which depends on the costs and prices faced by the producer and may differ from economic values due to taxes, subsidies, or other distortions.

11.7. Intensive rain-fed upland rice production, using improved varieties and fertilizer, offers the greatest potential for expansion at a competitive cost. However, it is difficult to imagine that the current area of about 200,000 ha of traditional upland cultivation – about 40% of which is intensive – can be expanded to 1,300,000 ha, let alone in five years as projected in the national rice program. With growing population density and land constraints, expansion on such a scale would imply a substantial reduction in fallow periods and major investments in inorganic and improved fallow management systems for the entire farming system. Such expansion is not likely to be environmentally sustainable. The original plan to support 400,000 ha of improved upland rice over ten years would appear to be a more reasonable, and still ambitious, medium term target.

11.8. Valley swamps offer the potential of conversion to irrigated systems beyond the 20,000 ha already developed. Rehabilitation of the 5,000 ha which have deteriorated is justified. Conversion of 25,000 ha traditionally cultivated swamps to new irrigated perimeters based on stream diversion is justifiable over five years. Existing upland mechanized rice production in the savanna zone should probably be phased out.

11.9. The evolution of the various rice systems is summarized in Table 11.2. White rice production could more than double from 379,000 mt in 2011 to 923,000 mt by 2020. This will require a variety of institutional changes, including an enhanced system for the production and distribution of improved seed varieties, and a major effort to unlock production areas - through upgrading existing or opening new feeder roads, and improving transport conditions on the main networks. Such an expansion, some 10 percent per year, would be a major success, especially in comparison with the experience of the last 10 years. However, domestic production would remain only one-half of total consumption, still an improvement over the current level. Given that rice imports are likely to remain an essential component in meeting domestic demand, measures should be taken to reduce import costs resulting from excessive administrative costs, or limited competition.

Table 11.2: Indicative Plan for Economically Viable Rice Expansion

System		2011	2020
Rehabilitated Irrigated Type 4, 5A and 11	Ha cycle 1 Paddy Yield (t/ha) Ha cycle 2 Paddy Yield (t/ha) Tons paddy	30,000 4.0 16,000 5.0 200,000	30,000 5.0 30,000 5.0 300,000
New irrigated Type 5B	Ha cycle 1 Paddy Yield (t/ha) Ha cycle 2 Paddy Yield (t/ha) Tons paddy	5,000 3.5 2,500 4.0 27,500	25,000 4.0 15,000 5.0 175,000
Traditional Upland Type 1 and 6	Ha cycle 1 Yield Tons paddy	120,000 0.8 96,000	30,000 0.8 24,000
Improved Upland Type 2	Ha cycle 1 Yield Tons paddy	86,000 1.7 146,200	400,000 2.2 880,000
Mechanized Upland Type 8 and 9	Ha cycle 1 Yield Tons paddy	32,000 3.0 96,000	0 0 0
Traditional Inland Valley Type 3 and 10	Ha cycle 1 Yield Tons paddy	60,000 1.5 90,000	35,000 1.5 52,500
Upland - Animal Traction Type 7	Ha cycle 1 Yield Tons paddy	25,000 1.5 37,500	25,000 1.5 37,500
	Total Ha Total Paddy White rice Consumption	376,500 565,700 379,019 1,430,000	590,000 1,379,000 923,930 1,866,000
	Difference	1,050,981	942,070

12. FISHERIES: THE END OF AN ERA?

12.1. The fisheries sector appears to be in decline and the first question is whether it can be preserved at current levels. Exports of fish products – mostly canned tuna – are estimated at roughly US\$196 million in 2008, according to trade data from EU importing countries. Ivorian national statistics indicate somewhat lower levels for 2008, though similar or superior values were recorded in 2000-04. Fish exports are comparable to those for coffee in terms of total value, but considerably less in value-added terms since most of the raw tuna is purchased from foreign vessels fishing in Ivorian and regional waters. With rapid action on a variety of fronts, modest export growth may be possible, but the international tuna fishing industry is restructuring and time is running out for Côte d'Ivoire. The long-term growth of the sector will depend on better management of fish stocks, improvements in the business climate particularly related to port facilities, and limited import substitution driven by the artisanal fishery, and possibly aquaculture, for the large and growing domestic market for fish.

12.2. While the fisheries sector officially contributes only 0.2 percent to GDP, the actual contribution of the sector is substantially higher, as this estimate does not include fish caught by foreign vessels not based locally, transshipment activities, local fish storage, processing and distribution activities, or forward or backward linkages, such as port activities. The importation and distribution of fish for the local market is particularly important, as the domestic catch only represents about 20 percent of national consumption. The sector provides direct employment to over 70,000 individuals and indirectly provides livelihoods for 400,000 people. Fish is the main source of animal protein, representing 40 percent of total animal protein intake, with per capita annual fish consumption of 15kg. As is the case around the world, the fishery is under increasing pressure from international fleets, and management of this common property resource is proving very difficult. The potential for corruption is particularly high in this sector, and the 2002 crisis and its aftermath have further weakened its governance.

12.3. It may be necessary to reconsider official objectives in this sector. The proposed Master Plan for Fisheries and Aquaculture envisages rapid growth of the domestic fishery – including the industrial maritime fleet and aquaculture – to substantially increase the local availability of fish. With its modest domestic fish resources, limited experience in aquaculture, unprofitable industrial fishing fleet, considerable illicit fishing, and struggling tuna sector, more appropriate priorities for the country may be to: (i) improve sector governance; (ii) expand sustainable employment in and production from artisanal and intermediate fisheries; (iii) ensure growth of domestic value added; and (iv) secure the tuna canning industry. More effective sector governance could stimulate production for the local market, avoid a collapse of the tuna industry and make a resumption of growth more likely. With strong leadership and political commitment to change, sector growth could reach 5% annually over the next 10 years, (generating up to US\$100 million in accumulated incremental value added).

DOMESTIC FISHERY

12.4. The expansion of domestic fish production – and modest import substitution – is feasible. However, this will depend on better control of illicit fishing, improved domestic and regional resource management, and implementation of a policy framework for sustained small-scale fisheries. Development strategies for the domestic fishing sector may particularly focus on

artisanal fisheries expansion, targeting higher value products and markets. A modest domestic industrial fishery could be maintained by leasing or licensing foreign vessels, and exploring the feasibility of multi-purpose ‘intermediate technology’ fishing vessels. The proposed expansion of small-scale, coastal fisheries reflects the poor performance of the aging local industrial fleet. High domestic interest rates, a limited and poorly managed domestic fish resources, and low fish prices are virtually prohibiting investment in new industrial vessels. Given the nature of the resources, small-scale and ‘intermediate’ fisheries are the only ones that in the longer term have a reasonable chance of effectively and profitably supplying the local market with higher quality fish. Ultimately, the country should actively aim at developing an efficient ‘intermediate technology’ fishery to exploit its coastal fish resources, a development model that successfully created employment and attracted local investment in the Middle East and South and East Asia.

12.5. Current sector policies aim to increase the participation of Ivoirians. More effort should be made to train local fishermen and assist them in gaining experience in the occupation. At present, the artisanal fleet of 2000 pirogues consists mainly of unlicensed Ghanaian and Malian fishermen, many of whom have operated in the country for decades, and sometimes generations. Policies should encourage better integration of these actors into the local governance system (through licenses, local cooperatives, etc.).

12.6. While aquaculture does have future potential, its immediate role in satisfying domestic demand appears limited. The only large investment in the past failed due to the socio-political crisis of 2002. The options need to be explored carefully through pilot activities – and large public investments avoided - while the regulatory and legal framework is being defined, and supporting research and extension activities established.

THE TUNA INDUSTRY

12.7. Increasing the production and export of canned tuna and better utilization of the installed canning capacity (possibly doubling current production) requires improved fleet management and better control over tuna catches and prices, resolution of the current cash-flow problems and further improvements in port facilities and services. Maintaining a viable tuna industry in the country will require action on several fronts. Without such strategic action, the risks have increased that the industry may disappear, as happened recently in Senegal.

12.8. Abidjan is the largest tuna landing port in Africa and the second largest in the Atlantic. The tuna industry currently includes three canneries with total installed capacity estimated at 110,000 mt of tuna per year, but operating at an average of only 48 percent capacity utilization since 2005. Tuna canneries and seven tuna transshipment companies have duty free status. The canning activity forms only a modest segment – and not the most profitable one – in the highly competitive and rapidly changing global value chain for tuna. The main profits are made in marketing and distribution, which is dominated globally by three large conglomerates to which none of the Ivorian canneries are affiliated. The current EU custom tariff still favors ACP countries over the main competitor, Thailand, but this preference will likely decline over time. It will be completely lost in 2014 if the negotiations for an Economic Partnership Agreement with the EU are not successfully concluded. The tuna cannery in Ghana has recently been taken over by one conglomerate based in Thailand, which plans to expand this operation to serve the European market and reduce canning activities in France and Portugal. This strategy could

divert more of the Atlantic tuna catch to Ghana, and put further pressure on the Ivorian tuna canning industry.

12.9. The first pillar of the domestic tuna sub-sector strategy should aim to improve access to cheap raw material (frozen tuna). This requires action on three fronts. First, authorities should work with the International Commission for the Conservation of Atlantic Tuna to pursue more effective management of the key yellow fin, big-eye and skipjack resources, support better control of the number and capacity of fishing boats in the region and reduce the catch of juvenile tuna. This also implies strengthening regional monitoring, control and surveillance (MCS) capacity to reduce illicit fishing. Healthier tuna stocks in the mid-Atlantic region would reduce the catching costs per vessel and enhance the relative competitiveness of Atlantic Ocean tuna. Second, better fleet management would be essential to effectively reduce the prices of landed tuna. This would require close cooperation and reaching a *modus operandi* with the international tuna fleets operating in the region. Third, the country should exploit the advantage it enjoys in the port of Abidjan which has been the traditional operating base for the regional tuna fleet. Preserving this role will require strengthening client-friendly port policies, and ensuring a clear competitive advantage over competing ports.

12.10. The second pillar of the tuna sector strategy should aim to pursue strategic partnerships to expand the production base and secure access to markets. The country now has a very powerful and highly effective competitor next door. It will need to establish a strategic alignment with another influential international tuna or fisheries group in order to compete with the Ghana operation. This is already under way. Since the Thai company has obtained ownership of the Petit Navire brand, the other main French tuna company (Saupiquet) is now focusing its West African operations on Ivoirian suppliers and has sent a few of its fishing boats to the region. This should help secure an expanded supply of raw material and access to the French and German markets. In addition, using the framework of the EU fisheries agreement that favors the association of EU and local companies, sector policy should encourage private local investments in foreign tuna fleets, thereby vertically integrating the tuna delivery system and reducing dependence on individual vessels for supply.

12.11. To ensure global competitiveness of domestic tuna canning, the government has granted it special status (*regime franc*), including tax exemption and, to compensate for high utility costs, reimbursement of half of utility costs to the companies. However, between 2007 and 2010 virtually no restitution took place, while VAT reimbursements to the companies also suffered delays. In total, a reported CFAF 5.4 billion (US\$11 million) in refund payments from the Government was outstanding in mid-2010.⁴⁷ Next to the need for strategic action discussed above, this is the second most critical short-term issue, and further delays in addressing it may impair the future of one or more canneries. Analysis is urgently needed to determine whether the fiscal losses associated with the tax-free status and “*regime franc*” are justified by the local employment, value-added and foreign exchange earnings of the industry.

⁴⁷ Since then some payments have apparently been made.

SECTOR GOVERNANCE

12.12. **The sector is hampered by outdated and complex public institutions** which are unable to manage operational activities (statistics, extension services, fleet licensing, infrastructure management) or support the requirements of the private sector (strategic analysis and investment, fisheries education, social integration). Lack of understanding of global developments and sector risks, and incomplete, non-existent and fraudulent statistics at all levels increasingly hamper analysis of sector performance, encourage corruption, and impair decision-making. The public entities responsible for sector governance – the Ministry of Animal Production and Fish Resources, the Center for Oceanographic Research, and fisheries MCS under the Ministry of Transportation – require substantial strengthening of institutional capacity and funding. Funding has also been lacking for critical port infrastructure. However, ineffective use of available resources and corruption are also major concerns.

12.13. **In principle, the sector generates substantial annual public revenues** – import taxes on frozen fish estimated at US\$15-30 million, fees of US\$1-2 million, and EU financial transfers of almost €600,000 annually. Annual budgets for public sector institutions are small in comparison, and actual allocations are even less.⁴⁸ Effective fisheries governance is a critical public function which requires considerably more dedicated and reliable funding. Ultimately, the question of who should be responsible for long-term sector governance funding will require additional analysis of: (i) the future profitability and sustainability of local fisheries, fish imports, re-export and processing operations, and their ability to pay higher license fees; (ii) the level of future direct and indirect taxes and subsidies imposed on the sector; (iii) the real costs of effective sector governance; and (iv) the division of labor between the public and private sectors in running governance programs, such as quality control, research and even parts of MCS.

12.14. **The Government may allocate the financial compensation of fishing agreements and fishing licenses to the sector** to enhance public budget resources in the short term. However this approach should be linked to a more transparent use of and control over these funds. In the longer term, a dedicated resource management tax may be created – following the example in developed countries – which could dependably support research, MCS and other long-term management activities. The tax could also contribute to public investment projects for badly needed infrastructure improvements in the Abidjan and San Pedro ports, which may require a combination of public, private and foreign support.

12.15. **Lack of transparency has become a problem affecting sector governance at all levels.** Following the 2002 crisis, the country moved increasingly towards a rent-seeking model, whereby public and private parties sought to benefit from economic activities or the regulatory framework. In the fishery sector this is particularly apparent. An opaque financial management and statistical recording system has facilitated such behavior. Routine illicit fishing is not pursued on account of unreported payments to public authorities. Licensing procedures and fees paid by vessels, importers and exporters are also non-transparent. The authorities should take multiple steps to reduce the most visible and blatant examples, focusing on more transparent

⁴⁸ Out of the 2011 budget of CFAF11 billion, the Ministry of Fish and Animal Resources had only received CFAF300 million by November 2011 (admittedly an exceptionally difficult year).

licensing policies and practices, updating the legal and regulatory framework, upgrading accounting practices and sector statistics, and clarifying the responsibilities of institutions and how their budgets are used. Fundamentally, reducing the culture of corruption can only be achieved through leadership at the top of public institutions, greater transparency of public and private actions, independent observers' involvement in monitoring and the consistent enforcement of tough sanctions.

12.16. Efforts to control and reduce corruption are being made, but appear timid. The country may consider enhancing transparency by having parliament verify and approve the annual list of industrial fishing, processing, and import and export licenses issued to local and foreign parties, and other fees paid.⁴⁹ To improve control over public income and expenditures, it may introduce a temporary Transparency Office to manage and control the receipt and use of all sector license fees and the compensation payments of fisheries agreements, in accordance with agreed national budgets. This Office could also be temporarily responsible for controlling the validity of import and export licenses and sanitary documentation, improving the quality of catch statistics, and the effectiveness of MCS activities. Such an Office might report directly to the Ministry of Finance, and representatives of the private sector.

12.17. The creation of a formal Fisheries Sector Board, with representatives of the private and public sectors, may further aid the fight against corruption, and facilitate the strategic analysis and decisions needed in the tuna sector. It would enhance the participation of the private sector in other critical sector strategy discussions, and enable the necessary consensus-building on future sector financing.

12.18. The fisheries sector is unlikely to be a major source of growth in the near future, and it could well become a drag on the economy if the tuna canneries close down and the fish resource is further depleted. A careful assessment of the viability of the tuna cannery and the appropriate policy response is urgently needed. It would be a shame to lose one of the major formal sector industrial employers through sheer neglect. However, it will be far more unfortunate if the artisanal fishery is undermined due to excessive industrial fishing aided and abetted by corrupt officials. This fishery has the potential to generate substantial jobs and play an important role in supplying the expanding local market on a sustainable basis, but there is little time to waste if the errors of the past are to be reversed.

⁴⁹ This approach has been effective in Yemen.

13. WOOD INDUSTRY: TIME FOR A NEW STRATEGY

13.1. The wood industry has been a backbone of the Ivorian economy. In 2000, there were 140 sawmills spread across the country, which played an important role in the economy of many towns in the southern half of the country. In addition to producing a variety of products for the local market, the annual value of exports has averaged almost US\$300 million since 1975. The composition of these exports has gradually shifted to value-added products. Exports of logs from natural forests declined over the 1980s and ceased altogether in 1990 when a ban came into effect. These have been replaced primarily by exports of sawnwood, veneers and plywood, whose higher value has helped compensate for the declining volume of wood available. The export of teak logs is still allowed because these are produced on plantations. Furniture was being produced in the past, with small amounts for export, but this has succumbed to competition from Asia. In 1990, Côte d'Ivoire was the largest exporter of wood products in Africa, and it still accounts for one-third of African exports of veneers and plywood.

13.2. Market prospects are generally good for tropical wood. European demand for wood fell in 2009, due to the impact of the financial crisis on the construction industry. But this is expected to be temporary. There is also a significant trade in wood products for the domestic and regional markets, much of which is not captured by available statistics. Senegal is an important market, and Nigeria could be. Official data do not report exports to Burkina Faso or Niger, but it is well known that there is a flourishing informal trade with these two countries. Meanwhile, production for the local market is likely to reach or surpass 350,000 m³ although officially it is estimated at only one-quarter of this amount. One can anticipate a boom in demand from the domestic construction industry once the political crisis passes.

13.3. Nonetheless the wood industry now faces a turning point, if not a crisis. The annual supply of logs has fallen from 5 million m³ in the 1970s to about 1 million m³ in 2011. More and more classified forests are being opened to farming, with little attempt to manage the process, while other forests are under increasing pressure as farmers search for land or firewood. The number of sawmills has dropped to 55, many of these mills are small and it is likely that more will be forced to close in the next five years. The volume of exports has fallen steadily between 1995 and 2005. The value of exports followed suit, dropping to US\$150 million in 2002 before a temporary surge in world prices restored exports to about US\$300 million in 2006-8. Clearly, this industry will not be a significant source of growth in the coming years. Indeed, the first priority is to ensure its survival. However, with quick action and a judicious mix of policies, it should be possible to maintain a vibrant wood industry, preserve important jobs in small towns, and even generate modest growth. Alternative sources of raw material exist, there is an experienced skilled labor force, and a subset of private operators is relatively efficient and could remain competitive.

13.4. The first challenge will be to establish a sustainable level of exploitation of natural forests, and then enforce it. A new survey of the available resources is necessary, but the annual limit should almost certainly be less than 1 million m³. However, the Ministry of Water and Forests and the parastatal SODEFOR (Forest Development Company) have proven incapable of protecting the forest resource and both require urgent reform.⁵⁰ In general, this

⁵⁰ See World Bank, Côte d'Ivoire: Country Environmental Assessment, 2010.

sector is notorious for weak governance, which worsened during the crisis of the last ten years, and this will have to be addressed very soon if the remaining forests are to survive. Lessons could be drawn from the more rigorous process for allocating logging rights in Ghana, which faces similar resource constraints.

13.5. The next challenge will be to improve the management of plantations, which are destined to play a growing role if the sector is to prosper. Since 1994, logging companies have been obliged to replant areas they have logged, and to maintain them for three years before turning them over to the original owners of the land. Thus some 200,000 ha of plantations already exist (of which 38 percent is teak) and these could be expanded to produce another 500,000 m³ of wood per year. Here too SODEFOR's performance has been weak. It has behaved more like a commercial operator than as a manager of public resources; its own logging operations have exceeded authorized levels and trees have been cut prematurely. Greater reliance should be placed on private operators who have an incentive to manage their plantations sustainably, while SODEFOR could concentrate on regulating their activities.

13.6. Relations with rural inhabitants will have to improve. They cannot, and should not, be prevented from using the forests. Instead villagers need to be involved in the protection of the forests and to reap tangible benefits from them. The rights and responsibilities of concession holders, private investors, communities and farmers all need to be more clearly defined. Land tenure is a critical issue for both natural forests and plantations, which requires urgent attention if private investors are to be attracted while at the same time the legitimate concerns of rural inhabitants are addressed. Pilot programs could be launched first in degraded classified forests and land with poor agricultural potential, before tackling more difficult contexts. Resolving the land tenure issue could unleash significant investment in tree plantations.

13.7. The fall in the number of sawmills will help reduce demand pressure on the resource, though this is being undermined by the issuance of new licenses, few of which seem justified.⁵¹ The number of mills and their geographic areas of operation must be recalibrated as a function of the available resource, most likely leading to further consolidation of the industry. The above-mentioned inventory of forest resources must be supplemented by an audit of the industry to identify viable operations and facilitate informed investment decisions.

13.8. The surviving firms will need to adapt to the changing nature of the available raw material. Even if properly managed, plantations will yield wood of smaller diameter than the traditional natural logs, often massive in size, and few companies have the appropriate equipment. Firms will need to learn how to use some species which at present are not used at all. In principle, greater value added could be generated from teak logs if they were processed locally, but that too will require new investment and innovation. Not surprisingly, very little investment has taken place during the last ten years of crisis. Effective implementation of the investment code will be important to encourage necessary investment once the political situation stabilizes.

13.9. Another alternative is that of rubber wood. The rubber industry is booming in Côte d'Ivoire and is expected to continue growing quickly in the coming years. After 25 years or so,

⁵¹ Some 20 new licenses have been issued since 2005, though half of them were not yet operational in 2010.

rubber trees need to be replaced, and there is already a significant stock of old trees that have reached this stage. By 2020, it is estimated that 250,000 m³ will be available annually. Côte d'Ivoire could follow Malaysia which has already developed a major industry based on rubber wood. However, at the moment such an initiative would have to compete with the production of rubber wood chips for biofuel, for both domestic use and export to Europe where important incentives exist to expand the use of biofuel. At the low freight costs in effect in 2010, this alternative appears more profitable. However, this calculation could change if freight rates return to the levels which prevailed in 2008 before the global financial crisis.

13.10. In the short term, the most interesting option is the importation of logs and sawnwood from Liberia, and perhaps from Central Africa. Liberia has the largest remaining forests in West Africa and its current capacity to process them is very limited. Consequently, they will need to export logs for many years to come, even if their long-term strategy is to move to value-added processing. And these logs correspond to the current technical capacity of Ivoirian factories. Even after Liberia begins to process logs, much of their output will remain at the stage of sawnwood for the medium term. There would thus seem to be a perfect fit with Côte d'Ivoire's excess capacity, potentially supplying 1 million m³ annually, or the equivalent of two-thirds of current domestic supplies. The example of Vietnam proves that such a model can work, for it has become the second largest exporter of wood products in Southeast Asia even though it imports 80 percent of its raw material.

13.11. Road and sea links with Liberia are currently poor. However, barges used to pass regularly between Liberia and the port of San Pedro and it should be possible to restart such a service. This will require a concerted effort on the part of port authorities and customs to facilitate this trade. Past efforts to import logs have fallen victim to the rigidity of customs rules. When duty-free temporary admission has been used, firms have been taxed on the waste and by-products not exported. In some cases, exporters were told not to combine wood from Ivoirian and non-Ivoirian sources in the same shipment. In principle, raw materials such as logs should now be traded duty-free between ECOWAS member states, thereby resolving the first problem. There is no obvious justification for the second ruling. Clearly, a concerted effort is required on the part of public authorities to facilitate the development of a new import-based wood products industry. This will also require an effort on the part of private investors to improve the efficiency of their operations since the logs will be more expensive than their traditional source of supply.

13.12. Another challenge facing the private sector are the tougher standards being applied in European markets to ensure that their wood imports are procured in a sustainable and legal manner. The most important one at the moment is the Forest Law Enforcement, Governance and Trade (FLEGT) process. This involves a voluntary negotiation between the EU and the exporting country and the signature of an agreement covering the commitments made by the latter to prevent illegal trade. It also describes the process whereby the exporting country issues certificates of conformity. Ghana ratified such an agreement in 2009 and Liberia has started negotiations. Côte d'Ivoire initiated the process in late 2009 and it will be important to complete it as soon as possible. Additional standards related to sustainability, and requiring traceability, are likely to gain in importance in the coming years.

13.13. Many workshops have been held recently to discuss the plight of the wood industry and long lists of measures have been prepared, but with little or no follow-up. Time is running out for this industry, and yet a viable future is still possible. A combination of sustainable management of the remaining natural forest, log imports gradually replaced by expanding plantations, and supplemented by rubber wood, could raise the available annual supply of raw material from the current level of 1 million m³ to 2-2.5 million m³. Clearly a consensus is needed on a realistic set of top priority actions which will receive immediate attention. Our analysis suggests the following:

- The most critical demand would appear to be easy access to imported logs and sawnwood from Liberia, including the adoption of legal texts to facilitate such importation;
- Next is the need for an audit of the available resources and processing capacity to guide the restructuring of the industry;
- A new and more rigorous process for allocating logging rights, perhaps along the lines applied in Ghana;
- Private plantations should be promoted, accompanied by resolution of land tenure issues and a gradual withdrawal of SODEFOR;
- An audit of SODEFOR is needed, to be followed immediately by reforms which address entrenched weak governance and refocus its mandate on regulation of the private sector;
- A FLEGT agreement must be negotiated with the EU to protect access to this profitable market;
- The regulatory framework needs to be updated to reflect current realities (Forest Code, Law on Land Ownership, Forestry Policy);
- Declare the preservation of the forest as a national priority and prevent the degradation of protected areas;
- Renew forestry research;
- Study the options to create a forestry development fund financed by all actors in the sector.