

ESSD AFRICA

THE RISE OF GHANA'S PINEAPPLE INDUSTRY

From Successful Takeoff
to Sustainable Expansion

by

**Morgane Danielou
Christophe Ravry**

NOVEMBER 2005

November 2005

Abstract

In the last 10 years, Ghana has made considerable progress in the development of its horticulture export industry. Today, the country has the potential to become a world leader in horticulture production, being already a champion in pineapple exports. Between 1990 and 2004, pineapple exports grew from virtual inexistence to 68,000 tons, becoming Ghana's first horticulture export product. However, this success was not a predicted achievement. After positioning its production in the low-end European market, where Ghana defied its competitors with a low-cost approach, the country was soon losing ground against new competitors and market changes. The industry had to face this serious crisis and take on these new challenges. A new market strategy was thus adopted by the industry founded on adaptability, diversification, and innovation. Ghana diversified toward other high-demand horticultural produce, such as fresh papaya, mango, and Asian vegetables, and facilitated the development of processed goods for export, in particular, sliced pineapple for fruit salads. These events have dramatically transformed the lives of growers and inversely contributed to the development of a new segment of the agricultural sector, whose dynamism now attracts significant investment. The country now faces important market changes, led in particular by the quick adoption in global markets of the new pineapple market variety, the MD2.

This paper analyzes the strategies Ghana has adopted to develop its horticulture sector, gain greater market access, and become a leader in global markets. It presents the protagonists and their respective roles and focuses on the production and marketing innovations that were adopted at different moments to remain competitive and adapt to the new market context. Finally, it proposes lessons to be learned from Ghana's initial success and suggests new challenges the country will have to face to maintain its performance and position.

The Africa Region Working Paper Series expedites dissemination of applied research and policy studies with potential for improving economic performance and social conditions in Sub-Saharan Africa. The series publishes papers at preliminary stages to stimulate timely discussions within the Region and among client countries, donors, and the policy research community. The editorial board for the series consists of representatives from professional families appointed by the Region's Sector Directors. For additional information, please contact Momar Gueye, (82220), Email: mgueye@worldbank.org or visit the Web Site: <http://www.worldbank.org/afr/wps/index.htm>.

The findings, interpretations, and conclusions in this paper are those of the authors. They do not necessarily represent the views of the World Bank, its Executive Directors, or the countries that they represent and should not be attributed to them

Authors' Affiliation and Sponsorship

Morgane Danielou, formerly a junior professional associate at the World Bank (Rural Development, Africa Region, AFTS3) is currently a communication specialist at the International Food Policy Research Institute.

E-mail: m.danielou@cgiar.org

Christophe Ravry is an agribusiness specialist at the World Bank (Rural Development, Africa Region, AFTS4). At the time of writing, he was based in Ghana as part of the Horticulture Export Industry Initiative.

E-mail: cravry@worldbank.org

Morgane Danielou, Junior professional associate, Rural Development,

The World Bank m.danielou@cgiar.org

Christophe Ravry, Agribusiness specialist, Rural Development

Cravry@worldbank.org

Acknowledgement

This paper was written by Morgane Danielou and Christophe Ravry. It is based on a World Bank *Ghana Horticultural Sector Development Study*, by Jean-Michel Voisard and Peter Jaeger (ESSD Africa, and on information the authors collected during field visits and interviews in Ghana in 2004 and 2005 authors would like to warmly thank Jean-Michel Voisard for endlessly sharing his in-depth knowledge analysis provided in this document owes a lot to him. The authors would also like to sincerely thank Antoine (World Bank, AFTS4) for thoroughly reviewing, updating, and providing precious input to the docu

This project was undertaken under the supervision of Patience Mensah (AFTS4, task leader, World Bank) and Patrick Labaste (AFTS4, task leader, World Bank). The authors would like to express their gratitude to M Agboka (Ministry of Agriculture, Extension Services, leader of the Horticulture Export Industry Initiative) for coordinating the field research and sharing his expertise; Noel Chabeuf (AFTS4, task leader) for funding the project; and Mary Barton-Dock (AFTS4, sector manager) for her continuous support.

¹ Please see annex 1 for a list of people interviewed.

Table of Contents

ABSTRACT	7
AUTHORS' AFFILIATION AND SPONSORSHIP	
ACKNOWLEDGMENTS	9
LIST OF INITIALISMS	11
MAPS OF GHANA	13
INTRODUCTION	15
1. "PRODUCING SOMETHING FOR NOTHING": HOW GHANA ENTERED THE PINEAPPLE EXPORT INDUSTRY AND BECAME THE LEADER OF THE LOW-END MARKET	17
Capitalizing on an air-freight cost advantage	19
From air to sea	21
The European market	23
Ghanaian production: From fresh fruits to local processing	24
2. THE GHANAIAN PINEAPPLE INDUSTRY STRUCTURE: GROWTH DRIVEN BY THE PRIVATE SECTOR	27
The smallholders and the outgrowers	28
Cooperative, or farmer-owned, model	32
Medium-sized to large companies	35
3. LESSONS FROM GHANA'S EXPERIENCE IN THE PINEAPPLE SECTOR: SUCCESS FACTORS.	39
Ghana's market positioning	39
Cohesive exporter groups, active professional organizations, and infrastructure	40
Public support: Donor- and government-supported initiatives	44
Ministry of Food and Agriculture	44
Development agencies	44
Most recent donor-funded activities	46
4. PINEAPPLE PRODUCTION AS A CATALYST TO THE DEVELOPMENT OF THE HORTICULTURE EXPORT INDUSTRY	50

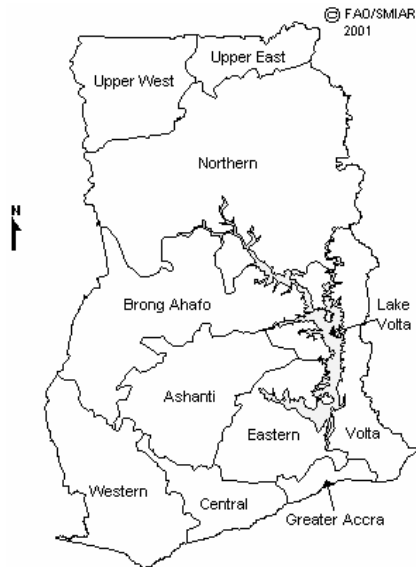
Identification of high-potential crops	50
In the fruit sector	50
Papaya	51
Mango	52
Citrus	55
In the vegetable sector	56
Asian vegetables	57
Chili	58
Yam	58
Flowers	59
5. HOW SUSTAINABLE IS THE LOW-END SEGMENT? ADAPTING TO CHANGING CONDITIONS IN THE MARKET FOR HORTICULTURAL GOODS	59
Facing the competition	60
Brazilian papaya	61
Seasonal competitors in Mango	62
Maintaining the freight cost advantage	63
Product development: How the MD2 variety changed the pineapple world	64
Improving supply chain logistics	69
The continuous cold chain	69
Pre- and postharvest management	70
Food safety and quality management	71
Quality	71
Complying with quality standards: EurepGAP	72
6. GOING FOR “GOLD”	74
Revising Ghana’s market position	74
Lessons from the pineapple and mango sectors	75
Public-private partnership	75
Technology and innovation	76
CONCLUSION	77
ANNEX 1: LIST OF PEOPLE MET	79
ANNEX 2: BIBLIOGRAPHY	81
ANNEX 3: USEFUL LINKS	85

LIST OF ACRONYMS

ADB	Agricultural Development Bank
AgSSIP	Agricultural Services Support and Investment Program
AMEX	American Experience
APEX	Agency for the Promotion of Exports
BeNeLux	Belgium, Netherlands, and Luxembourg
CF	Compagnie Fruitière
COLEACP	Europe-Africa-Caribbean-Pacific Liaison Committee
COMAFIN	Commonwealth Africa Investment Fund Limited
EPA	Environmental Protection Agency (Ghana)
ESSD	Economically and Socially Sustainable Development
EU	European Union
EurepGAP	European Good Agricultural Practices
FAGE	Federation of Ghanaian Exporters
FDI	foreign direct investment
FDMP	Fresh Del Monte Produce Incorporated
FGL	Farmapine Ghana Limited
GAP	Good Agricultural Practices
GEPC	Ghana Export Promotion Council
GoG	Government of Ghana
GTZ	Gesellschaft für Technische Zusammenarbeit—a German government agency for international cooperation
HAG	Horticulture Association of Ghana
HEII	Horticulture Export Industry Initiative
IFDC	International Center for Soil Fertility and Agricultural Development
MFAG	Mango Farmers Association of Ghana
MNC	multinational corporation
MOFA	Ministry of Food and Agriculture
MSU	Michigan State University
PIP	Pesticide Initiative Program
PPP	Power Pineapple Growers
SME	small to medium-sized enterprise
SPEG	Sea-Freight Pineapple Exporters of Ghana
SSA	Sub-Saharan Africa
TIRP	Trade and Investment Reform Program
UBA	Union Bananière Africain
USAID	United States Agency for International Development
VEPEAG	Vegetable Producers and Exporters Association of Ghana
WB	World Bank

MAPS OF GHANA

Map 1. Ghana—administrative divisions



Map scale: 1 cm = 70 km
Source: NC.GIA SB UNEP-GRID Sioux Falls

Source: www.fao.org/giews/french/basedocs/gha/ghaadm1f.stm.

Map 2. Ghana—major towns and cities



Source: www.ghanaweb.biz/GHP/img/pics/12307026.gif.

INTRODUCTION

In the past 10 years, Ghana has experienced significant growth in its exports of fruits and vegetables. Between 1980 and 1998, exports grew 14-fold, from US\$1.8 million to US\$26.8 million. Furthermore, between 1997 and 2004, the total volume of Ghana's exports more than doubled. Among these goods, pineapple represents the most significant growth commodity, reaching the export number of 70,000 tons—roughly US\$22 million—in 2004. Ghana thus became, along with Côte d'Ivoire and Costa Rica, one of the more important suppliers of pineapple to the European market. This presence is all the more striking considering Ghana's recent entry in this competitive market.

Ghana gained a foothold in the European market by targeting the discount segment of the northern European market and competing on price. Its exporters relied on an initial air-freight cost advantage—at the time the lowest in the subregion—to underprice their competitors. That advantage, however, was quickly undermined in 1996 when that very market began to be flooded by a South American variety from Del Monte—MD2. This sweeter and more savory pineapple has benefited from an extensive combination of research and development, supply chain improvement, and marketing by large multinational corporations, the likes of Del Monte and Dole.

It now appears that Ghana's principal competitor in the European market is not its close neighbor Côte d'Ivoire, but rather Costa Rica. To maintain its current market position and in light of the increasingly global agrofood market, Ghana must look to develop a competitive advantage over its rivals. Its producers, including large farms and smallholders, are now reassessing their production strategy in response to market changes.

A number of multinational corporations—Del Monte, Dole, Compagnie Fruitière, and others—are currently investing in Sub-Saharan Africa. In the case of Ghana and contrary to many assumptions, the production system associated with large, commercial foreign-owned farms did not have a role in the development of the horticulture industry. On the contrary, Ghana is an example of a country that was able to link up small-scale production systems to a very demanding and rapidly changing market dominated by a few players. Its competitiveness for the past 10 years was founded on its strategic choice of a market segment, namely the low-end market of discount retailers in northern Europe. This is now changing with the advent of “Ghana Gold”—Ghana's response to the MD2 development.

As the market evolves at a fast pace with product development (MD2), what kind of evolution will be necessary for Ghana to maintain its market share? Will Ghana's small producers be able to embark on the MD2 journey? How will national companies and small growers compete against large-scale commercial companies?

This paper analyzes the lessons, may they be successes or failures, to be drawn from Ghana's 10 years of experience in the horticulture sector. It highlights the strategies the

country adopted to achieve success and suggests current and future challenges the country already faces. Because Ghana's experience in horticulture was initiated with pineapple, the paper focuses primarily on that commodity.

The paper first presents a chronological approach describing the different phases of development of the pineapple industry. Second, it introduces the main actors and their respective roles. Third, it highlights the factors of success that can be distinguished in Ghana's experience. Fourth, it presents the new challenges that the sector faces and the new conditions of the market. Fifth, it envisions the successful strategies that could be put in place to secure Ghana's competitiveness in the global market. Finally, it outlines the main areas in which the country successfully invested and draws lessons from those strategies.

1. “PRODUCING SOMETHING FOR NOTHING”: HOW GHANA ENTERED THE PINEAPPLE EXPORT INDUSTRY AND BECAME THE LEADER OF THE LOW-END MARKET

The world pineapple market is massively geared toward export, with 36 percent of the world’s production of pineapple, or 5 out of 14 million tons, market exported. Processed pineapple products, such as juices, largely dominate this market, accounting for 80 percent of the trade. The market for fresh pineapple, however, has grown rapidly. Imports of fresh pineapple in the European market quadrupled between 1980 and 2002, from 90,000 tons to 370,000 tons. The exports of fresh pineapple are divided between Latin American and Sub-Saharan African exporters. Asian producers, who also produce a significant amount of the fruit, tend to specialize in processed products. The two main markets for imports are the United States and the European Union.

Before the arrival of the MD2 variety in Europe, two categories of pineapple dominated the market: air-freighted, expensive, “extra sweet” pineapples and sea-freighted, cheap, “less savory” pineapples.

BOX 1. A BRIEF HISTORY OF PINEAPPLES

Native to Central and South America, pineapples are now grown in tropical regions of Asia, Latin America, and Africa. More than a hundred varieties of pineapple exist; however, international trade is mostly restricted to a few because of transportation constraints—only a few leading types travel well (Cayenne and Victoria).

The main groups include the following:

- Cayenne—big, cylindrical, deep orange fruit with flat eyes and a light yellow flesh. Its taste is sweet-sour. Smooth Cayenne is the most common variety worldwide, both for processing and fresh eating.
- Queen or Victoria—small, conical, yellow fruit with pronounced eyes and a yellow flesh. Sweet and very aromatic, this variety is often used for growing “baby” pineapples.
- Sugarloaf—large, heavy, and mildly sweet.
- Pernambuco—sweet and medium-sized.
- Variegated—sweet, white fleshed.
- Baby—very sweet.
- Red Spanish—medium-sized, purple-hued skin and light yellow flesh.
- New varieties—the MD-2 is particularly rich in vitamin C and does not contain much acid.

In Ghana, the dominant variety is the Smooth Cayenne.

Harvesting: Fresh pineapples are available year-round, with the peak period between March and July. They do not ripen after harvest and are therefore difficult to export. They are generally picked by hand. A first harvest takes place after 18 months, then a second

after another 15 to 18 months. As they are particularly sensitive to cold temperatures, pineapples should be kept above 8 degrees centigrade.

Nutritional highlights for pineapple (raw), one cup (155 grams), sliced:

Calories: 76

Protein: 0.60 grams

Carbohydrate: 19.2 grams

Total fat: 0.667 grams

Fiber: 1.86 grams

Vitamin C: 23.8 milligrams

CAPITALIZING ON AN AIR-FREIGHT COST ADVANTAGE

Ghana began exporting pineapple to Europe in very small quantities at the end of the 1980s.² In 1993, however, a group of exporters, in search of a significant scale of export, ventured to establish a pilot pineapple plantation with seeds imported from Côte d'Ivoire. Beyond similar agroclimatic conditions with their neighbor, they possessed an air-freight cost advantage dependent on three factors: availability of northbound freight capacity, variety of destinations, and efficient ground-handling services. The overall cost saving in Ghana when compared to costs incurred by Côte d'Ivoire amounted to US\$0.15 per exported kilo.³ At the time, pineapples were entirely exported by air.

The first critical advantage, availability of northbound freight capacity, came as a result of liberalization implemented by the country's president then Jerry Rawlings. Ghana, at the time, was able to export more tons per day than Côte d'Ivoire and Senegal.

The second advantage, variety of destinations, was due to the diversity of airlines that use the Accra platform—again an advantage that stems from the liberalized environment. Most European destinations were covered by passenger services, particularly the United Kingdom, Belgium, the Netherlands, Luxembourg, Germany, Italy, France, and Switzerland. By comparison, Abidjan shippers were limited to Air France's and SN-

² The first companies to export were Combined Farms and Koranco Farms.

³ Jean-Michel Voisard and Peter Jaeger, *Ghana Horticulture Development Study*, ESSD Africa, World Bank, Washington, D.C., 2003, 40.

Brussel’s services. Senegal did not have direct flights into the United Kingdom or the Netherlands.

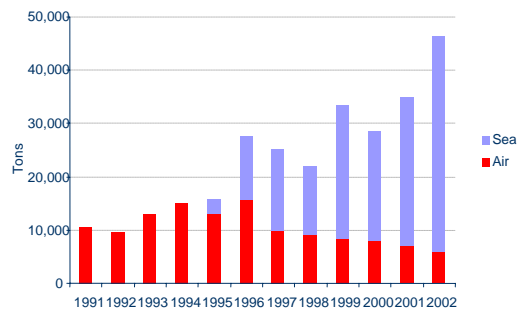
The third advantage—efficient and, more important, predictable ground-handling services—set Ghana apart from its neighbors. In Ghana, a multitude of charter companies were allowed to compete and thus offer competitive prices, whereas Ghana’s neighbors were bound to the monopolistic practices of the now defunct carrier Air Afrique.

The combination of these three factors led to the rapid expansion of pineapple production in Ghana at the end of the 1990s. By 1996 production had reached 27,000 tons—up from 10,000 tons in 1991—and that would increase to an even higher number at the end of the decade due to the advent of sea-freighting.

FROM AIR TO SEA

Prior to 2001, Côte d’Ivoire was the main hub for shipping fruit by sea from West Africa to Europe. In 2001, however, political instability and drought brought about a 50 percent decline in its exports. That sharp decline in production left Cameroon—a banana exporter as well—the leader in Sub-Saharan Africa and the largest supplier to the European Union. Between 1996 and 2001, exports of bananas increased from 170,000 tons to 218,000 tons.

Within the country, freight shipping is organized (UBA). UBA charters reefers and regroups the two and Del Monte. Since 1996, UBA’s charter reefers have regularly been stopping in Ghana to load pineapples in the high season and 100 pallets in the summer. A minimum of 230 pallets is required to call the vessel to port. Pineapples and bananas require the same shipping conditions—refrigerated in either a container or in the hold of a vessel. As such, the combination of greater demand for bananas in 2001 and the gradual growth of pineapple supply led to a sharp increase in freight pineapple exports (see figure 1 and table 1). In the past two to three years, weekly shipments have grown steadily, reaching 1,300 pallets in 2002, 1,500 pallets in 2003, and 1,800 pallets in 2004 during the peak season (October through December)—a volume increase now sufficient to ensure that two vessels stop in Ghana every week. The vessels discharge at both Mediterranean and northern European ports.



Source: Voisard and Jaeger, *Ghana Horticulture Development Study*.

⁴ A standardized platform or open-ended box, usually made of wood, that allows mechanical handling of bulk goods during transport and storage.

Table 1. Volume of pineapple exports by sea and by air

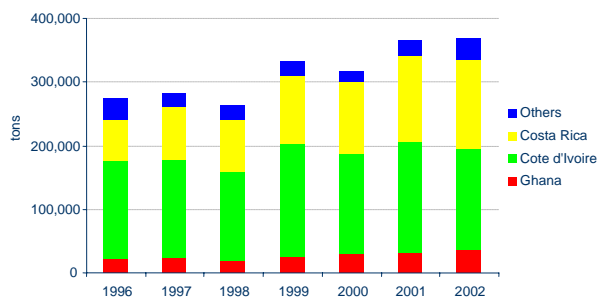
Pineapple (tons)	1997	2002	2004
Air	12,000	6,000	20,000
Sea	15,000	40,000	48,000

Source: Voisard and Jaeger, *Ghana Horticulture Development Study*, and SPEG for 2004 figures.

THE EUROPEAN MARKET

In 2004, the total volume of pineapple imported into the European Union was about 400,000 tons, a 54 percent increase from 1997 (see figure 2).⁵ That same year Ghana exported a total of 70,000 tons of pineapple. The European Union represents the only destination for Ghanaian pineapple, and although Ghana's entry was significant, its exports represent a mere 12 percent of the total import market. Côte d'Ivoire and Costa Rica remain the dominant players. The main destinations for Ghanaian pineapple within Europe are Germany, Italy, Belgium, and the Netherlands (see table 2).

Figure 2. EU imports of pineapple



⁵ Voisard and Jaeger, *Ghana Horticulture Development Study*, 26.

Source: Voisard and Jaeger, *Ghana Horticulture Development Study*.

Table 2. EU importing countries

Country	Tons 2002
Germany	16,464
Italy	9,351
Belgium	8,784
Switzerland	4,597
France	1,985
Netherlands	1,606
Denmark	1,621
United Kingdom	751
Others	1,232
Total	4,6391

Source: Jacques Trienekens, James Hagen, and Sabine Willems, “Innovation through International Supply Chain Development: A Case Study,” Management Studies Group, Wageningen University, 2004, www.ifama.org/conferences/2004Conference/Papers/Trienekens1003.pdf

GHANAIAN PRODUCTION: FROM FRESH FRUITS TO LOCAL PROCESSING

Pineapple cultivation in Ghana is currently mostly located in the west and northeast of Accra, within 75 kilometers of the city. The fruits are harvested throughout the year, with April considered the peak month. The midyear rainy season—June to September—is a poor time for fruit quality; as a result, planned production and export are lowered at that time.

Local demand for pineapple is high, but, as with most fruits, it is inaccurately priced, often not accounting for the costs of production during the peak harvest season. In addition, the prospects of selling in regional markets have not been explored and the trade that does take place is not recorded. Until now, all pineapples for export have been of the Smooth Cayenne variety. The Sugarloaf variety, which cannot be transported, was and is still grown and sold to the local market. Table 3 shows data on the pineapple export sector.

Table 3. Pineapple exporters and markets

Est. 2002 Prod. (tons)	2002 Exports (tons)	FOB Value ^a (US\$)	No. of Exporters	Top 5 Exporters (percent share)	Main Destination	Local Processing	Production Trend and Prospects
80,000	Sea 40,000 Air 6,000 Proc. 15,000	13,500,000 2,020,000	56	<ul style="list-style-type: none"> ▪ Jei River ▪ Farmapine ▪ Koranco ▪ Milani ▪ Prudent <p>A total of 57 percent</p>	Germany Italy BeNeLux	Fresh cut Juice Canning	Continued growth anticipated but Costa Rica may take market share

Source: Voisard and Jaeger, *Ghana Horticulture Development Study*.

^a GEPC valuation.

Pineapple benefited from government and donor support through their efforts to promote agricultural diversification. It is now the leading horticultural crop in Ghana. After the expansion of exports, production, which was originally entirely of fresh fruits, moved to processed products. Local processing includes

- preparation of fresh-cut pineapple at Blue Skies, Tongu Farms, and First Catering;
- preparation of fruit salad at Blue Skies;
- juicing at Blue Skies, Milani, and Athena for export; and
- juicing in local factories for domestic consumption.



Cut and prepack pineapple slices from Tongu Farms.

©Tongu Fruits

The share of fresh fruit exported is still much higher than that of processed goods, though local manufacturing is expected to increase. For example, sliced pineapple is sent to Europe either directly to retailers or for further processing into fruit salad. It is expected that soon such processing will be undertaken in Ghana and shipped ready-to-eat to European destinations. The prospect of the potential margins to be gained from minimal

processing is a strong incentive for companies. Furthermore the anticipated continued growth in production combined with the need for producers to get a minimum value for fruit that does not meet the export requirement will provide strong incentives for investment in additional processing capacity.

2. THE GHANAIAN PINEAPPLE INDUSTRY STRUCTURE: GROWTH DRIVEN BY THE PRIVATE SECTOR

In recent years, pineapple has become one of Ghana's specialty products. The sector's growth has been driven principally by innovative entrepreneurs in the private sector. Although pineapple farming and exporting still attracts businessmen in search of quick money, the industry is getting more mature with the emergence of a larger number of regular exporters. In 2000, the top five exporters accounted for 72 percent of sea-freight exports; this figure has come down to 49 percent in 2004. The five top exporters are Jei River (6,431 tons), Farmapine (4,766 tons), Milani (4,503 tons), Prudent (3,820 tons), and Georgefields (2,890 tons). Substantial investments have also been made by smaller players, such as Tongu Farms in the Volta region and Bomarts, with the prospect of rapidly increasing their production.

The Ghanaian pineapple companies operate under different business models, ranging from medium-sized local companies to cooperatives to joint ventures. They also operate at different stages of the value chain; some are producers, others are processors and exporters. We even find some players who manage to integrate all these activities into their operations. The lone player that had, until recently, been missing from the picture is the international agribusiness corporation, though that situation changed in 2004–2005 with the arrival in Ghana of the multinational Compagnie Fruitière, locally registered as Golden Exotics.

While the diversity of players seems to have stimulated internal competition that serves to enhance the dynamism of the sector, large-scale foreign investment will prove to be a challenge to other exporters as they will now have to measure up to highly professional farm practices and state-of-the-art logistics.

THE SMALLHOLDERS AND THE OUTGROWERS

Despite the high concentration of activities among large pineapple-exporting producers, smallholders, because of their sheer size in number, represent an important group. The bulk of their production is geared toward the local market and is also informally sold to large farms. In Ghana, smallholders and outgrowers are distinguished though they both typically cultivate from one to 20 acres of land and often have limited access to inputs, mechanical equipment, and training.

Outgrowers enjoy a somewhat formal relationship with the larger exporting and processing farms. They are subcontracted—often without the signing of a legal contract—by larger companies to furnish a regular supply of fruit. The company, for its part, advances the smallholders' inputs in the form of seeds, chemicals, and cash advances. Upon receipt of the fruits, the company pays the outgrower minus the cost associated with the inputs. This arrangement is often blamed by both parties: the outgrowers complaining about the smaller prices given to their produce, the companies complaining about the former defaulting at the promise of higher prices outside the agreement.

Smallholders represent the whole group of small-scale and family producers. They are not tied to an arrangement with a company. Their number is not known and fluctuates as pineapple production, a short-cycle crop, tends to attract opportunistic players. Their production is absorbed by the local market and by processors and exporters who turn to them whenever they need to increase their production volumes. Frequently but not systematically, they find the export market closed due to the low quality of their product. Moreover, when offered access to this market the price received is often too low and the payment cycle too long. It is clear that there is an absence of a functioning and regularized model that could create an environment of trust through transparency and price information.

It is also important to note that Ghana's pineapple sector is particularly well suited for the small-scale farmer. The initial investment is minimal; it requires primarily labor and farm tools. Suckers⁶ are also readily available on other farms and can be purchased throughout the year. Finally, the proximity of pineapple-growing regions to urban centers facilitates access to the necessary agrochemicals.

⁶A secondary shoot produced from the base or roots of a woody plant that gives rise to a new plant.

BOX 2. POWER PINEAPPLE GROWERS—DISTRICT OF DODOWA (DAMGBE WEST DISTRICT, GREATER ACCRA)

In 2002, 11 smallholders in Dodowa—a district 50 kilometers northeast of Accra—formed Power Pineapple Growers (PPP), an association to facilitate the production of pineapples. As the residents of the district were traditionally stonecutters, their farm production was mainly used for self-subsistence—the production was limited to tomatoes, maize, and cassava. Their interest in pineapple production came as both a reaction to the lack of opportunity in the stone market and the success of a nearby district that recently began producing the fruit. In addition, the district of Dodowa is particularly well adapted to pineapple production because of its agroclimatic conditions and its proximity to Accra’s ports.

The first harvest was in 2003. Out of the 3,000 pieces harvested, 80 percent were exported and the remaining 20 percent were sold on the local market. Armed with this initial success, the group acquired three more acres—they had until now used five acres. In 2004, they harvested 8,000 pieces of fruit. An Accra-based exporter bought the whole production. They are now planning to expand their production to incorporate the 11 acres available in the zone. The members of the association were startled by the result of these first two campaigns.

Pineapple production has contributed significantly to the improvement of the lives of the Dodowa community as well as those of its neighbors. With revenues received from the sales, the members of the association, were able, among other things, to pay their children’s school fees on time and improve their nutrition. They were also able to provide assistance to a neighboring association, Truth Growers. Using the expertise that stemmed from their success, the members were able to advise the group on issues such as land acquisition, access to planting materials, and other agronomic specifics. Through this initiative, the association has contributed greatly to the reduction of poverty in the region. The members mention a greater sense of community and solidarity as another significant benefit from their endeavor.

The group benefited from support from the Agricultural Services Support and Investment Program (AgSSIP), a World Bank program. Through the Cooperative Development Program, an AgSSIP initiative, farmers received training in activities such as group dynamics, financial management, and accounting. The training is reflected in the group’s current financial management scheme, which involves four accounts for profit repository—one for extension and training purposes, one for the payment of loans, one for community insurance, and a common fund for emergency needs.

They are now actively seeking financial support to assist new groups to access training, grow the MD2 variety, and gradually expand their production area—up to 50 to 60 acres.

Source: Interview with the growers, April 21, 2004.

COOPERATIVE, OR FARMER-OWNED, MODEL

Located in Nsawam, within the eastern region of the country, Farmapine Ghana Limited (FGL), a farmer-owned cooperative, started its operations in 1998. Soon after, it became one of the country's top two exporters by volume. Much ado has been made of this firm, but the question of whether to call it a success is controversial. This case study, however, provides an interesting insight into the growth of the Ghanaian pineapple sector.

Pineapple production by small-scale farmer cooperatives and large-scale commercial farmers began long before its official recognition by the Ghanaian government. In the late 1990s, the growth of the sector was hampered by technological and knowledge gaps that were henceforth addressed with the help of the National Agricultural Diversification Program,⁷ the Ministry of Food and Agriculture, APEX, and the University of Ghana, who all four provided technology and training.

The World Bank, which was at the time financing a number of rural projects, became interested in the potential of the Ghanaian pineapple sector. A pineapple export company was designed in order to strengthen the existing cooperatives—at the outset the initiative involved 178 small-scale pineapple growers in the eastern region. Farmapine was the result of a merger between five small-scale producer cooperatives and two private medium-scale exporting companies (Gabhro Limited and Kokobin Farms Limited). It was established as a limited liability company, with the five pineapple cooperatives holding 80 percent of the shares and Gabhro and Kokobin each holding half of the remaining shares. The cooperative received its original capitalization of US\$1.5 million through a government loan from the Agricultural Diversification Project.

In trade terms, Farmapine is a success. It is among the largest exporters of pineapple in Ghana in volume. In 1999–2000, 4,200 tons of fruit were exported, for a profit of 1 billion cedis or US\$100,000.⁸ In 2001 and 2002 the tonnage reached 6,000 tons, but, in 2003 the company went through very serious difficulties that nearly brought it down. Growers had accumulated grievances over declining sales return and lost confidence in the original management.

According to the management team, the company faced problems attributed to mistakes in the original design of the model, changes in the composition of the board, market constraints, delays in obtaining the quality of exportable pineapple,⁹ lack of land, repayment of the original loan, cash flow, and the payments cycle.¹⁰ Farmapine had to reinvent itself by adapting its current operations to new market conditions that include

⁷ A World Bank project, US\$22 million (1991–1999).

⁸ US\$1 = 9,000 cedis.

⁹ It took five years to reach 65 percent of exportable fruit.

¹⁰ Interviews with the management of Farmapine, April 21, 2004, and June 23, 2005.

changing market demand, changing production techniques, and widening of the membership in the cooperative.

In late 2004 management changed, and a new team was brought in that set out to turn the company around by drastically restructuring the debt, reducing costs, streamlining its producer membership, and obtaining badly needed deferred payment terms from its suppliers of carton boxes. An agreement was reached with a core of loyal suppliers prepared to supply the cooperative on an exclusive basis and a new contractual relationship designed with a more transparent management style. Today membership has increased to 300 members that are entirely devoted to the enterprise. Farmapine's improved finances have helped it widen its sources of financing. The members have obtained much needed additional financing from a local rural bank, Akwapim South Rural Bank. This will greatly improve Farmapine members' ability to finance their purchases of inputs.

Growers and Farmapine have agreed to a quality charter, and Farmapine has been arranging training for the members in better water management through the controlled droplet application technology and has obtained EurepGAP (European Good Agricultural Practices) certification for both its pack-house and the member farmers. Another important development has been the appointment of a quality surveyor at the European ports of destination to ascertain quality on arrival. In 2004 Farmapine exported 7,300 tons; in 2005 it is aiming at 8,500 tons.

One of the more acute challenges Farmapine faces is common to many cooperatives: the necessity to train its member growers in the areas of business management and governance so that they understand the constraints such an organization faces in competing in the marketplace with privately owned companies. The other challenge Farmapine shares with many of its local competitors is the changeover to the MD2 variety—which makes up only 5 percent of its shipped tonnage for the time being. It has entered into an agreement with CRIG (Cocoa Research Institute of Ghana) to produce the new variety through tissue culture and will be gradually replacing the old variety throughout 2005 and 2006.

MEDIUM-SIZED TO LARGE COMPANIES

The great majority of Ghanaian pineapple exporters and processors are medium-sized to large companies either established by local entrepreneurs or through joint ventures with British, Lebanese, and Dutch partners. Among these companies we find Blue Sky Products (GH) Ltd., Jei River, John Lawrence Farms, Korenco Farms, Milani Ltd., Prudent Exports, Tack Farms, and Tongu Fruits. Different organizational models coexist: Jei River Farms chooses to rely entirely on its own production in order to have complete control over quality, while others rely to varying degrees on smallholders' supplies up to the Prudent Farms case, which relies entirely on smallholders for the supply of fruit.

A special mention has to be made of the recent arrival in Ghana, under the name Golden Exotics Ltd., of the first truly multinational operator, Compagnie Fruitière of France, in which Dole—the world's largest fresh produce company—has a 40 percent stake.

Compagnie Fruitière has a long past of involvement in fruit production in West Africa and currently has production interests in Côte d'Ivoire (150,000 tons of banana and 50,000 tons of pineapple), Cameroon (150,000 tons of banana), Senegal, and Mauritania. Golden Exotics Ltd. was incorporated in March 2003 as a 100 percent subsidiary of Compagnie Fruitière under the Ghana free zone status, and it started its operations in August 2003, having acquired a previously existing operation known as Paradise Farms. By the end of December 2004, 150 hectares were planted; 400 hectares are planned for 2005, 600 for 2006, and the company will expand to the maximum of the purchased land, approximately 2,500 to 3,000 hectares, which should then equate to about 50,000 tons of fruit yearly, all of the MD2 variety. To sustain its development, Golden Exotics started an MD2 pineapple nursery early in 2003, and besides its own needs, it can now supply third parties with MD2 planting material.

The arrival of a multinational like Compagnie Fruitière should be seen as a boost for the Ghanaian pineapple industry as a whole, as it brings state-of-the-art agronomic know-how and a well-tested logistical capability through its Africa Express Line subsidiary, which is the largest specialized shipper of fresh produce out of the West African coast.

BOX 3. TONGU FRUITS: TO INTEGRATE OR NOT INTEGRATE SMALLHOLDERS?



Tongu Fruits, a Dutch company established in 1999, processes pineapple juice and slices for export to the European market. Initially based in Accra, Tongu developed a farm at Nutekpor (Volta Region) in 2001 and is in the process of establishing another in Akachi with an additional

capacity of 140 acres. Tongu Fruits is a holding of three companies: Tongu Fruits BV, Tongu Processing Ltd., and Gold Farm Ltd.

The Dutch supermarket chain Ahold proposed that Tongu become its preferred supplier if the company could regularly provide it with an important volume of fruit. To meet that need Tongu needs to increase its production. It plans on doing this by relying on outgrowers—it is currently unable to increase the size of its commercial plantation because of financial constraints. To this end, the company has designed a scheme—explained below—and is currently seeking support from financial and development institutions to implement it.

Processing plant at Tongu farm

© Tongu fruits

The outgrower scheme consists of a five-year contract under which a selected group of 30 growers is chosen. In the first year, the growers work on the company's plantation. In the second year, they grow pineapples on one hectare of land that belongs to the company and for which they may receive all the necessary inputs as well as cash advances. Additional revenues would be provided based on performance. Half of the income paid by the company is then blocked on a savings account (for five years), and the other half is paid in cash. At the end of the five years, the growers have the choice to stay on the farm as outgrowers (on the company's land) or become independent holders. Currently, the company has started training 60 workers.

Tongu Fruits has also spearheaded the transition to the MD2 variety. In 2004, its Gold Farm Ltd. branch developed (in vitro and in vivo) two million MD2 plantlets, worth US\$750,000. The company also has created the brand "Ghana Gold" and is expected to commercialize the plantlets. It has already sold a number of them to fellow SPEG (Sea-Freight Pineapple Exporters of Ghana) members.

Source: Interview with Tongu management, April 21, 2004; www.tongufruits.com.

3. LESSONS FROM GHANA’S EXPERIENCE IN THE PINEAPPLE SECTOR: SUCCESS FACTORS

Ghanaian pineapple entered the European market with great speed and managed to capture a market segment already occupied by well-established competitors. What factors explain Ghana’s success? We are of the opinion that the following variables factored into Ghana’s successful market entry and the eventual strong position that it attained: its market position, its exporter groups and active professional organizations, its infrastructure, and finally the support it received from its public and private sectors.

GHANA’S MARKET POSITIONING

Ghana’s initial market strategy in Europe was to sell to the northern low-end discount market for pineapple and at the same time offer a competitive price.¹¹ The breakdown of its cost structure (see figure 3) demonstrates that Ghana was able to compete by developing efficiencies in virtually all categories except transportation—in this case sea-freight cost. Côte d’Ivoire and Costa Rica, because of factors related to distance and “bulk of shipment,” were able to outcompete Ghana only in this category. However, this advantage was not enough to secure a lower price. Côte d’Ivoire, because of significantly lower margins, marketing, and packaging costs than Costa Rica, was able to offer a price of 0.75 Euros per kilogram. Ghana, for its part, was able to beat that price by seeking lower margins, reducing marketing cost, developing more efficient inland logistics, and lowering the price paid at the farmgate.

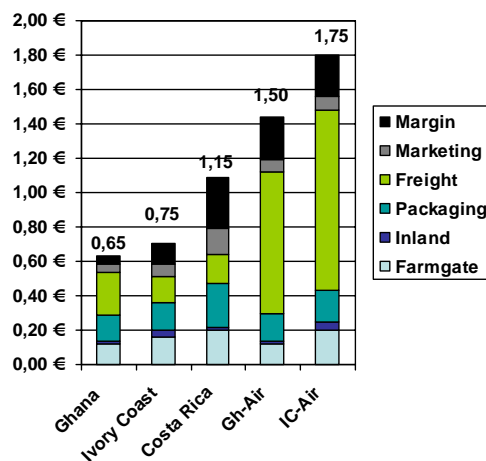


Figure 3. Comparative cost structure of the pineapple industry

COHESIVE EXPORTER GROUPS, ACTIVE PROFESSIONAL ORGANIZATIONS, AND INFRASTRUCTURE

The development of Ghana’s pineapple export industry was led by its private sector. Its entrepreneurs, with the support of an active network of professional organizations—Ghana has 3,000 registered business associations—organized and led this development. The sector illustrates the country’s dynamic business environment—92 percent of businesses are private, of which 80 percent are small- to medium-sized enterprises. In addition, a diversified group of export trade associations, such as the Sea-Freight

¹¹ Voisard and Jaeger, *Ghana Horticulture Development Study*, 47.

Pineapple Exporters of Ghana (SPEG) and the Vegetable Producers and Exporters Association of Ghana (VEPEAG), exist within the country. In the vegetable subsector, a new association, Gavex (Ghana Association of Vegetable Exporters), has recently been set up to represent exporters interests. These structures interact with state organizations involved in export promotion (Ghana Export Promotion Council [GEPC]), crop research and extension services, and the Ghana Standards board.

The country also benefits from the support of the Federation of Ghanaian Exporters (FAGE),¹² an umbrella organization that groups together all exporters in Ghana. It includes trade associations as well as corporate entities. FAGE is now moving its primary focus away from advocacy to business development services such as market information and training. In the horticulture sector, FAGE represents the interests of the Horticulture Association of Ghana (HAG),¹³ SPEG, and VEPEAG.

Ghana's dynamic business environment is aided by not only its able entrepreneurs but also the infrastructure already present in the country. Among that infrastructure we find efficient inroad construction, the Kotoka International Airport, and the Tema seaport. Those elements have allowed for the efficient transportation of horticultural goods within the country, which ultimately has decreased the transportation cost of shipping such goods and translates into a competitive advantage for Ghanaian producers.

¹² FAGE belongs to the Private Enterprise Foundation (the board is composed of bankers, the Ghana Chamber of Commerce, and the Employer Association). Its budget comes from the Ministry of Private Sector Development. Additional funding is supplemented with support from the United States Agency for International Development.

¹³ HAG was founded in 1982 but has lost in importance to SPEG. It now tends to represent the small growers and concentrates on organizing the supply of inputs to its members. Its functions are mostly to advocate for better prices, lobby for sector growth, and train its members to achieve EurepGAP certification.

BOX 4. SEA-FREIGHT PINEAPPLE EXPORTERS OF GHANA

Sea-Freight Pineapple Exporters of Ghana (SPEG) was created in 1995 to link the various pineapple exporters in the country to each other and build a sufficient volume of exports to call vessels to the Tema port. It is a good example of a successful partnership between private actors and the public sector (i.e., exporters, the government of Ghana, and the United States Agency for International Development). Before its creation, pineapples for export were air-freighted to Europe. SPEG succeeded in dramatically increasing pineapple exports by aggregating the production and thus providing the bulk volume necessary to call a ship.



© SPEG

Its services have been expanded to induce greater collaboration between its members.

If the main reason behind setting up SPEG was the common handling of sea-freight logistics, the association also provides other services to its members. On the marketing side, it identifies markets and makes the initial contacts on behalf of its members. It has also recently added a technical wing and has recruited a full-time technical manager, whose first duty will be—in close cooperation with the Ghana Standards Board—to help propagate common export standards among members.

As of mid-2005, SPEG's membership consists of 22 key pineapple exporting companies, and it now employs 10 full-time staff. It was initially set up with a financial contribution from USAID, but the association is now financially autonomous through the levy of a US\$5 per pallet fee on all exported tonnage.

Source: Interview with SPEG, April, 20, 2004, and April 18, 2005.

PUBLIC SUPPORT: DONOR- AND GOVERNMENT-SUPPORTED INITIATIVES**MINISTRY OF FOOD AND AGRICULTURE**

The Ministry of Food and Agriculture's (MOFA's) involvement in the pineapple export industry has been limited to its regulation. Within MOFA, the Crop Services Directorate has a team of two professionals dedicated to the development of horticulture. The extension services are handled at the district level. Horticultural research is carried out at the Crops Research Institute in Kumasi, where initiatives in horticulture are currently limited to the maintenance and characterization of the papaya germplasm. Phytosanitary controls, food pest control, pesticide regulations, and seed certification in all crop products are the responsibilities of the Plant Protection Division. The Environmental Protection Agency licenses the import of pesticides. Moreover, the government has participated in more targeted activities to assist the pineapple sector. For instance, Farmapine obtained support in terms of funding and technical assistance from the Cooperative Village Enterprise, the President's Special Initiative, led by the Ministry of Trade.

DEVELOPMENT AGENCIES

The United States Agency for International Development (USAID) is the most active development agency operating in Ghana and is directly involved in the horticultural sector. Through a five-year activity known as the Trade and Investment Reform Program, the U.S. government aid agency aims to reform Ghanaian policy as well as develop the

country's private enterprises. The policy reforms outlined in the program are implemented by a consultancy, Sigma One, while activities geared toward the development of enterprises are implemented by well-known contractors such as American Experience (AMEX), CARE International, TechnoServe, and the International Center for Soil Fertility and Agricultural Development. With regard to the development of private enterprises in the horticultural sector, CARE supports small vegetable growers; TechnoServe¹⁴ supports producers' organizations; and AMEX focuses on market services. Additionally, Michigan State University (MSU) has coordinated a partnership between the three principal contractors (AMEX, CARE, and TechnoServe) and Royal Ahold,¹⁵ the Dutch supermarket chain. This partnership—titled Food Industry Development—hopes to exploit synergies resulting from cooperation between these different organizations. MSU will provide training and research while Ahold will offer direct linkages to the market.

Among other donor programs, we find an initiative of the GTZ (a German government agency) to develop an integrated crop protection system. This initiative runs parallel to efforts by the Europe-Africa-Caribbean-Pacific Liaison Committee (COLEACP) through its Pesticide Initiative Program to assist exporters in their compliance with the new EU legislation on pesticide residues. In addition, the World Bank has been involved, though indirectly, in the development of Ghana's horticulture sector through a number of programs aimed at supporting the agricultural sector. We can cite four agricultural projects that have indirectly supported the pineapple sector: the National Agricultural Research Project (US\$22 million), the Ghana National Agricultural Extension Project (US\$30 million), the Ghana Agricultural Diversification Project (US\$16 million), and the ongoing Ghana Agricultural Sector Investment Project (US\$69 million). Under the National Agricultural Diversification Program (1991–1999), support was provided to pineapple growers—these farmers later formed Farmapine. They received support in the form of extension services and research with the participation of the University of Ghana, the Export Promotion Council, and CIRAD—particularly on the research side. They also benefited from the advice of experts from Sri Lanka and companies such as DuPont and Pioneer.

Finally, the sector benefited from the liberalization reforms of the 1980s. Under those Structural Adjustment Programs, the government and donor agencies were encouraged to promote nontraditional exports in order to promote diversification of the country's exports. As it stands, the Agricultural Sub-Sector Services Investment Program (AgSSIP) will provide significant support to the sector. The program was restructured in 2004, and a new horticulture export industry component was added (US\$9 million).

¹⁴ TechnoServe supported the establishment of Farmapine and the Mango Farmers Association of Ghana.

¹⁵ www.dec.org/partners/afr/ss/search_details.cfm?storyID=52&countryID=8§orID=0&yearID=3.

MOST RECENT DONOR-FUNDED ACTIVITIES

It is a remarkable tribute to horticulture's potential in Ghana that so many donors, over the last few years, have chosen to focus activities and investment in this agricultural subsector. The most important ongoing projects in the country in the horticulture sector are the Horticulture Export Industry Initiative (HEII), the Trade and Investment Program for a Competitive Export Economy (TIPCEE), and the Millennium Challenge Corporation. HEII is a new initiative of the AgSSIP program, financed by the World Bank. HEII aims at bolstering private sector-led and export-oriented activities. Now a flagship initiative, it has earmarked a total of US\$9 million for the five components of the project:

- Construction of postharvest infrastructure: Rehabilitation of Shed 9 at Tema into a refrigerated fruit terminal with cold storage and handling facilities. Construction of the Kotoka Airport Perishable Center and construction of two pilot field-packing houses. Design studies of these various structures are under way with actual construction scheduled to start in March 2006.
- MD2 sourcing and development: This subcomponent provides for the acquisition of six million plantlets that will be distributed to contracted propagators for onward transmission to farmers.
- Setting up a crop geographic database: Survey and mapping of the main areas of fruit and vegetable production for export.
- Food safety and quality management: This subcomponent aims at bringing technical assistance to the various government agencies involved in food quality standards in order to define and enforce pesticide regulations and bring to these agencies the know-how to monitor the pesticide residue limits in fruit exports and develop a EurepGAP protocol for the outgrower system.
- Industry ownership model: The project will also prepare for the eventual handing over of the export infrastructures to the industry itself through its professional association. This subcomponent will involve studies to determine the best possible modus operandi for the fresh produce export industry to gradually assume ownership of the infrastructure.

In many ways, the USAID-funded TIPCEE program complements AgSSIP in seeking to improve market access for Ghanaian produce. In its first year of activity, TIPCEE has chosen to concentrate on the following crops: pineapple, mango, papaya, cashew, and vegetables. The project-executing agency Chemonics won the USAID implementation contract in consortium with the nongovernmental organizations TechnoServe Ghana, CARE, and Geomar, and has set up a team and permanent office in Accra.

In accordance with its first-year plan, TIPCEE has set the following key objectives:

- Market access expanded
- Increased capacity of enterprises and smallholders to respond to market demand
- Increased delivery of demand-driven services
- Improved policy development and implementation

The Millennium Challenge Corporation has also identified horticulture as a promising source of export-led agricultural growth for Ghana and is currently doing some feasibility studies to promote fruit and vegetable crops to new areas of southern Ghana with good agro-ecological potential—in particular, the Afram plains area.

4. PINEAPPLE PRODUCTION AS A CATALYST TO THE DEVELOPMENT OF THE HORTICULTURE EXPORT INDUSTRY

IDENTIFICATION OF HIGH-POTENTIAL CROPS

The shift from air-freight to sea-freight pineapples had two important effects on the Ghanaian horticulture sector. The first was to free up air cargo space previously used by pineapple exporters. That free space was then used to ship other horticultural, high-value products out of Ghana toward European markets. The second effect, very much related to the first, was increased production\within the country of high-value horticultural products other than pineapple. About 120,000 tons of fruits were exported from Ghana in 2004 (see table 4).

IN THE FRUIT SECTOR

Table 4. Ghana's fruit exports in 2004

Fruit	Volume (in tons)
Pineapple	70,000
Papaya	3,750
Banana	725
Citrus	800

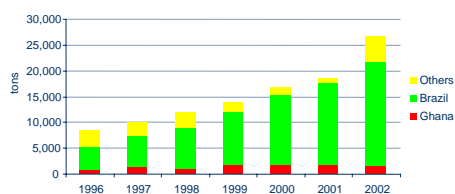
In the fruit sector, the main cropping activity is as follows:

- Papaya production had picked up but its development has now stagnated. However, with the introduction of the sea-freight-withstanding golden variety, papaya is seen as a promising export crop, and volumes should pick up substantially in the coming years.
- Mango production, particularly in the north of the country, shows great potential. The Integrated Tamale Fruit Company is a promising mango project that should start producing commercially in 2006.
- Citrus, a traditional crop, is now in significant demand in the regional market. It is one of the fastest developing crops. However, it is likely that the statistics may not entirely capture the regional trade exported by road to neighboring countries.

PAPAYA

Papaya exports grew strongly in the 1990s, when Ghana became the second largest supplier to the EU market. Ghanaian exporters market mainly because of the low cost of their Europe, for example, is only a fraction of the cost is mostly made up of five major companies. The smallholders. Plantations are commercially run and inputs, such as irrigation. Papaya is exported from fruit is fragile and easily damaged.

Figure 4. EU imports of papaya, 1996–2002

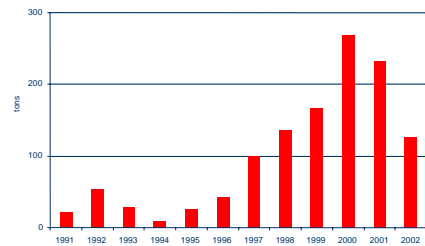


The outlook for Ghanaian papaya was quite different in 2002 when despite the growth of European imports of papaya (9,000 tons in 1996 to 16,000 tons in 2002), Ghana failed to sustain its production (see figure 4). Brazil has now completely taken over the European market with sea-freighted papaya sold at competitive prices. Ghana's position, in the mean time, is contested by a number of new competitors. Movement to improved varieties combined with the development of sea freight is now a necessary step to regaining lost ground.

MANGO

Mirroring the development of papaya, the mango sector in Ghana has not taken advantage of the growth of EU imports in the last 10 years—from 70,000 tons in 1996 to 135,000 tons in 2002.¹⁶ That growth is attributed to a fall in the price of the commodity that followed the introduction of sea-freighting in the same period. Ghana has strong potential to develop this sector; however, it will have to expand quickly to compete with Côte d'Ivoire, which exports more than 11,000 tons, compared to its 125 tons. The strongest advantage is the potential for a continuity of supply from December to June. This allows European distributors to reduce their supplier base and establish longer seasonal ties.

Figure 5. Ghana exports of Mango



As it stands, mango exports are insignificant because of a lack of critical volume required for sea-freighting (see figure 5). Moreover, constraints such as anthracnose and other fungal infestations, identification of quality rootstock and grafting material, smallholder production methods, et alia will have to be overcome.¹⁷ If such constraints are addressed, Ghana would be in a good position to capture an important part of the European market, particularly in the United Kingdom and in northern European countries where Côte d'Ivoire is not present.

An interesting development is taking place in Tamale with the setting up of the Integrated Tamale Fruit Company. This is a joint venture between Ghanaian interests and a well-known Ghana-based Dutch company. The concept is based on the outgrower scheme, whereby at the end of a two-year investment period, 2,000 growers will have been contracted to plant 100 seedlings each. The World Bank is participating in the scheme through a matching grant for the purchase of the mango seedlings. The bulk of the volume will be planted with the Kent and Kate varieties, but there will also be newer

¹⁶ Voisard and Jaeger, *Ghana Horticulture Development Study*.

¹⁷ Côte d'Ivoire's mango production of more than 15,000 tons is based on extensive field research carried out over several decades in research stations in the north of the country.

varieties with good market prospects originating from both Israel and South Africa. The idea is to develop an improved rootstock based on local varieties and then graft exogenous better-yielding varieties. When the entire acreage, nearly 1,000 hectares, is planted and the trees come into full production, some 20,000 tons of mangoes will be available for export by 2015. The export period, from the second half of March through the first half of June, is well suited for the European market. Already the Integrated Tamale Fruit Company has obtained various fair trade and organic certifications and has targeted certain preferred markets through the Netherlands-based Agrofair company.

BOX 5. “GROWING MANGOES UNTIL I DIE”

Kwesi Owusu is a mango grower in the Dodowa district. After losing his job in Accra and deciding to go back to his native region, he investigated different farm models and opted for mango growing in 1991. He started with 36 acres of land and a loan from the Agricultural Development Bank of 4.9 million cedis (which is now costing him 22 million cedis to reimburse because of the extremely high interest rates). He now has 850 trees, producing 100 kilograms of fruit per tree. His biggest harvest amounted to 32 tons. His production is divided equally between exports (to Lebanon, Dubai, and South Africa) and the local market. Owusu notes that finding buyers is not an issue, the difficulty rather has to do with producing the wanted volumes, having the right variety, being able to fight against anthracnose disease, and determining the right spraying techniques.

In terms of marketing, Owusu gets price information through the Ghana Export Promotion Council. He is contacted directly by the buyers, who also take care of the fruit preparation and transportation. The absence of a pack-house in the region is an obstacle to obtaining higher prices for the sales. The sector, however, is gradually being organized through the support of TechnoServe, which contributed to the constitution of the Mango Farmers Association of Ghana in 2003.

Owusu claims that he would like to “stay on my farm and grow mangoes until I die.” He mentioned that the business is economically very viable because of the very good market prices. According to him, mango is more profitable than pineapple, in particular because mango, as a tree crop, is a lifetime investment. His lifestyle has greatly improved in the past 10 years. He notes that he used to have a mud house and nothing else; now he has expanded his house and is planning on installing solar panels for electricity generation instead of the noisy generator. He would also like to purchase a computer to run his accounting sheets and spraying calendars. Owusu now employs eight people during harvesting.

Source: Interview with Kwesi Owusu, April, 21, 2004.

CITRUS

Citrus is a traditional horticultural crop in Ghana. Consumed locally and exported throughout the subregion, citrus is the second largest exported horticultural crop after pineapple and the fastest growing tree crop. Together with pineapple, this commodity is driving the growth of Ghana's fruit exports. However, this performance is undocumented because citrus is processed locally or exported within the subregion—that is, Togo, Senegal, Burkina, and Côte d'Ivoire. Citrus is also a staple of the juice industry.

Table 5. Summary of the export sector for other fruits (fresh and processed)

Crop	Est. 2002 Prod. (tons)	2002 Exports (tons)	FOB Value ^a (US\$)	No. of Exporters	Principal Destination	Local Processing
Citrus (orange/lemon/lime)	330,000	16,500	868,000	5	Togo Côte d'Ivoire	Juice
Papaya	5,000	1,500	865,000	28	Germany Togo UK	Slicing for street sales
Banana	10,000	3,230	3,250,000	1	Netherlands UK	No
Mango	4,000	126	70,000	33	Belgium UK South Africa	Fresh cut
Passion Fruit	5	2	2,700	2	Switzerland Belgium	Juice

Source: Voisard and Jaeger, *Ghana Horticulture Development Study*.

^a GEPC valuation.

IN THE VEGETABLE SECTOR

In 2004, Ghana exported more than 35,000 tons of vegetables, which is a relatively small number compared with the 78,000 tons of fruits exported in that year, of which 70,000

tons were pineapple.¹⁸ The sector's growth was driven by movements to diversify away from traditional crops to chilies, varieties of eggplant, and yams. These vegetables for exports are grown in the southeast corner of the country. The production is concentrated in the hands of large exporters who own their plantations, though they often supplement their production by purchasing directly from outgrowers. This trade is estimated to represent 40 percent of exported vegetables. Some of the larger grower-exporters have pack-houses, but none has yet been certified under EurepGAP.

ASIAN VEGETABLES

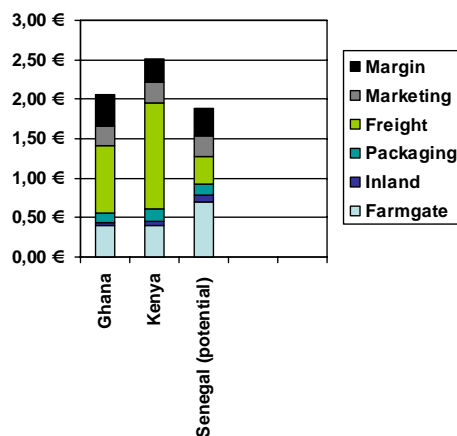
Ghanaian exports of Asian vegetables have grown significantly since 1996, led mostly by the chili pepper—a product traded in the United Kingdom's ethnic market. The country is also growing eggplant, ravaiya, okra, tinda, guar, yard-long beans, gourds, and marrows.

¹⁸ GEPC 2004 export figures.

CHILI

Among Asian vegetables, the chili is the main export crop. As with all horticultural crops, Ghana's approach in this market has been to underprice its competitors (Kenya and Zambia) by developing efficiencies in its supply chain (see figure 6). This approach has also led to basic production techniques and minimal product quality that undermine its ability to compete. In comparison, Kenya competes by achieving higher yields, higher quality, production consistency, and, for part of its production, full traceability. Senegal also poses serious threats to Ghana's chilies because of the country's ability to use containerized sea freight that takes six days to reach Europe.¹⁹ The only remaining advantage is Ghana's current linkages to the UK market. To secure its current market share, Ghanaian exporters must strive for higher quality and stronger integration with strategic distribution channels.

Figure 6. Comparative price structure for chili



YAM

The yam dominates the export of vegetables. The business is managed by a very large number of small traders—the top five exporters account for less than 30 percent of the trade. Since 1997, yam exports to the United States and the European Union have increased, reaching 17,000 tons to the European Union in 2002. Ghana is one of its main suppliers. Although demand is growing, with particular demand emanating from the United Kingdom, the trade remains informal.

FLOWERS

Floriculture is a nascent industry in Ghana. Media Horticulture, a division of Ghana Fresh Produce Ltd., is the only exporter currently active. The company was established on 200 hectares of land near Nsawam with financing from a Zimbabwean investor, COMAFIN, and the Agricultural Development Bank. It invested in a 2.5-hectare greenhouse, two hectares of shade netting, and 15 hectares of open field production. After several failed attempts, the company is now successfully shipping celosia, heliconia, and bamboo and sells through the Dutch flower auctions. Exports amounted to 65 tons in 2001 and fell to 12.5 tons in 2002. Ghana Fresh Produce Ltd. is also the owner of a cold store at Kotoka Airport.

¹⁹ Tests on containerized shipments of precooled “scotch bonnet” chillies from Senegal were satisfactorily conducted.

5. HOW SUSTAINABLE IS THE LOW-END SEGMENT? ADAPTING TO CHANGING CONDITIONS IN THE MARKET FOR HORTICULTURAL GOODS

Ghana's low-end strategy has been effective in initially securing a foothold in the low-end European pineapple market. But that strategy will serve to stifle growth in the overall pineapple market in the long term. Ghana must realize that growth in market segments other than the low end is driven by value creation along with a well-performing horticultural supply chain. The same argument could be made for the bulk of Ghanaian exports that are losing ground to competitors because of their reliance on their positive cost differentials, particularly in freight. Future growth depends on Ghana's capacity to improve its product portfolio and the quality of its production. Moreover, a low-cost strategy means low production techniques in the form of limited field preparation, rainfed or basic pipe irrigation, minimal fertilization, and makeshift postharvest installations. It also translates to a poor business environment whereby powerful buyers create very risky operations.²⁰ The global market is now also undergoing a revolution based on quality enhancement and traceability. This new approach praises conformity and predictability in the hopes of achieving precise transactional management. Product quality and reliability of supply have now become the key drivers of value creation.

FACING THE COMPETITION

Ghana's future in the pineapple and overall horticulture sector will depend on its ability to adapt to a changing landscape where new trends of innovation and performance will increasingly affect its capacity to compete in the world market. Furthermore, its horticultural export industry must realize that, in a global economy, the dynamics of competition are not based on geography but rather on competitiveness strategies. To this point, Ghana's competitors are now Costa Rica and Brazil just as much as Côte d'Ivoire and Kenya. Competitors can also be found among international groups such as Dole/Compagnie Fruitière, Del Monte, Chiquita, Fyffe, Caliman, Gaia, Katopé/Mallet Azoulay, Agrisol, Pomona, Capespan, Agrexco, and Homegrown. These companies have integrated their operations from field to market and command horticultural development across borders and between continents.

In light of this, Ghana's development strategy must take into consideration the sophistication of these actors. It must also strive to differentiate its products and compete not only on the basis of price but also on the reliability of supply and the assurance of quality. Two case studies are presented here to hint at the type of international strategies and value propositions that are developed on a product-by-product basis.

²⁰ In Ghana's pineapple industry, sales are done by consignment. This risky arrangement puts pressure on the exporters and the producers, whose produce is regularly rejected. The low-end market is also peopled by infamous buyers who default in payment.

BRAZILIAN PAPAYA

The switch by Brazilian growers to the Golden papaya²¹ has redefined the global papaya market. The fruit's sturdiness, linked with the introduction of chilled pack-houses, has permitted Brazilian exporters—led by the Caliman and Gaia brands—to ship the fruit by sea. The result was a significant reduction in costs and a “sandwiching” of Ghana between the higher and lower ends of the European market. The prominence of Brazilian brands was enhanced by their firms' promotional strategies based on strong partnerships with dynamic importers in targeted geographical markets.²² Brazilian firms operate large (greater than 50 hectares) industrial plantations using either drip or pivot irrigation. Their postharvest system reduces waste by a significant factor that decreases end-unit costs and increases profit margins. Interestingly, industry leaders now intend to develop outgrower production in order to reduce costs and risks and ensure a stable year-round supply.

To remain in the papaya market, Ghanaian exporters must respond quickly to the challenges posed by the competition. The country's market share is diminishing at the same time as the European market is experiencing tremendous growth. To stay competitive, Ghana will have to introduce a Golden variety, cold-chain logistics, and regular containerized reefer freight. It must also achieve market links with Europe and improve product quality, norms, and promotional appeal. Ghana's advantage lies in its capacity to provide a year-round supply based on a geographically diversified smallholder system. The conversion to the Golden variety and the development of sea-freight logistics, based on a field-to-door continuous cold chain could dramatically improve volumes. Ghana regained 10 percent of the papaya market loss to Brazil—30,000 tons or US\$60 million—in 2004 and grow from there.

SEASONAL COMPETITORS IN MANGO

In the mango sector, Ghana's competitors vary geographically depending on the seasons. Between July and September, Côte d'Ivoire, Mali, Burkina, and Senegal are its principal competitors. Between April and June, strong competition is presented from Central and South American countries such as Puerto Rico, Venezuela, Brazil, and Mexico. Between January and March, its competitors are Peru and South Africa.

MAINTAINING THE FREIGHT COST ADVANTAGE

The bankruptcy of Air Afrique in 2002 combined with the increasing liberalization of other West African nations puts Ghana in the precarious position of seeing its air-freight cost advantage being gradually eroded vis-à-vis the rest of West Africa. Competitive positions in sea-freighting in West Africa are largely affected by freight volumes. As it

²¹ Characterized by a near-perfect yellow outer skin color and a longer shelf life than the former Solo varieties.

²² Caliman, the industry's premium brand, has several “exclusivity” agreements with Wealmoor in the United Kingdom and Helfer for France and Switzerland.

stands, Ghana exports nearly 50,000 tons of the produce via sea freight. This tonnage is now to be reckoned with, and Ghana is seeing its bargaining position vis-à-vis the reefer lines being improved, and the steep improvement in projected tonnage will help her improve even further the freight rates.²³ As a comparison, Côte d'Ivoire and Costa Rica²⁴ each use multiple transporters for their horticultural goods and can therefore bid down the price. Further, the existing container-shipping infrastructure does not include essential precooling and direct "cold-tunnel" container-stuffing components critical for optimal quality.²⁵ We have learned from Côte d'Ivoire that competition between sea-freight transporters can be created through the provision of versatile infrastructure. In diversifying their capacity to ship away from reefers to include refrigerated containers, the country affected the types of ships that called at its ports. Moreover, container shipping is more adapted to the transaction volume used for diversification crops such as mango, papaya, and specialty melon.

PRODUCT DEVELOPMENT: HOW THE MD2 VARIETY CHANGED THE PINEAPPLE WORLD

In 1996, Del Monte introduced a new pineapple known as the MD2 variety, or Del Monte Gold. Within a few years, the company's "golden" pineapple invaded the North American and European markets. In 2001, exports from Costa Rica to the European market reached 400,000 pallets. They have since reached 550,000 pallets. One of the main lessons to be taken from this experience is the fundamental role innovation can play in product development. It is also an illustration of the importance of product differentiation in the market for horticultural goods.

Del Monte Gold is priced lower than the air-freighted varieties; however, the price does not reflect a quality differential between the products. The Gold version has been characterized as comparable in quality to Smooth Cayenne. On the market its popularity benefits from a superior promotion and marketing campaign, production research, and efficient postharvest techniques. This high-value strategy has resulted in net profit margins of 25 to 30 percent on Del Monte's pineapple lines. This will enable it to invest in further improving and integrating its marketing networks.

This supply chain innovation threatens West African pineapple exporters. In countries such as Ghana and Côte d'Ivoire, innovation and dissemination are particularly slow;

²³ Operated by the Dole/Compagnie Fruitière reefer line.

²⁴ With Côte d'Ivoire shipping 400,000 tons of produce yearly and Costa Rica shipping 900,000 tons of banana, pineapple, and melon to Europe alone (not counting traffic to the United States). Côte d'Ivoire still displays much lower rates than Ghana, estimated at approximately \$40 per ton shipped to Europe.

²⁵ The excessive temperatures in the export shed add costs, directly in reduced fruit quality and indirectly as the exporters prefer to deliver just in time for shipment in order to avoid storage.

postharvest costs are kept to a minimum; facilities generally include basic open-air pack-houses with no precooling capacity; goods are shipped at ambient temperature and in basic cardboard packages; and marketing costs are limited to the importers' commissions, with minimal promotional support and downstream marketing efforts. Del Monte's MD2, on the other hand, is benefiting from these African shortcomings and is quickly gaining market share in the European Union. Discussions with importers indicate that Smooth Cayenne—a high-priced variety—is increasingly difficult to sell.²⁶ Ghana will also face competition from other countries that have followed Costa Rica, such as Ecuador and Honduras. These countries have expanded their production of MD2 and are gaining market shares.

In view of such developments, it is essential that Ghana reposition its pineapple export industry and move from the low-end to the high-value segment. It should also position itself to take better advantage of the smallholder and the small and medium-sized enterprise production systems. In addition, conversion to the MD2 variety is not an option but a necessity for Ghana. Late entry by West Africans in the production of this variety could lead consumers and distributors to associate them with Smooth Cayenne and South Americans with the MD2 variety—an association that will negatively affect any future promotional and marketing activities on the part of West Africans.

Adopting MD2 will require significant investments of the following sort:

- Establishing a cold chain from the field to port.
- Ensuring continuous and consistent supply of the fruit.
- Standardizing and assuring the quality of the fruit.
- Introducing the MD2 cultivar.
- Improving marketing programs and product promotion aides (e.g., attractive branding and individual fruit labeling).
- Setting up containerized freight that permits door-to-door service and drives reefer shipping costs down. This will require specific precooling and shipping facilities at port or plantation levels.

This strategy will stem from the pineapple sector and integrate Ghanaian exporters into more structured distribution channels. That will translate into greater opportunities and revenues by improving the FOB (free on board) price. Such revenues could in turn be reinvested in the sector. Some producers have already introduced the MD2 variety into

²⁶ Royal Ahold is carrying out studies to verify whether the shift in preference toward MD2 is as profound throughout Europe as what it currently experiences in Holland. Trade statistics certainly indicate this shift, with Costa Rica's ever growing market share since 1996. Further, even processors have requested to shift to MD2 for fresh-cut products in order to achieve the new norm in terms of pulp color and taste.

their plantations;²⁷ however, given the high cost of introduction, current acreage of MD2 is still very limited.

BOX 6: DEL MONTE AND THE MD2 SAGA



Since its introduction in 1996, the MD2 pineapple cultivar, developed and marketed by Fresh Del Monte Produce (FDMP) Inc. under the Del Monte Gold—Extra Sweet Pineapple brand, has taken up more than 50 percent of the worldwide market (United States, Europe, and Asia) for branded fresh pineapple.

A blockish shape, golden outer shell, deep green leafy crown, golden yellow pulp, and sweet taste with limited acidity characterize the product. It was developed by FDMP in collaboration with the University of Hawaii from cultivars used traditionally for air-freighted produce. The product has been skillfully price-positioned on the European market: between premium air-freight and regular sea-freight pineapple. Through intense promotion and FDMP's efficient distribution network, MD2 today fetches a significant price premium of 75 percent over the Smooth Cayenne price, with a similar price structure and a gross margin that can be estimated at more than 30 percent of net sales (according to the Fresh Del Monte Inc. annual report, 2001).

Comment [MD1]: What is FDMP



The MD2 is not a proprietary cultivar exclusive to FDMP, and today the current trend in North America is the sourcing by supermarkets of alternate “Golden” brands from Costa Rica and other Latin American origins (Chiquita Gold Extra Sweet Pineapple, Dole Premium Select Super Sweet Pineapple Tropical Gold, Linda Gold, Bonita Sunripe Ultra Sweet Pineapple [actually, the pioneers in this branding exercise were Ivorian with “Ananas de Côte d’Ivoire”]). These new entries have not significantly altered the price structure for MD2 pineapple on the U.S. market. It is expected that the same will happen in Europe with the pricing structure remaining favorable to MD2, at least in the first years following the new entrants’ arrival. This trend sheds new light on the actual “brand loyalty” that has been achieved by FDMP through its advertising campaigns. The consumer appeal of the MD2 cultivar, rather than fidelity to the Del Monte brand, seems to be capturing most of the premium.

Following the success of the Del Monte Gold, the multinational corporation is now planning its next product, hoping to capitalize on the growing demand for pineapple. The new product, Del Monte Honey Gold, is expected to launch commercially by 2006. The product is characterized by a strong aroma and longer shelf life at room temperature. Del

²⁷ Larger firms with European backing are currently investing in tissue culture facilities (Beaumart/Blue Skies joint venture, Tongu Farms).

Monte's chief executive officer, Mohammad Abu-Ghazaleh, says, "Our development of this new variety reflects our company's growing global industry leadership in the pineapple category, highlights our long-term strategic commitment to product line diversification, and showcases our exceptional, innovative research and development capabilities as well as the accomplishments of our scientific team" (press release, "Del Monte Unveils New Pineapple Variety," Coral Gables, October 16, 2003).

Source: Voisard and Jaeger, *Ghana Horticulture Development Study*; interview with Jean-Michel Voisard; and information from Del Monte at www.freshdelmonte.com

IMPROVING SUPPLY CHAIN LOGISTICS

We've seen that innovation at each level of the supply chain is necessary to grow in the horticulture export industry. Value, though, does not lie in innovation alone. Standards in the form of measures aimed at controlling production practices are also important in enhancing the value of horticultural goods. In our opinion, the two most important factors in supply chain logistics are the management of the cold chain and the development of pre- and postharvest techniques.

THE CONTINUOUS COLD CHAIN

A viable horticulture supply chain requires the establishment of a continuous cold chain from the field of production to the port of exportation.²⁸ As it stands, Ghanaian farmers and exporters are limited to the use of inadequate storage facilities at the airport and port. Farmers currently package their products at the port side in poor hygienic conditions that often compromise quality. Ideally, storage sheds would be replaced by cold rooms—which would provide farmers with incentives to invest in their cold transports from farm to port and thus further increase the quality as well as the quantity of horticultural products sold. On the exporter side, investment in refrigerated container shipments would serve to further diminish the risk of spoilage and increase margins gotten in the long term.

At the moment, lack of sufficient capacity in reefer containers also affects the country's ability to export other horticultural products such as papaya, mango, and melon. Under the current system, Ghana makes use of the existing reefer line that stops at the Tema port coming from Douala and en route to Abidjan. Consequently freight capacity is sometimes limited, and that is increasingly proving a constraint on Ghana's exports. As the pineapple volume keeps increasing, Ghana will soon be in a better position to negotiate its freight rates on other perishable cargoes (such as papaya, mango, melon) as more carriers will be attracted to Tema, which, in turn, will help it break into the high-growth sea-freight papaya sector.

²⁸ The *cold chain* refers to the continuous storage at appropriate temperatures of horticultural goods from farm to port of shipment.

PRE- AND POSTHARVEST MANAGEMENT

Investment in pre- and postharvest management entails the following investments:

- Creation of an inland postharvest network, or a network of packing and consolidation centers strategically located in growing areas²⁹
- Creation of a perishable air-freight cargo village
- Provision of agro-industrial training for middle managers in postharvest and cost handling

FOOD SAFETY AND QUALITY MANAGEMENT

Ghana must face the challenges of quality and management performance imposed by the distribution channels of European supermarkets. Such measures include, among other things, the much publicized pesticide residue management/detection requirement. In addition, Ghana must develop a system for tracking quality. This development must be seen as part of a full-service marketing proposition, which would stem from its current position of low-cost spot supplier to the European wholesale distribution market.

QUALITY

Quality assurance is the main driver for vertical integration along the horticultural goods supply chain. Supermarket brands are now so valuable that retailers are extremely risk averse (risk associated with inferior goods or produce that may contravene food standards in their markets). Vertical integration is thus an attempt at controlling such risk on the part of exporters. The fresh produce category is actually one of the few product groups that supermarkets can use to differentiate themselves. Unless the supplier (exporter) can reach the standards set by these organizations, consistently and reliably, this channel, which dominates produce retailing in northern Europe, will not be an option.³⁰

In Ghana, larger exporting companies, involved mainly in the export of fresh pineapple and banana, have engaged independently in their own quality assurance programs. These programs, often supported by donor funds, aim mostly at attaining EurepGAP certification. These initiatives are initially driven by the willingness to develop strong market linkages between African producers and the major European distribution networks. Small-scale exporters, on the other hand, who have yet to benefit from these donor funds, have simply been informed of quality assurance and food safety

²⁹ Performing the service of a consolidation platform prior to shipment to the airport with plastic harvest crate service (leasing, cleaning, and storage); a sorting and packing zone; paper box storage; certified weight tickets; safe pesticide storage; and technical information dissemination activities (information postings, training courses, basic documentation); as well as precooling and air pallet consolidation.

³⁰ See Dolan Catherine, and J. Humphrey, *Horticultural Commodity Chains: The Impact of the UK Market on the African Fresh Vegetable Industry*, IDS working paper no. 96, Institute of Development Studies,

requirements through donor-funded seminars. However, they have been slow at implementing the recommendations.

COMPLYING WITH QUALITY STANDARDS: EUREPGAP

European Good Agricultural Practices (EurepGAP, loosely speaking)³¹ is a private food quality standard established by a consortium of food retailers in Europe. It aims to establish a system of self-appraisal and certification by horticultural goods producers. EurepGAP certification is gradually becoming the standard for food exports to the European market. In Ghana, some of the major pineapple exporters have taken steps toward EurepGAP certification.³² In addition, COLEACP's Pesticide Initiative Program is actively promoting an understanding of its standards. The challenge for countries like Ghana is smallholder certification, as those actors represent the bulk of the production system. Moreover, the standards have rarely been designed with the smallholder-based production system in mind—where full traceability and control of field practices are difficult. However, private standards, and in particular EurepGAP, are expected to gradually provide the overall guidance with regard to food quality norms in the global market. If smallholders are unable to certify, they risk being completely pulled out of the export chains.

³¹ See www.eurep.org

³² Ghanaian pineapple is present in German supermarkets, for example, while in UK supermarkets EAL supplies ravaia and Blue Sky sells fresh-cut pineapple and juices.

6. GOING FOR “GOLD”

REVISING GHANA’S MARKET POSITION

To stay competitive, Ghanaian horticultural exports must be positioned in the high-value segment of the European market, and this is precisely what the Horticultural Export Industry Initiative has set out to do. Through its current emphasis on the gradual switchover from the Smooth Cayenne variety to the MD2, its emphasis on improving smallholder working methods through adapted innovative extension support, and its heavy investment in cold-chain facilities and export infrastructure, AgSSIP has a catalytic impact on the transformation of the industry, which will be relayed by other aid programs centered on horticulture, such as the USAID-financed TIPCEE.

Furthermore, the arrival in Ghana of multinational firms such as Compagnie Fruitière will have a beneficial impact on the industry as a whole, as they will be trendsetters and will contribute to improving the smallholder-exporter relationship through the development of contract farming.

Though “organic” or “fair trade” market niches should be investigated, entry into the mainstream markets for fresh produce remains the best way to significantly affect employment and redistribution at the farmer level. To their benefit, Ghanaian farmers and companies have already demonstrated great entrepreneurial spirit. With the appropriate support in infrastructure development and management, that spirit can be leveraged to reinforce Ghanaian horticultural exports.

LESSONS FROM THE PINEAPPLE AND MANGO SECTORS

The promotion of competitive smallholder production requires specific allocations of government resources. In Côte d’Ivoire’s pineapple and mango industries, outgrower production systems have been particularly sustainable because of efforts in developing a skilled outgrower base able to compete in the world marketplace. These systems, now privately run, have their origin in government investments in initial rootstock, applied research, basic crop extension services, donor-funded quality initiatives, and investments in primary irrigation networks. In Ghana, new models of smallholder production systems will have to be designed and organized. Identification of leadership at the grower level combined with appropriate business models should provide a strong foundation for the development of new producer organizations. The revived cooperative Farmapine concept is also likely to spread as a farmer-owned model in new areas that are going into the cultivation of the MD2 variety, particularly among the smallholder growers who will be within the catchment area of the soon-to-be-built pilot packing station.

PUBLIC-PRIVATE PARTNERSHIP

While growth in the pineapple industry has been mostly driven by private entrepreneurs, clearly, however, the public sector has played a significant role in supporting the industry, and will continue to do so. Throughout the inception of AgSSIP, and now through its implementation, the Ghanaian government, through MOFA’s HEII team, has

played a leading role in bringing together all stakeholders involved in the fresh produce business in Ghana to discuss important decisions concerning the industry's strategy. Sea-freight and air-freight exporters were called for consultation, together with international consultants shortlisted for the design of the export infrastructure at the Tema port and the Kotoka airport. Furthermore, through AgSSIP, the government was able to form a national task force on horticulture. Under this initiative, members of both the public and private sectors regularly meet to discuss issues related to the development of the horticulture sector.

TECHNOLOGY AND INNOVATION

Technology and innovation affect not only production practices but also competition between different supply chains. For instance, Brazilian exporters have introduced a Golden papaya cultivar that can now be sea-freighted. This has undercut Ghana's low-cost position in a market formerly exclusively supplied by its air-freighted product. On a more hypothetical note, Senegal could develop extremely low-cost sea-freight capabilities for Asian vegetables and destroy Ghana's existing air-freight cost advantage over Kenya. It is clear that innovation in marketing can also play a central role in the new horticulture industry. Indigenous firms are developing in vitro multiplication know-how: Tongu Fruits learned its lessons from Del Monte and is developing its own brand of the MD2 pineapple, "Ghana Gold." Bomarts has also recently set up in vitro laboratory equipment to participate in the propagation of the MD2 variety. Such capacities will also place Ghana in a good position when the European market for banana opens up. Ghana, like a number of countries in Sub-Saharan Africa, is aware that it will need to introduce technology, innovation, and research and development as some of the main drivers of competitiveness in its horticulture development strategy.

CONCLUSION

In 10 years, Ghana has proved to be a resilient and competitive pineapple and horticulture export leader in Africa. After rapidly gaining control of this low-end market segment, the country was put at risk with the invasion of the new MD2 variety. However, Ghanaian entrepreneurs and their partners are now responding to that challenge by scaling up production and adopting new technologies. Ghana's experience showcases the reality of global markets and the challenges African producers face. Staying competitive requires a strategic and adaptive vision to constantly adapt to new market demands and competitor's innovations. Ghana well proves that African entrepreneurs can step up to this challenge and become leaders in agricultural markets.

Today, prospects look remarkably bright for the Ghana pineapple industry. If SPEG estimates the 2005 export figures to remain close to the 2004 mark (about 65,000 tons for both air and sea freight), it forecasts a rise to about 73,000 tons in 2006 and 90,000 tons in 2007, due mainly to the coming into production of Golden Exotics' sizable pineapple acreage expansion, all of which is planted with the MD2 variety. The number of SPEG-registered exporters is expanding, the country has developed its own in vitro tissue culture laboratory capacity, the gradual changeover to the MD2 variety is well on its way, a dedicated fruit terminal at the Tema port is on the drawing board, and the subsector is receiving increased attention from donors. Besides the World Bank, HEII, USAID, and TIPCEE, now the U.S. Millennium Challenge Corporation is setting its sights on horticulture in Ghana with an ambitious program that, if it comes to fruition, should project the industry well into the 21st century.

The stimulus and leadership such investments will provide to the industry as a whole may well be beneficial; however, it remains to be seen how smallholder producers will be able to get their fair share of this growth. The fate of Ghana's smallholders is of great concern. Does shifting the overall competitiveness of the sector by producing for a higher-value segment of a market compromise the livelihoods of smallholders? The authorities will have to remain vigilant to the fate of the individual producers and ensure that they are not left by the wayside in the general concentration move toward vertical integration that multinational investors will impulse to the industry. It is important that a number of medium-sized exporters should remain, next to the multinationals and relying on outgrowers, to complement their own production. In parallel, the government should encourage the spread of contract farming. This is where the donor community, under the leadership of the World Bank and USAID, also has a role to play by encouraging the experiment in Ghana of best practices in the field of contract farming that have elsewhere proved successful in fostering the overall growth of a thriving fruit export industry while improving the livelihoods of smallholder farmers.

ANNEX 1: LIST OF PEOPLE MET

Organization	People
Horticulture Association of Ghana Accra	Sam Kwesi Enniful Samuel Otu Amoah
Sea-Freight Pineapple Exporters of Ghana, Accra	Steven Mintah
Federation of Association of Ghanaian Exporters, Accra	David Yawson
Tongu Farms	Daan Luteijn A. H. den Heyer
Farmapine	Prof. Kwame Boasiako Omane-Antwi Joseph Osei-Wusu Mr. Quartey
Oboadaka Cooperative	Mr. Parry
Dangbe West District Assembly, Dodowa	Nii Quaye-Kumah
Power Pineapple Growers, Dodowa	Samuel Tetch and 20 growers
Mango Farmers Association of Ghana, Dodowa	Kwesi Owusu

ANNEX 2: BIBLIOGRAPHY

Danielou, Morgane, Patrick Labaste, and Jean-Michel Voisard. "Linking Farmers to Markets: Exporting Malian Mangoes to Europe." Africa Region Working Paper Series, no. 63, Washington, D.C., 2003.

Dunn, John. *USDA Co-Op Development Efforts Support Commercial Farming in Ghana*. Co-op Resources Management Division, USDA Rural Development, Washington, D.C., 2004.
www.rurdev.usda.gov/rbs/pub/may04/ghana.htm

Farmapine. "Composite Paper on Four-Year Farmer Ownership Model from Project Review of Implementation Program: Challenges and the Way Forward, the Case of Farmapine Ghana Limited (A World Bank-IDA/Government of Ghana Promoted Company)." Prepared by the Farmapine management team, 2004.

Frank, Robert. "Going for the Gold Turns Pineapple World Upside Down." *Wall Street Journal*, October 7, 2003.

Fruitrop. *Le Marché Mondial de l'Ananas, Quand Croissance Rime Avec Diversité*. Le point Sur, Marché Mondial de l'Ananas, no. 100, p. 100, Mars 2003.

International Trade Center. *Diagnostic Report and Export Development Strategy for the Horticultural Industry in Ghana*. Joint Integrated Technical Assistance Programme to selected least-developed and other African countries. ITC/DTCC/03/2669. 2003.

Loeillet, Denis. *Le Commerce International de l'Ananas*. Observatoire de Marches, Revue Fruitrop, CIRAD-FLHOR.

Soler, A. *Pineapple: Agricultural Practices*. West African Pineapple, COEACP, CIRAD, BEPAC, Montpellier. 1992.

"A Pineapple a Day." *Spore: Information for Agricultural Development in ACP Countries*, no. 96 (December 2001).
http://spore.cta.int/spore96/spore96_brief.html

Takane, Tsutomu. "Smallholders and Nontraditional Exports under Economic Liberalization: The Case of Pineapples in Ghana." *African Study Monographs* 25, no. 1 (2004): 29-43.
http://jambo.africa.kyoto-u.ac.jp/kiroku/asm_normal/abstracts/pdf/25-1/29-43.pdf

Taylor, Sue. "Ethical Trade 1." *In the Field*, BBC English, program 7, November 15, 2002, London.

Trienekens, Jacques, James Hagen, and Sabine Willems. "Innovation through International Supply Chain Development: A Case Study." Management Studies Group, Wageningen University, 2004.

www.ifama.org/conferences/2004Conference/Papers/Trienekens1003.pdf

Voisard, Jean-Michel, "Bench-Marking and Competitiveness Analysis in Horticulture Supply Chains: Analytical Framework and Selected Examples." Issues note for the World Bank seminar on Developing Horticulture Supply Chains in Sub-Saharan Africa, Module 3, "Enhancing the Competitiveness of Horticultural Supply Chains," April 2004, Accra.

Accessible (free registration) at

www.worldbank.org/wbi/sdruralpoverty/africa-horti/index.html

Voisard, Jean-Michel, and Peter Jaeger. *Ghana Horticulture Development Study*. Consultant report for the Regional Study on Agricultural Trade Facilitation and Export Promotion in Sub-Saharan Africa and the Agricultural Sub-Sector Investment Program (AgSSIP) Restructuring. ESSD Africa, World Bank, Washington, D.C., 2003.

"Will Ghana Become the King of Pineapple?" *Eurofruit Magazine*, June 2003.

World Bank. *Ghana International Competitiveness—Opportunities and Challenges Facing Non-Traditional Exports*. Report no. 22421-GH. 2001.

World Bank, IFPRI. *Successes in Africa's Horticulture: Opportunities and Challenges*. Agricultural trade facilitation study, ESSD Africa, ESW report, July 2004.

World Bank, VEK. *Prospects of the European Market for Fresh Products and Opportunities for Sub-Saharan African Exporters*. Agricultural trade facilitation study, ESSD Africa, ESW report, July 2004.

ANNEX 3: USEFUL LINKS

European Good Agricultural Practices (EurepGAP)

www.eurep.org

Europe-Africa-Caribbean-Pacific Liaison Committee (COLEACP)

www.coleacp.org

Government of Ghana

www.ghana.gov.gh

Ghana Export Promotion Council

www.exportghana.org/

Ghana Investment Promotion Center

www.gipc.org.gh

Federation of Associations of Ghanaian Exporters (FAGE)

www.ghana-exporter.org/

Sea-Freight Pineapple Exporters of Ghana (SPEG)

www.ghana-exporter.org/speg/

Ghana Export Showcase

www.ghanatrade.org/

Ministry of Food and Agriculture

www.ghana.gov.gh/governing/ministries/economy/agric.php

Pesticide Initiatives Program

www.coleacp.org/en/pesticides/

USAID—Royal Ahold Ltd. of the Netherlands

www.dec.org/partners/afr/ss/search_details.cfm?storyID=52&countryID=8§orID=0&yearID=3

Africa Region Working Paper Series			
Series #	Title	Date	Author
ARWPS 1	Progress in Public Expenditure Management in Africa: Evidence from World Bank Surveys	January 1999	C. Kostopoulos
ARWPS 2	Toward Inclusive and Sustainable Development in the Democratic Republic of the Congo	March 1999	Markus Kostner
ARWPS 3	Business Taxation in a Low-Revenue Economy: A Study on Uganda in Comparison with Neighboring Countries	June 1999	Ritva Reinikka Duanjie Chen
ARWPS 4	Pensions and Social Security in Sub-Saharan Africa: Issues and Options	October 1999	Luca Barbone Luis-A. Sanchez B.
ARWPS 5	Forest Taxes, Government Revenues and the Sustainable Exploitation of Tropical Forests	January 2000	Luca Barbone Juan Zalduendo
ARWPS 6	The Cost of Doing Business: Firms' Experience with Corruption in Uganda	June 2000	Jacob Svensson
ARWPS 7	On the Recent Trade Performance of Sub-Saharan African Countries: Cause for Hope or More of the Same	August 2000	Francis Ng and Alexander J. Yeats
ARWPS 8	Foreign Direct Investment in Africa: Old Tales and New Evidence	November 2000	Miria Pigato
ARWPS 9	The Macro Implications of HIV/AIDS in South Africa: A Preliminary Assessment	November 2000	Channing Arndt Jeffrey D. Lewis
ARWPS 10	Revisiting Growth and Convergence: Is Africa Catching Up?	December 2000	C. G. Tsangarides
ARWPS 11	Spending on Safety Nets for the Poor: How Much, for How Many? The Case of Malawi	January 2001	William J. Smith
ARWPS 12	Tourism in Africa	February 2001	Iain T. Christie D. E. Crompton
ARWPS 13	Conflict Diamonds	February 2001	Louis Goreux

Africa Region Working Paper Series			
Series #	Title	Date	Author
ARWPS 14	Reform and Opportunity: The Changing Role and Patterns of Trade in South Africa and SADC	March 2001	Jeffrey D. Lewis
ARWPS 15	The Foreign Direct Investment Environment in Africa	March 2001	Miria Pigato
ARWPS 16	Choice of Exchange Rate Regimes for Developing Countries	April 2001	Fahrettin Yagci
ARWPS 18	Rural Infrastructure in Africa: Policy Directions	June 2001	Robert Fishbein
ARWPS 19	Changes in Poverty in Madagascar: 1993-1999	July 2001	S. Paternostro J. Razafindravonona David Stifel
ARWPS 20	Information and Communication Technology, Poverty, and Development in sub-Saharan Africa and South Asia	August 2001	Miria Pigato
ARWPS 21	Handling Hierarchy in Decentralized Settings: Governance Underpinnings of School Performance in Tikur Inchini, West Shewa Zone, Oromia Region	September 2001	Navin Girishankar A. Alemayehu Yusuf Ahmad
ARWPS 22	Child Malnutrition in Ethiopia: Can Maternal Knowledge Augment The Role of Income?	October 2001	Luc Christiaensen Harold Alderman
ARWPS 23	Child Soldiers: <i>Preventing, Demobilizing and Reintegrating</i>	November 2001	Beth Verhey
ARWPS 24	The Budget and Medium-Term Expenditure Framework in Uganda	December 2001	David L. Bevan
ARWPS 25	Design and Implementation of Financial Management Systems: An African Perspective	January 2002	Guenter Heidenhof H. Grandvoinet Daryoush Kianpour B. Rezaian
ARWPS 26	What Can Africa Expect From Its Traditional Exports?	February 2002	Francis Ng Alexander Yeats

Africa Region Working Paper Series			
Series #	Title	Date	Author
ARWPS 27	Free Trade Agreements and the SADC Economies	February 2002	Jeffrey D. Lewis Sherman Robinson Karen Thierfelder
ARWPS 28	Medium Term Expenditure Frameworks: From Concept to Practice. Preliminary Lessons from Africa	February 2002	P. Le Houerou Robert Taliercio
ARWPS 29	The Changing Distribution of Public Education Expenditure in Malawi	February 2002	Samer Al-Samarrai Hassan Zaman
ARWPS 30	Post-Conflict Recovery in Africa: An Agenda for the Africa Region	April 2002	Serge Michailof Markus Kostner Xavier Devictor
ARWPS 31	Efficiency of Public Expenditure Distribution and Beyond: A report on Ghana's 2000 Public Expenditure Tracking Survey in the Sectors of Primary Health and Education	May 2002	Xiao Ye S. Canagaraja
ARWPS 33	Addressing Gender Issues in Demobilization and Reintegration Programs	August 2002	N. de Watteville
ARWPS 34	Putting Welfare on the Map in Madagascar	August 2002	Johan A. Mistiaen Berk Soler T. Razafimanantena J. Razafindravonona
ARWPS 35	A Review of the Rural Firewood Market Strategy in West Africa	August 2002	Gerald Foley Paul Kerkhof Djibrilla Madougou
ARWPS 36	Patterns of Governance in Africa	September 2002	Brian D. Levy
ARWPS 37	Obstacles and Opportunities for Senegal's International Competitiveness: <i>Case Studies of the Peanut Oil, Fishing and Textile Industries</i>	September 2002	Stephen Golub Ahmadou Aly Mbaye
ARWPS 38	A Macroeconomic Framework for Poverty Reduction Strategy Papers : With an Application to Zambia	October 2002	S. Devarajan Delfin S. Go
ARWPS 39	The Impact of Cash Budgets on Poverty	November 2002	Hinh T. Dinh

Africa Region Working Paper Series			
Series #	Title	Date	Author
	Reduction in Zambia: A Case Study of the Conflict between Well Intentioned Macroeconomic Policy and Service Delivery to the Poor		Abebe Adugna Bernard Myers
ARWPS 40	Decentralization in Africa: A Stocktaking Survey	November 2002	Stephen N. Ndegwa
ARWPS 41	An Industry Level Analysis of Manufacturing Productivity in Senegal	December 2002	Professor A. Mbaye
ARWPS 42	Tanzania's Cotton Sector: <i>Constraints and Challenges in a Global Environment</i>	December 2002	John Baffes
ARWPS 43	Analyzing Financial and Private Sector Linkages in Africa	January 2003	Abayomi Alawode
ARWPS 44	Modernizing Africa's Agro-Food System: <i>Analytical Framework and Implications for Operations</i>	February 2003	Steven Jaffee Ron Kopicki Patrick Labaste Iain Christie
ARWPS 45	Public Expenditure Performance in Rwanda	March 2003	Hippolyte Fofack C. Obidegwu Robert Ngong
ARWPS 46	Senegal Tourism Sector Study	March 2003	Elizabeth Crompton Iain T. Christie
ARWPS 47	Reforming the Cotton Sector in SSA	March 2003	Louis Goreux John Macrae
ARWPS 48	HIV/AIDS, Human Capital, and Economic Growth Prospects for Mozambique	April 2003	Channing Arndt
ARWPS 49	Rural and Micro Finance Regulation in Ghana: <i>Implications for Development and Performance of the Industry</i>	June 2003	William F. Steel David O. Andah
ARWPS 50	Microfinance Regulation in Benin: <i>Implications of the PARMEC LAW for Development and Performance of the Industry</i>	June 2003	K. Ouattara

Africa Region Working Paper Series			
Series #	Title	Date	Author
ARWPS 51	Microfinance Regulation in Tanzania: <i>Implications for Development and Performance of the Industry</i>	June 2003	Bikki Randhawa Joselito Gallardo
ARWPS 52	Regional Integration in Central Africa: <i>Key Issues</i>	June 2003	Ali Zafar Keiko Kubota
ARWPS 53	Evaluating Banking Supervision in Africa	June 2003	Abayomi Alawode
ARWPS 54	Microfinance Institutions' Response in Conflict Environments: <i>Eritrea- Savings and Micro Credit Program; West Bank and Gaza – Palestine for Credit and Development; Haiti – Micro Credit National, S.A.</i>	June 2003	Marilyn S. Manalo
AWPS 55	Malawi's Tobacco Sector: <i>Standing on One Strong leg is Better than on None</i>	June 2003	Steven Jaffee
AWPS 56	Tanzania's Coffee Sector: <i>Constraints and Challenges in a Global Environment</i>	June 2003	John Baffes
AWPS 57	The New Southern African Customs Union Agreement	June 2003	Robert Kirk Matthew Stern
AWPS 58a	How Far Did Africa's First Generation Trade Reforms Go? <i>An Intermediate Methodology for Comparative Analysis of Trade Policies</i>	June 2003	Lawrence Hinkle A. Herrou-Aragon Keiko Kubota
AWPS 58b	How Far Did Africa's First Generation Trade Reforms Go? <i>An Intermediate Methodology for Comparative Analysis of Trade Policies</i>	June 2003	Lawrence Hinkle A. Herrou-Aragon Keiko Kubota
AWPS 59	Rwanda: <i>The Search for Post-Conflict Socio-Economic Change, 1995-2001</i>	October 2003	C. Obidegwu
AWPS 60	Linking Farmers to Markets: <i>Exporting Malian Mangoes to Europe</i>	October 2003	Morgane Danielou Patrick Labaste J-M. Voisard
AWPS 61	Evolution of Poverty and Welfare in Ghana in the 1990s: Achievements and Challenges	October 2003	S. Canagarajah Claus C. Pörtner

Africa Region Working Paper Series			
Series #	Title	Date	Author
AWPS 62	Reforming The Cotton Sector in Sub-Saharan Africa: <i>SECOND EDITION</i>	November 2003	Louis Goreux
AWPS 63 (E)	Republic of Madagascar: <i>Tourism Sector Study</i>	November 2003	Iain T. Christie D. E. Crompton
AWPS 63 (F)	République de Madagascar: <i>Etude du Secteur Tourisme</i>	November 2003	Iain T. Christie D. E. Crompton
AWPS 64	Migrant Labor Remittances in Africa: Reducing Obstacles to Development Contributions	Novembre 2003	Cerstin Sander Samuel M. Maimbo
AWPS 65	Government Revenues and Expenditures in Guinea-Bissau: <i>Casualty and Cointegration</i>	January 2004	Francisco G. Carneiro Joao R. Faria Boubacar S. Barry
AWPS 66	How will we know Development Results when we see them? <i>Building a Results-Based Monitoring and Evaluation System to Give us the Answer</i>	June 2004	Jody Zall Kusek Ray C. Rist Elizabeth M. White
AWPS 67	An Analysis of the Trade Regime in Senegal (2001) and UEMOA's Common External Trade Policies	June 2004	Alberto Herrou-Arago Keiko Kubota
AWPS 68	Bottom-Up Administrative Reform: <i>Designing Indicators for a Local Governance Scorecard in Nigeria</i>	June 2004	Talib Esmail Nick Manning Jana Orac Galia Schechter
AWPS 69	Tanzania's Tea Sector: <i>Constraints and Challenges</i>	June 2004	John Baffes
AWPS 70	Tanzania's Cashew Sector: <i>Constraints and Challenges in a Global Environment</i>	June 2004	Donald Mitchell
AWPS 71	An Analysis of Chile's Trade Regime in 1998 and 2001: <i>A Good Practice Trade Policy Benchmark</i>	July 2004	Francesca Castellani A. Herrou-Arago Lawrence E. Hinkle
AWPS 72	Regional Trade Integration in East Africa: <i>Trade and Revenue Impacts of the Planned East African Community</i>	August 2004	Lucio Castro Christiane Kraus Manuel de la Rocha

Africa Region Working Paper Series			
Series #	Title	Date	Author
	<i>Customs Union</i>		
AWPS 73	Post-Conflict Peace Building in Africa: <i>The Challenges of Socio-Economic Recovery and Development</i>	August 2004	Chukwuma Obidegwu
AWPS 74	An Analysis of the Trade Regime in Bolivia in 2001: <i>A Trade Policy Benchmark for low Income Countries</i>	August 2004	Francesca Castellani Alberto Herrou-Aragon
AWPS 75	Remittances to Comoros- Volumes, Trends, Impact and Implications	October 2004	Lawrence E. Hinkle Vincent da Cruz Wolfgang Fendler Adam Schwartzman
AWPS 76	Salient Features of Trade Performance in Eastern and Southern Africa	October 2004	Fahrettin Yagci Enrique Aldaz-Carroll
AWPS 77	Implementing Performance-Based Aid in Africa	November 2004	Alan Gelb Brian Ngo Xiao Ye
AWPS 78	Poverty Reduction Strategy Papers: Do they matter for children and Young people made vulnerable by HIV/AIDS?	December 2004	Rene Bonnel Miriam Temin Faith Tempest
AWPS 79	Experience in Scaling up Support to Local Response in Multi-Country Aids Programs (map) in Africa	December 2004	Jean Delion Pia Peeters Ann Kloforn Bloome
AWPS 80	What makes FDI work? A Panel Analysis of the Growth Effect of FDI in Africa	February 2005	Kevin N. Lumbila
AWPS 81	Earnings Differences between Men and Women in Rwanda	February 2005	Kene Ezemenari Rui Wu
AWPS 82	The Medium-Term Expenditure Framework The Challenge of Budget Integration in SSA countries	April 2005	Chukwuma Obidegwu
AWPS 83	Rules of Origin and SADC: The Case for change in the Mid Term Review of the Trade Protocol	June 2005	Paul Brenton Frank Flatters Paul Kalenga
AWPS 84	Sexual Minorities, Violence and AIDS in Africa	July 2005	Chukwuemeka Anyamele Ronald Lwabaayi Tuu-Van Nguyen, and Hans Binswanger
AWPS 85	Poverty Reducing Potential of Smallholder Agriculture in Zambia: <i>Opportunities and Constraints</i>	July 2005	Paul B. Siegel Jeffrey Alwang

Africa Region Working Paper Series			
Series #	Title	Date	Author
AWPS 86	Infrastructure, Productivity and Urban Dynamics in Côte d'Ivoire <i>An empirical analysis and policy implications</i>	July 2005	Zeljko Bogetic Issa Sanogo
AWPS 87	Poverty in Mozambique: <i>Unraveling Changes and Determinants</i>	August 2005	Louise Fox Elena Bardasi, Katleen Van den Broeck
AWPS 88	Operational Challenges: <i>Community Home Based Care (CHBC) for PLWHA in Multi-Country HIV/AIDS Programs (MAP) for Sub-Saharan Africa</i>	August 2005	Nadeem Mohammad Juliet Gikonyo
AWPS 89	Framework for Forest Resource Management in Sub-Saharan Africa	August 2005	Giuseppe Topa
AWPS 90	Kenya: Exports Prospects and Problems	September 2005	Francis Ng Alexander Yeats
AWPS 91	Uganda: How Good a Trade Policy Benchmark for Sub-Saharan-Africa	September 2005	Lawrence E. Hinkle Albero Herrou Aragon Ranga Rajan Krishnamani Elke Kreuzwieser
AWPS 92	Community Driven Development in South Africa, 1990-2004	October 2005	David Everatt Lulu Gwagwa