



Promoting Agricultural Commodity Exchanges in Ghana and Nigeria: A Review Report

Report to UNCTAD

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*The views expressed in this paper are those of the authors and do not necessarily
reflect the views of the United Nations*



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1. INTRODUCTION

1.1 Background and objectives of study

This study is undertaken by the United Nations Conference on Trade and Development (UNCTAD) as part of the EU-funded All ACP Agricultural Commodities Programme (AAACP) which became operational in September 2007 and is intended to help improve incomes and livelihoods of agricultural producers in commodity-dependent developing countries within the ACP Group. The AAACP supports participatory formulation of commodity chain strategies, sustainable commodity production and related policy development, as well as measures to improve access to regional and international markets. The programme also fosters crop and market diversification and access to market-based commodity risk management instruments. In addition to UNCTAD, four international partner organisations are involved in implementing the programme. These are the Common Fund for Commodities (CFC), Food and Agriculture Organisation (FAO), the International Trade Centre (ITC), and the World Bank.

Within the framework of the AAACP, UNCTAD is, among others, “... *mandated to develop and implement projects in the area of agricultural commodity exchanges which must address the needs of producers, processors and exporters of agricultural commodities*” in the target countries. This study has therefore been commissioned by UNCTAD to document lessons learned from the experiences of two West African countries, which should be taken into account in the formulation of UNCTAD’s overall strategy in promoting commodity exchanges. The lessons learnt will be shared at an UNCTAD-ECOWAS Regional Workshop on “Improved functioning of cereals markets in West Africa” and at other relevant regional and international forums. The study focuses on reviewing the state of development of agricultural commodity exchanges in Ghana and Nigeria, including past and current projects, with the aim of identifying critical challenges faced by promoters from the public and private sectors and ways to address them. This analysis will include identifying “... *conditions that are propitious to the development of exchanges in the region*”.

1.2 Approach adopted and structure of report

The approach adopted in the study included extensive desk research on international experience on the benefits and prerequisites for successful agricultural commodity exchanges. Specific attention was given to cases from African countries in the review of international experiences. As follow up to the desk review, there were consultations with key players in the commodity sectors in the target countries, involving telephone and email consultations and direct meetings with relevant officials during field visits. The stakeholders consulted included officials and promoters of commodity exchanges as well as banks, collateral management companies and regulatory agencies.

The report is structured as follows:

- Section 1 consists of this introductory chapter and Chapter 2, which focuses on the benefits of successful agricultural commodity exchanges and their potential role in addressing some of the challenges in agricultural marketing systems. The prerequisites for establishing agricultural commodity exchanges are also discussed in Chapter 2.
- Sections 2 and 3 report on the review of Ghana and Nigeria in Chapters 3-4 and 5-6 respectively. Areas covered include general country background information relevant to the performance of an exchange such as the state of the economy, the financial sector and the agricultural as well as other commodity sectors. Also included is a review of operations or efforts to promote commodity exchanges in the two countries.
- Section 4 (Chapter 7) summarises conclusions and recommendations from the study.

2. OVERVIEW OF COMMODITY EXCHANGES IN AFRICA

2.1 Introduction

There has been growing interest in promoting commodity exchanges in Africa since the early 1990s when agricultural marketing systems were liberalised. Ghana, Nigeria, Kenya, South Africa, Uganda, Zambia and Zimbabwe are among African countries where agricultural commodity exchanges were established in the 1990s as part of reforms to modernise and improve the performance of agricultural commodity marketing systems after a general scaling back of the pervasive interventions by the state in supply of farm inputs, provision of agricultural credit and produce marketing systems. Improving agricultural marketing systems is increasingly being seen as important in ensuring successful implementation of various agricultural development initiatives which have been launched to raise agricultural output and productivity in Africa. Among these initiatives is the Comprehensive Africa Agriculture Development Programme (CAADP), a regional initiative which was launched by the New Partnership for Africa's Development (NEPAD) with the explicit target of achieving 6% growth in agriculture. Pillar II of CAADP focuses on "improving ... trade-related capacities for market access" primarily because of recognition that increased farm productivity cannot be achieved without major improvements in the functioning of African agricultural marketing systems. Successful agricultural commodity exchanges, though by no means a panacea for all the weaknesses in the agricultural sectors in Africa, is seen as having the potential to improve the functioning of agricultural markets by improving price formation, market transparency and regional trade, thereby raising farm output and rural incomes as well as enhancing food security.

We define a commodity exchange as a market institution that provides a physical or virtual (electronic) venue which brings together buyers and sellers to trade usually through a group of registered brokers. Trading in this marketplace may be in physical commodities or in derivatives, which are financial contracts/instruments, whose values are derived from the value of an underlying asset, which can be commodities, equities (stocks), mortgages, bonds, interest rates and exchange rates or indices such as stock market and consumer price indices. They are usually used to manage the risk of unexpected reduction in the value of the underlying asset. Exchange trading emerged in the 1840s, when Chicago became a commercial centre with railroad and telegraph lines connecting it with the East of the United States of America. Prior to that, grain traders in Japan had experimented with the idea in 1730. Chicago attracted Midwest farmers hoping to sell their wheat for a good price. In 1848, a central place was opened where farmers and dealers could meet to deal in "spot" grain - that is, to exchange cash for immediate delivery of grains such as wheat. The Chicago Board of Trade (CBOT) was launched in 1864 and followed in 1877 by the London Metal Exchange. Though there were early initiatives in India and Argentina to promote commodity exchanges, it was only in the 1990s that the number located outside of the OECD countries grew very rapidly (Rashid et al. 2008).

In the rest of this chapter we discuss the potential benefits of commodity exchanges in relation to constraints that characterise the agricultural marketing systems in Africa. The essential building blocks for successful agricultural commodity exchanges are also identified as a basis for subsequent assessment of exchanges being promoted in Ghana and Nigeria (Sections 2 and 3).

2.2 How can commodity exchanges improve African agricultural marketing systems

The theoretical benefits from commodity exchanges, which are outlined above, will be considered relevant to African agricultural economies if they provide an effective means to address some of the underlying factors contributing to inefficiency in agricultural marketing systems. In most African countries the agricultural marketing systems are characterised by high food distribution margins and seasonal price variability. For instance, spatial margins are quite high, about 21% in Malawi, 23% in Ethiopia and 37% in Ghana. Temporal marketing margins are similarly high, ranging between 32% in Malawi and over 100% in Ghana¹. Consequently, producer margins are substantially squeezed, thereby effectively limiting the ability of small-scale farmers to adopt “on-the-shelf” farm technology that can raise agricultural productivity and reduce poverty in much of Africa.

While exchange infrastructure, consisting of the trading, delivery and payments systems, are no panacea to some of the factors contributing to inefficiency in agricultural markets in most African countries, they offer a means to address others, such as reducing transaction costs, improving storage and easing access to trade finance. Transaction costs are very high in agricultural markets in Africa. For traders, search and transportation costs tend to be the highest costs mainly because transactions often entail personal interaction with producers². Lack of formal quality/grading standards creates uncertainty about the quality and quantity attributes of goods being traded³, hence the need for physical sampling, which raises the cost of transacting. Further, most traders are not involved in seasonal storage or speculation but operate on small volumes over short distances, storing their goods for less than a month. This means that the stabilizing function that traders play in other markets through temporal and spatial arbitrage is severely limited in African agricultural markets.

Lack of efficient storage facilities is one of the factors which limit temporal arbitrage and contribute to high seasonal price variability in Africa. During the pre-liberalisation period, where the state played a major role in food marketing, especially of staple grains, considerable investment in storage infrastructure was made by donors and African governments. These facilities have sometimes remained under public sector control long after the role of parastatal marketing boards have either been abolished or substantially scaled down. Private sector investment in storage infrastructure is often concentrated in urban areas and tend to support import/export trade rather than domestic trade in the food sector. Storage management capacity is also highly variable in many countries and lack of formal grading standards make it difficult to assure storability of the produce as well as its valuation, thereby making collateralisation of commodities very difficult. As a consequence, storage in food surplus-producing areas is largely undertaken by ill-equipped smallholder farmers, resulting in very high post-harvest losses.

Lack of inventory credit limits the capacity of traders to store while similarly discouraging producers from holding inventories, as they are compelled to sell the bulk of their output immediately after harvest, when prices are very low, primarily to meet the cash needs of farm households. Lenders tend to be reluctant to provide inventory finance partly because of lack of transparent systems of price discovery as well as institutions and instruments for

¹For further reading on this see Badiane et al. (1997) and Coulter et al. (2000).

² Empirical evidence from studies by Fafchamps and Gabre-Madhin (2006) in Benin and Malawi confirm this assertion.

³ For instance, in Ghana, the average weight of a “maxi-bag” of maize differs from location to location. Zambia has a more formalised maize marketing system, but grain sampling is usually by sight and highly subjective. This increases the risk of cheating on weights and quality, and makes physical sampling imperative.

managing price risk. Furthermore, uncertainty regarding government policy on food markets – e.g. delivering subsidised grains or ad hoc waiver of duties on imported food in response short-term price increase – discourage traders from holding significant stocks while making lenders even more risk averse.

Prior to the early 1980s, African governments intervened heavily in agricultural markets with the aim of addressing these constraints. The institutional vehicles and policy framework typically employed included pan-territorial and pan-seasonal pricing regardless of the cost of assembling produce from particular regions; enforcement of formal commodity standards for most of the crops marketed by parastatals, especially the export commodities; sole distribution by the state of subsidized inputs; and promotion of cooperatives as intermediaries in the marketing chain⁴. However, these interventions became an unsustainable fiscal burden and failed to produce any significant increase in per capita output in food crops.

In theory, commodity exchanges can be an important part of interventions to address the identified constraints because of the following economic benefits:

- a) Exchange trading generally saves time and cost of transacting as well as reduces risks faced by counterparties, who are assured of a fair deal (arising from competitive trading), guaranteed payment for what is sold and delivery of what is paid for.
- b) The system creates a means by which sellers and buyers are brought together to trade on the basis of reliable information on the quality, quantity and location of commodities to be traded. This reduces the cost of sourcing produce for traders and processors, while lowering the cost of accessing markets for farmers, especially for premium quality produce. It avoids the high-cost and time-intensive process of physical sampling of goods before purchase, which is predominant in the informal agricultural trade in the country. This is because the quality and quantity of the traded product is assured, thus making 'sight-unseen' trade possible, implying sellers can sell to buyers in a wider geographical area than their immediate location. For instance, a farmer group in a rural location can sell their deposited crop to traders in the regional markets without the need for any physical contact, making the trade more competitive because many more traders can participate.
- c) The guarantee of delivery by the exchange, based on the guarantee by warehouse operators, reduces the risk of non-performance of trade contracts. Sellers are also assured of payment for the commodity sold, with systems being in place to minimise the risk of default by buyers, especially when the market moves against them. The greater security in trade transactions provided, leads to significantly lower cost (including time lost) associated with contract enforcement, especially where litigation is time consuming and expensive.
- d) This guarantee also makes it more feasible for market players to secure inventory finance during the harvest season – by producers to defer sale, and traders and processors to stockpile. This will moderate seasonal variability in the supply and prices of agricultural commodities to the benefit consumers, who will pay relatively less for food during the lean season; while producer prices at harvest will be relatively higher. The assurance of stable supply of quality produce at predictable prices will also encourage investment in agro-processing.

⁴ Akiyama et al. (2001) discuss this issue very eloquently.

- e) Increased availability of inventory finance is also likely to boost non-traditional exports by reducing uncertainty regarding contract performance faced by importers. This will be through enabling exporters to stockpile using inventory finance, thereby assuring more regular supply and to guarantee delivery on schedule of commodities of known quality and quantity.
- f) Exchange trading improves collection and dissemination of market information to all players. Prices on the exchange, discovered through a transparent process, are widely disseminated. Brokers, who are expected to facilitate trade and provide market advice to their clients, receive and analyse price-sensitive market information, thereby assisting buyers and sellers in making trade decisions.
- g) The exchange represents a transparent and often reliable means by which lenders can liquidate collateralized commodities in the event of default by the borrower. Therefore it facilitates access to commodity finance.
- h) As the exchange matures from a spot market into offering various risk management instruments, including futures and options contracts, lenders will use such instruments to hedge price risks. By so doing, they will reduce credit risks, leading to lower cost of borrowing. The formal market in commodities will also attract investors intending to profit from price movements. Their involvement will bring added liquidity to the market to the benefit of all players.
- i) Domestic savings in most African countries is not only low, but wealth is often held in non-liquid form, especially in rural areas. This limits growth prospects through making loanable resources less available. The promotion of a vibrant commodity exchange is one means by which investment in remunerative savings products which are also liquid and be encouraged. Furthermore, banks can move beyond balance sheet financing and lending against immovable property (in prime urban locations), which predominate in Africa and exclude many entrepreneurs, especially those in agriculture, from the credit market. This is because a credible warehouse receipt (WR) system that underpins the operations of an exchange allows stored commodities to be used as collateral for loans. This will encourage banks to explore lending opportunities beyond financing short-term government debt instruments as occurs in most African countries.

2.3 Pre-requisites for establishing agricultural commodity exchanges

Though many African countries have shown interest in promoting agricultural commodity exchanges, most of the exchanges have been successful (UNCTAD 2007). This is amply demonstrated in our desk-based review of the commodity exchanges in Africa summarised in Box 1 below. With the notable exception of the JSE/SAFEX in South Africa (formerly the South African Futures Exchange of SAFEX) none of the exchanges reviewed were able to effectively trade in futures and other derivatives. Indeed, they were also unable sustain even basic spot trading with the exception of the Zimbabwe Agricultural Commodity Exchange (ZIMACE), which traded in grains very successfully between 1994 and 2001 but was abolished as part of measures by the Government of Zimbabwe to control the marketing of staple grains in the country.

Box 1: Overview of agricultural commodity exchanges in Africa

The **Uganda Commodity Exchange (UCE)** was incorporated in 1998 by the Uganda Cooperative Alliance (UCA), Uganda Coffee Trade Federation, Uganda Farmers Federation, the Uganda Export Promotion Board, UNEX (a private coffee trading firm in which UCA has interest), Olam Uganda Limited (a multinational coffee trader) and the Africa 2000 Network and Satnet. The Government of Uganda had no equity stake in the UCE but supported it by initially funding its operating costs (including staff remuneration). The main commodities traded by UCE include coffee, maize, sesame, beans, soybeans and rice and the minimum lot size was set at 10 tonnes. Until 2006 the UCE traded without a network of accredited warehouses and verification of quality and quantity of commodities offered for sale was typically by means of on-site physical sampling by personnel of the exchange. This process was costly and unreliable and led to non-performance of contracts, particularly by sellers, which undermined confidence in the UCE, leading to very low trading volumes (only 11 contracts were traded between March 2002 and June 2004). The UCE is being restructured with support from the EC to enhance its prospects of viability. As part of this process, it is building on a WRS developed for cotton and coffee under a project funded by the Common Fund for Commodities (CFC). Under the CFC project, the Government promulgated warehouse legislation recognising warehouse receipts as negotiable documents of title. It also instituted regulatory oversight of the receipt system, the enforcement of which has been delegated by the Minister of Trade to the UCE. The restructuring process is yet to be completed and the UCE is yet to achieve operational viability.

The **Kenya Agricultural Commodities Exchange (KACE)** was initiated by a private entrepreneur but has been supported by various donors, including USAID, Rockefeller Foundation, the Hans Seidel Foundation of Germany and CTA in the Netherlands. To date, its major achievements have been in collecting and disseminating market information as well as operating an electronic bulletin board through which sellers and buyers “advertise” commodities they intend to sell or buy. KACE has not instituted any standards pertaining to grades and minimum lot sizes and has no designated warehouses as licensed delivery locations.

The **Zimbabwe Agricultural Commodities Exchange (ZIMACE)** was incorporated in 1994 and its member-shareholders were mainly producer associations, millers, major grain traders and the state-owned Grain Marketing Board (GMB). It was run as a private operation funded by fees from members and commissions. The main commodities traded were maize, wheat and soybeans. Daily trading sessions were held on the floor of the exchange, using open outcry and trading was through appointed brokers. The designated delivery locations were warehouses belonging to the GMB, which met specified warehouse standards. Warehouse inspection was undertaken on behalf of ZIMACE by an inspection company (ITS Socotec). Standard ZIMACE warehouse receipts issued for deposited commodities and formed the basis of trading on the exchange. By 2001, the value of contracts traded by ZIMACE was about US\$500 million – the success primarily due to the integrity of the underlying systems that guaranteed delivery and payment. Apart from JSE/SAFEX, the ZIMACE was the most successful spot/cash agricultural commodity exchange in Africa until 2004 when the Government of Zimbabwe introduced strict controls in the grain trade and consequently banned it.

The **Ethiopia Commodity Exchange (ECX)** is the most recent Spot/Cash exchange in Africa, which was launched in 2007. It is owned by the Government of Ethiopia, which funded the initial capitalisation of about US\$20 million, with some contribution by external partners. Government also underwrites all performance risks. However, ECX is run by a board representing farmer cooperatives, the state-owned grain trading enterprise and trading members. The trading platform involves the use of open outcry but an electronic trading system is being developed and is expected to be launched in the near future. Coffee is the main commodity traded by ECX but Maize, Wheat, Sesame and Beans are also listed for trading. The standard lot size is five (5) tonnes – tailored to current average load per small trucks in rural Ethiopia and to ensure broad participation, including small-scale market players. Clearing and settlement are handled by three (3) partner settlement banks and the contracts are for immediate delivery of the physical commodities. The ECX owns and operates a network of 10 warehouses in the main production areas in Ethiopia as well as additional 20 remote terminal centres in major market centres. It also operates an electronic warehouse receipt (EWR) system controlled by the Exchange Central Depository. The EWR represents legal title and is transferable and negotiable on the exchange. It may be used for purposes of securing collateralised finance and may, upon request, be materialised into a paper receipt.

The **South Africa Futures Exchange (SAFEX)** was established by private sector players in 1996 and is by far the most successful exchange in Africa – it was taken over by JSE Securities in May 2001. Most large-scale producers in South Africa sell their grains through SAFEX, usually through brokers. There are cases where some producers sell directly to processors, but this is relatively small and declining compared to sale through the exchange. The benchmark price in such cases is usually the SAFEX price. Where producers wish to defer sale, they can obtain finance against the SCafex-backed silo certificates. In such cases, the borrower is usually required to hedge against any downside price risks using futures and options traded on the exchange. As a result of the availability of price risk management instruments developed on the basis of the receipt system, banks have been able to structure production finance, requiring borrowers to deposit their produce with certified silos. Their track record in deposits is used in determining their output, against which finance is provided. Buyers of SCs include processors, who may take delivery of the underlying commodity on presentation to the silo operator; or investors. The investors participate in the market primarily to make gains from anticipated price movements, but play a crucial role of making the market liquid and enabling risk sharing. The main commodities traded by SAFEX are maize (white and yellow), wheat, sunflower seeds and soybeans. The standard lot sizes per contracts are 100 tonnes of maize, and 50 tonnes of wheat and sunflower seeds and 25 tonnes of soybeans. On the average, SAFEX trades futures and options contracts representing about 200,000 tonnes of maize per day. Only a small and continually declining portion of these contracts end with physical delivery as the bulk of the trading is for hedging. This is despite the fact that all products traded can be physically delivered at expiry in fulfilment of a futures contract. The SCs were initially paper documents but sheer load of paper documentation and risk of loss led to the adoption of an electronic receipt system – though paper **copies** are still issued to depositors. Most depositors obtain inventory finance secured with the SCs, which are then transferred to the lender and can be liquidated through the exchange in the event of default by the borrower.

From the review of successful and unsuccessful commodity exchanges, summarised above (Box 1), we conclude that systems that guarantee contract performance in terms of delivery of and payment for commodities traded are critical in attracting market players to a commodity exchange. The prerequisites for a successful exchange are illustrated in Figure 1 based on the case of JSE/SAFEX.

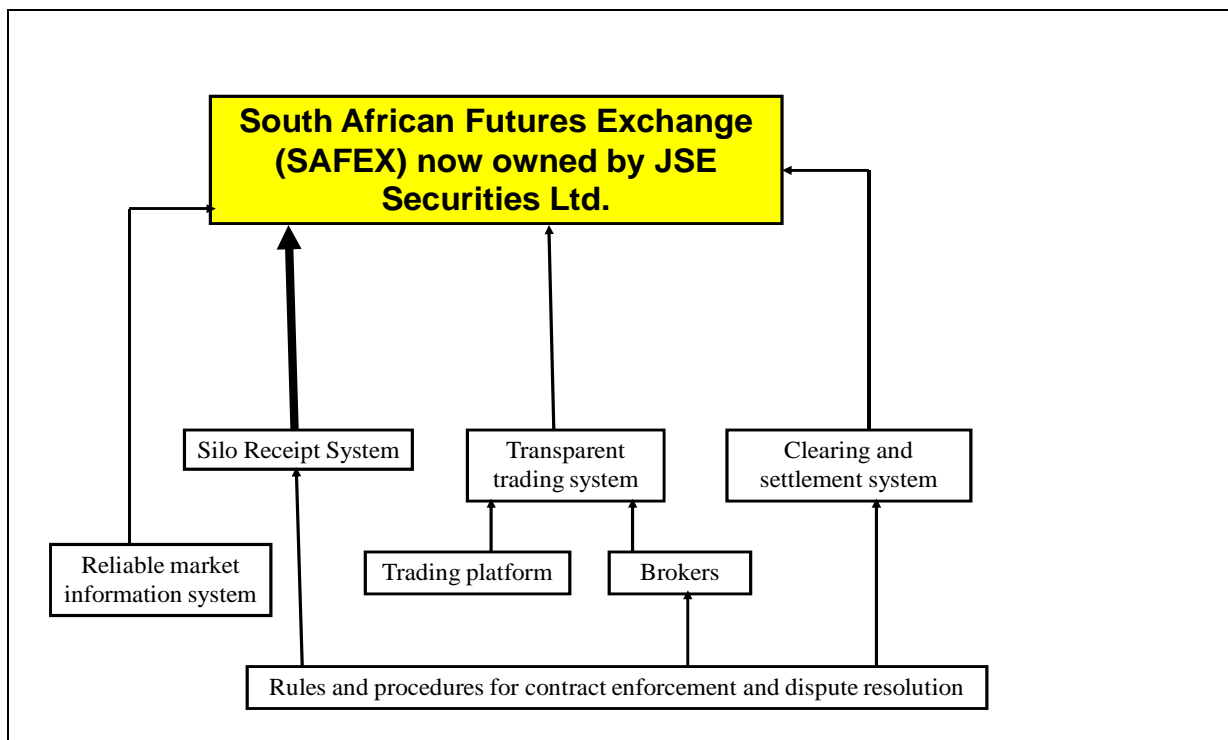


Figure 1: Underpinning structures of JSE/SAFEX

Historically, the open outcry or manual system has been the means by which exchanges conduct open and competitive trading. The system involves a method of communication between brokers and their supporting professional staff shouting and using hand signals to transfer information about buying or selling orders on the trading floor (also called a *pit*). Price discovery is transparent and trade is impersonal as the identity of actual buyers and sellers is not disclosed, thereby minimising the potential for collusion. Partly as a result of advancements in information technology, this system is being displaced globally by electronic trading platforms electronic trading systems. The most basic form of electronic trading systems, which can be described as *information or bulletin boards*, offer a platform for sellers and buyers to trade over a wide geographical area, but cannot be described as formal commodities exchange. An example is *Esoko* (formerly Tradenet) which offers an vehicle that traders in West Africa can use⁵. Most exchanges around the world have adopted electronic trading platforms which facilitate trading by brokers on behalf of buyers and sellers, with the exchanges guaranteeing the integrity of contracts. These systems have become more common, particularly as a result of the emergence of dematerialised or electronic forms warehouse receipts. SAFEX, which is currently owned by JSE Securities, uses an electronic trading platform. A similar system was customised and successfully installed for trading by the Uganda Commodity Exchange (UCE). These systems are deemed to be faster, relatively cheaper, more efficient for users, and less prone to manipulation.

Commodity exchanges usually trade standardized contracts, thereby eliminating the costs and risks associated with contract negotiation and enabling a maximum number of buyers to bid on known contracts and so increase market liquidity and enhance price discovery. The standard contract usually describes the specified commodity in terms which imply that traders only need to agree on the price and quantity of standard lots to be traded. Defining the minimum lot size for contracts serves the important economic purpose of encouraging aggregation of commodities.

The involvement of brokers helps assure delivery of the commodity sold by ensuring that appropriate procedures are initiated for transferring title to the underlying commodity to the buyer. They also guarantee payment to the seller by ensuring that buyers provide adequate funds in accessible accounts for settlement of deals. In addition, exchange-registered brokers offer clients other important advantages including the ability to transact with a range of trade counter-parties with whom the client might otherwise have difficulty in doing business; and offering specialised advice on how and when to approach the market.

Commodity exchanges typically institute and robustly enforce relevant procedures, rules, regulations and guidelines to regulate the conduct of members, brokers and transactors. They are often able to take disciplinary action against parties in the event of non-compliance with the rules and procedures. They also tend to establish formal systems for quick and low-cost resolution of trade disputes.

A clearing and settlement system that assures payment to sellers as well as minimizes over-exposure of counterparties is essential. Financial institutions which are members of the exchange usually offer clearing services. Reliable and timely dissemination of such market information as would ensure informed decisions by various parties, local and regional, who intend to trade. Informed decisions are critical to market efficiency. The information counterparties need include not only market prices, but also supply and demand information that allow various parties to take a position on what price levels are likely to be in future and, therefore, what specific marketing strategies to adopt.

⁵ The site address is www.esoko.com .

In matured markets where trading is predominantly in derivatives, most contracts do not lead to delivery of the underlying commodities. However, even in such cases and much more so in the less sophisticated spot markets, assurance of delivery of the underlying commodity is critical to the performance of an exchange. Most of the non-performing commodities exchanges in Africa are in that state because of lack of reliable delivery systems. A credible warehouse receipt system (WRS) has been found to be critical to assuring delivery of commodities traded on an exchange. The guarantee of delivery of the stored commodity against a warehouse receipt is critical to the functioning of the system, whether it is regulated or not. In an unregulated WRS, the guarantee rests mainly on the integrity of the collateral manager, but under a regulated WRS it is assured by means of the following:

- Licensing of warehouses and warehouse operators who meet clearly specified requirements, including meeting and maintaining adequate capital, having insurance cover for fire and allied perils/burglary/employee fidelity, and a performance bond.
- Robust enforcement of licensing/certification regulations involving regular, unannounced inspections by a Warehouse Regulatory Agency, which also ensure proper grading and storage of receipted commodities.
- Systems and procedures that ensure that only secure receipts are issued by bona fide parties. For the WRS to support exchange trading, the warehouse receipts issued should be transferable – implying they can be sold to any buyer, who can exercise same rights to delivery as the original depositor, making it easier to liquidate title to the underlying commodity where financing has been secured against the receipt.
- Other pre-requisites for a viable receipt system include a national network of efficient warehouses run by credible operators; enforceable and trade-friendly weight and grading standards; reliable and timely market information on indicative prices from key markets as well as essential supply and demand information, including output forecast, carry-in and carry-out stock data, imports and exports and supply/demand of substitutes; and supportive policy environment as state interventions in commodity markets, particularly those of an ad hoc and discretionary nature, distort incentives for private storage.

2.4 Conclusion

It is apparent from the discussions in this chapter that the development of commodity exchanges can improve the performance of commodity marketing and finance systems. It is in recognition of the potential benefits that efforts have been made to establish exchanges in Africa, particularly since the 1990s when agricultural markets in most African countries were liberalised. However, most of these efforts have not been successful, largely because the prerequisites for success are either missing or under-developed. In the next sections we review progress made in promoting commodity exchanges in Ghana and Nigeria and what can be done to improve the prospects for success.

3. Ghana and promotion of agricultural commodity exchanges

3.1 General country background

Ghana is a West African country bounded by Côte d'Ivoire to the west, Burkina Faso to the north, Togo to the east, and the Atlantic Ocean to the south (Figure 2). Well endowed with natural resources, Ghana has roughly twice the GDP per capita of the poorest countries in the region. It has substantial untapped agricultural potential – less than 20 percent of available arable land is under cultivation – due in part to some of the constraints discussed in Section 3.3.



Figure 2: Map of Ghana

Ghana's population is estimated at over 23 million, about 50 percent of which live in urban areas. The country's rapid rate of urbanisation, which is estimated at 3.5 percent per annum, creates market potential for industrial processing of agricultural produce including the major staple grains and root crops. However, this potential is yet to be significantly exploited as a result of bottlenecks in the agricultural value chains (Section 3.3). Ghana has enjoyed a long period of political stability, particularly since 1992 when constitutional rule was instituted. Its media is relatively free⁶ and respect for the independence of the judiciary has been growing since 1992. These conditions have contributed to making Ghana an attractive location for investment in the West African region. However, the commodity sectors have not been able to attract the required volumes of investment and the country remains well-endowed (with natural resources) but poor and heavily dependent on international financial and technical assistance.

⁶ Reporters Without Borders in their 2008 Worldwide Press Freedom Index classified the media environment as being 31st out of 173 (with first being the most free).

3.2 Ghana's macroeconomy and financial system

As depicted in Table 1, growth in the Ghanaian economy has been accelerating in the last decade, rising from 5.2 percent in 2003 and reaching 6.3 percent in 2007. Though this sustained GDP growth rate is historically high and impressive by Sub-Saharan African standards, it is still lower than the average 10% annual growth rate set by policymakers with the aim of transforming Ghana into a middle-income country. Since agriculture remains the dominant sector (representing close to 40 percent of GDP), its performance will impact on the achievement of the country's accelerated growth objectives.

Table 1: Macroeconomic Indicators (2003 – 2007)

Indicator	2003	2004	2005	2006	2007
Population ('m)	19.9	20.4	20.9	21.4	22.0
Real GDP Growth	5.2	5.6	5.9	6.2	6.3
GDP (US \$'bn)	7.5	8.8	10.7	12.5	14.7
GDP Per Capita (US\$)	383.9	435.6	513.2	601.9	668.2
91-Day T-Bill Rate (%)	18.1	16.4	11.5	9.9	9.7
BOG Prime Rate (%)	25.7	19.1	15.5	12.5	13.5
Inflation (%)	23.6	11.8	14.8	10.5	10.3
Average Lending Rate (%)	24.4	28.8	26.0	24.3	24.0
Remittances (US\$m)	2,164	2,654	2,124	2,120	2,130
Official Reserves (US\$m)	1,427	1,816	1,951	2,325	2,600
Import Cover (months)	4.1	3.7	3.2	3.3	3.2
Exchange Rate to US\$	0.88	0.90	0.91	0.92	0.96
External Debt (US\$'bn)	8.0	6.2	6.2	2.2	2.6
External Debt as % GDP	109.9	95.8	59.2	22.3	17.9
Sovereign Ratings (Fitch)	-	-	B+	B+	B+
Sovereign Ratings (S&P)	B-	B+	B+	B+	B+

Source: Bank of Ghana and the Economist Intelligence Unit

Inflation generally trended downward over the period from 2003 to 2007, partly due to fiscal prudence, which reduced public sector borrowing and led to a steady fall in Treasury Bill rates (from 18.1% in 2003 to 9.7% in 2007 for 91-day T-Bills). Lower inflation and steady inflow of remittances kept the currency (the Ghana Cedi) relatively stable. However, this macroeconomic stability came under pressure in 2007/08 as a result of widening fiscal deficits, oil price shocks, variability in domestic food supply and the substantial hikes in global food prices⁷. The Central Bank responded by raising interest rates and government adopted short-term measures to stabilise food prices while containing non-food inflation. However, long-term food price stability, which is critical in maintaining low levels of inflation in Ghana, requires policies and programmes to increase domestic food production.

Ghana has a diverse and competitive financial sector comprising 24 registered universal banks, 122 rural and community banks, and 37 Non-bank Financial Institutions (NBFI) operating in the country. Thirteen (13) of the NBFIs are operating as Savings and Loans companies and five are 5 operating as leasing companies. There has been a significant surge in the overall size of the banking industry (measured in terms of assets), as well as decline in the market share of the top five banks⁸. Financial depth, as measured by the M2/GDP ratio, has steadily improved since the mid-1990s (from 19% in 1996 to 37% in

⁷ Databank CPI Update of 9 May 2008 and Press release by Bank of Ghana Monetary Policy Committee (19 May 2008).

⁸ Bank of Ghana Financial Stability Report (Vol. 8 No. 3), May 2008.

2006)⁹. Private sector access to credit has continued to improve since 2000, with its share of domestic credit rising from 35.2% in 2000 to 57.7% in 2006. However, credit to the commodity-related sectors, especially the agriculture sector, remains very low largely because banks perceive the sector as highly risky. The cost of borrowing is also high, with average nominal lending rates offered in 2009 by the commercial banks hovering around 25 percent. Most medium-scale enterprises in the commodity sector obtain credit from NBFIs at interest rates of between 8 and 10 percent per month (i.e. 96 to 120 percent per annum).

3.3 Developments in Ghana's commodity sector

Ghana is primarily a commodity-dependent country. Merchandise exports are dominated by primary commodities, including cocoa beans, gold and other minerals and timber. The share of processed products (usually classified under "non-traditional exports") in total exports is completely dwarfed by primary commodity exports, though it has risen from 17.9 percent in 1997 to 22.4 percent in 2008¹⁰. Growth in the export of processed products is partly due to increasing domestic processing of cocoa beans into cocoa paste and cocoa butter, which is exported. This has been driven by the policy objective of the Government of Ghana, which is to encourage domestic processing of 40 percent of total cocoa output. Export of plywood and veneers, rather than timber logs, especially into the West African market, has also maintained steady growth as has growth in export of canned tuna.

The discovery of oil with potential for commercial exploitation is one of the most significant recent developments in the commodity sector in Ghana. Commercial production of oil is expected to begin in last quarter of 2010. There is concern among policymakers, lawmakers and the general public about the need to avoid the so-called "oil curse". One way of forestalling this will be to continue to invest in enhancing Ghana's naturally-endowed capacity to produce renewable resources in the form of agricultural commodities.

Official statistics indicate that production of agricultural commodities has recorded significant improvement since the late 1990s, with average growth in output rising from 3.6% in 1999-2002 to 5.8% in 2003-2006¹¹. However, average yields for the major agricultural commodities have barely risen since 2000, implying that the improved sector growth is largely due to extensification of production, hence raising concerns about potential adverse impact on the environment as well as on land pressures and related strife in rural communities. Quite clearly, there exists considerable potential for productivity improvements in most crop sub-sectors as current yields for most crops, including those listed in Table 2, are about 60 percent lower than attainable yields. For instance, though the cocoa sub-sector recorded average growth in output of over 16 percent between the mid-1990s and 2005 as a result of government interventions including controlling producer prices, sponsoring mass spraying of cocoa farms and promoting the use subsidised fertiliser, it is possible to increase yield by over 60 percent if production technology is further improved¹².

Indeed growth in output of the major food and industrial commodities (Table 2), which account for almost 80 percent of agricultural GDP, is reported to have stagnated partly as a result of low farm productivity. Increasing output and productivity in the non-cocoa crop sub-sectors can be an important plank in Ghana's poverty reduction strategy as the incidence of

⁹ Source: Institute of Statistical, Social and Economic Research (ISSER) (2008) "The state of the Ghanaian Economy in 2007", ISSER, Legon, August 2008.

¹⁰ Source: Reports from Ghana Export Promotion Council.

¹¹ Source: Institute of Statistical, Social and Economic Research (ISSER) (2008) "The state of the Ghanaian Economy in 2007", ISSER, Legon, August 2008.

¹² For further discussion of these issues see Vigneri (2007), Breisinger et al. (2008) and Wolter (2008).

rural poverty is significantly higher among non-cocoa-growing farmers, especially in Northern Ghana.

Table 2: Production of major crops in Ghana

Commodity	Annual output (metric tonnes)
Grains/oilseeds:	
Maize	1,294,829
Rice	244,455
Millet	153,450
Sorghum	291,142
Groundnuts	412,789
Cowpeas	135,010
Soybeans	47,025
Cashew	42,378
Oil palm	380,300
Starchy perishable staples:	
Cassava	10,649,685
Plantain	2,790,780
Yam	4,134,405
Cocoyam	1,704,970

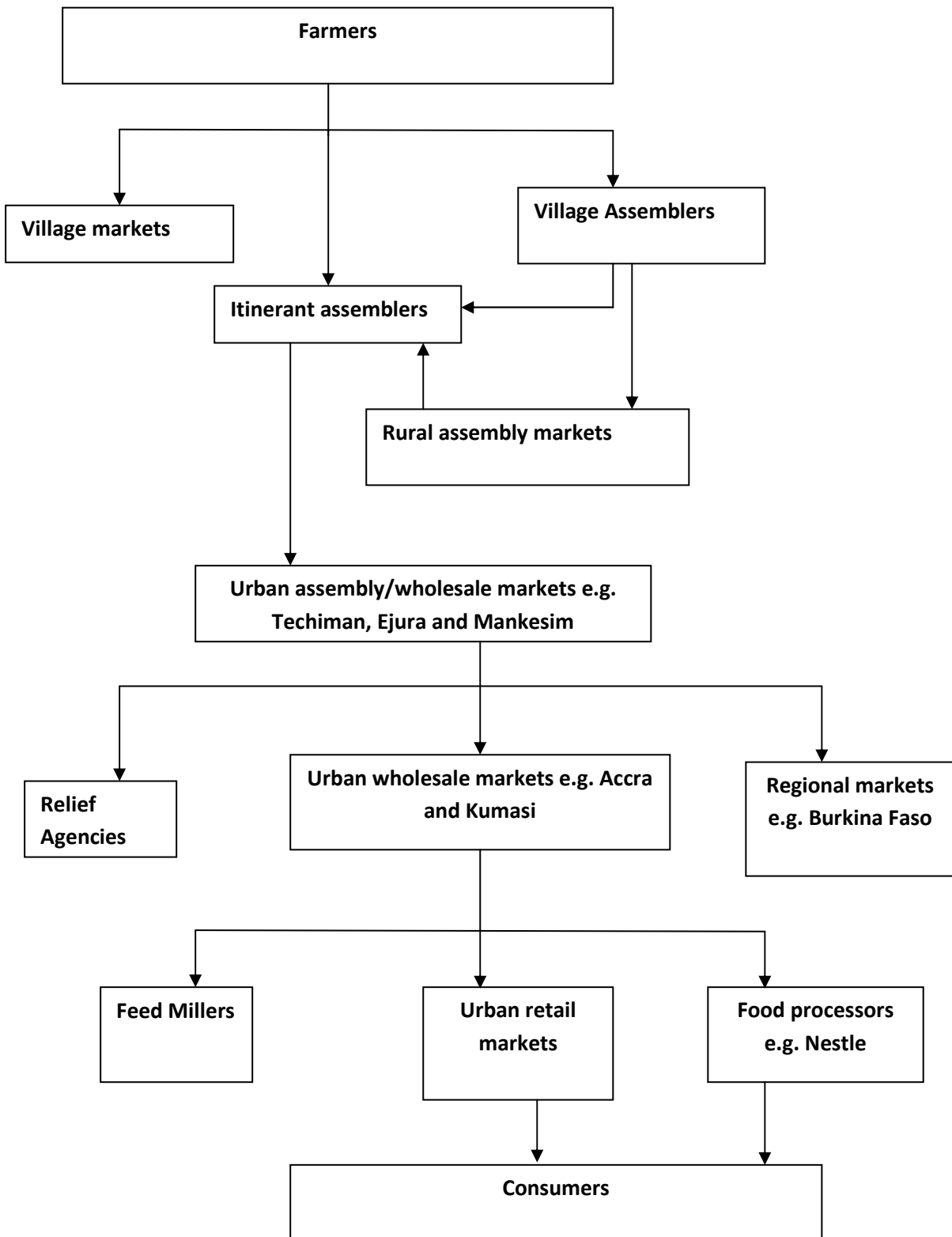
Source: Data from SRID, Ministry of Food and Agriculture (MOFA).

Raising farm productivity will require not only adoption of improved production technology such as planting high-yielding varieties as well as improved access to farm extension and finance but also measures to modernise and improve efficiency in the country's agricultural marketing systems. Agricultural markets in the country are generally constrained by a number of factors that increase transaction costs and lead to lower margins for producers, higher procurement cost for processors and higher consumer prices. We illustrate constraints in the domestic food marketing chain with the case of the maize marketing chain (Figure 3 below) – maize is the most important cereal in Ghana.

Ghana's marketing chain for maize is long and involves several intermediaries and multiple handling. Micro and small-scale, who are primarily responsible for bulking at the farmgate, tend to be severely under-capitalised. They are often required to provide cash advances to farmers as a means of assuring supplies but have to extend trade credit, ranging between 5 – 14 days to traders in the urban wholesale markets. Their inability to access to formal finance contributes to the acute liquidity constraints in commodity marketing and reduces their capacity to absorb significant surpluses, hence depressing farmgate prices at harvest.

The considerable time and related cost in assembling small volumes of produce from widely-dispersed smallholder farmers, uncertainty about available supplies and poor contract enforcement tend to increase transaction costs in the agricultural trade in Ghana. Lack of formal grading standards makes it difficult for impersonal trade to occur, thereby limiting farmers' marketing options to few traders and weakening their bargaining position. Within the trade, farmers, traders and processors are fully exposed to price risks with little or no hedging opportunities. The uncertainty created discourages investment in productivity-enhancement by farmers. It acts as a disincentive to traders and processors in undertaking investments likely to lead to improved efficiency in the trade. Most of the trade in agricultural commodities into regional markets such as Burkina Faso and Togo is informal and face similar constraints as those in the domestic trade. In addition, ad hoc agricultural trade policies often undermine the development of formal regional trade, leading to loss of competitiveness by Ghanaian farmers.

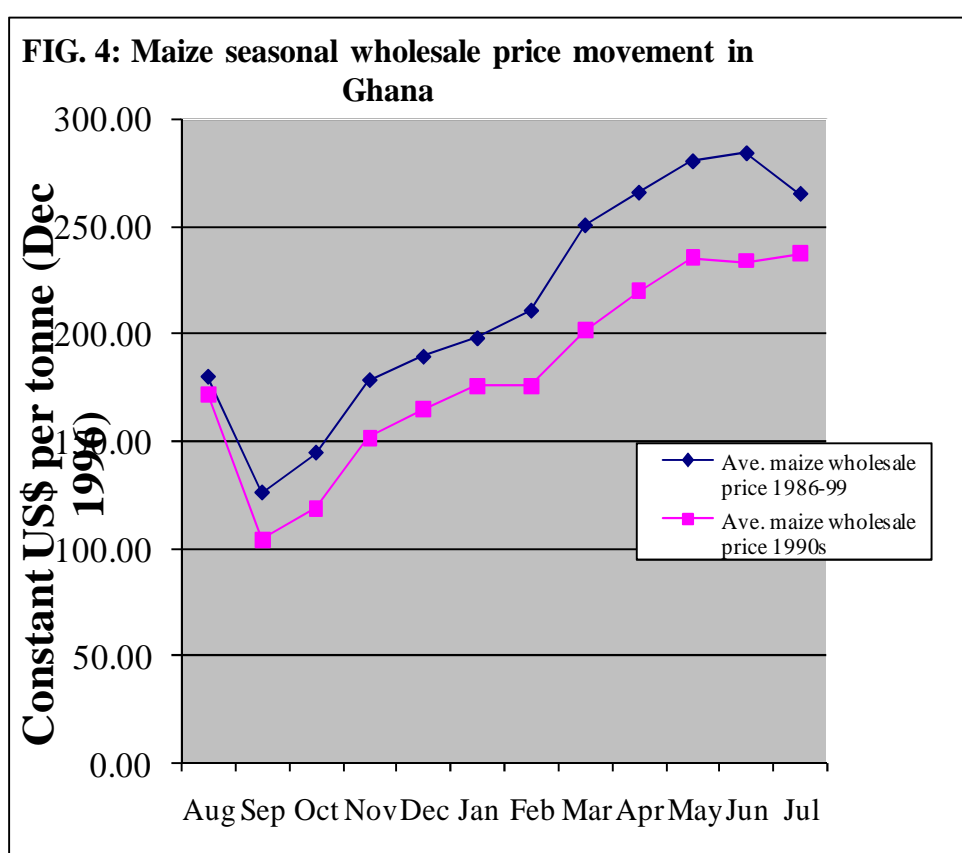
FIGURE 3: THE MAIZE MARKETING CHAIN IN GHANA



Source: Onumah and Aning (2009).

3.4 Potential benefits of exchange trading and WRS to grain sub-sector

As noted in the preceding sub-section, lack of liquidity is symptomatic in the trade in agricultural commodities, the main exception being the cocoa trade which is dominated by the state sector. This situation often compels farm households to sell the bulk of their crop during the immediate post-harvest period, which for maize is in August-September. At the same time it severely limits the capacity of traders to absorb surpluses produced by farmers. The consequence is that farmgate prices are usually very low during the harvest season as illustrated in Figure 4 below. Lack of suitable storage infrastructure in surplus-producing areas and limited access to inventory finance stymie intra-seasonal stockholding and efficient temporal arbitrage. The result is not only high post-harvest losses but also considerably high variability in intra-seasonal prices, usually increasing by over 100 percent between the low in August/September to the peak in May/June as shown in Figure 4.



In a recent study of the feasibility of a commodity exchange in Ghana it was concluded, as illustrated in Box 2 below, that smallholder maize producers who utilise exchange infrastructure (WRS and exchange trading system) in marketing their produce can obtain incremental household income of more than 25 percent¹³. The improved producer incentive structure, which will emerge with the development of a modern marketing system around the exchange infrastructure, is likely to motivate farmers to apply more productivity-enhancing inputs and better crop husbandry practices, making it possible to increase maize yield from the current national average of 1.5 tonnes per hectare to an attainable yield of 3.5 tonnes per hectare. The potential increase in farm productivity in the maize sub-sector is conceivable because in the illustrative case discussed below (Box 2) the rise in household

¹³ The feasibility study was completed by G. Onumah and A. Aning in August 2009.

income from the sale of maize, which results from farmers exploiting a more efficient marketing system, impacts positively on the profitability of using non-subsidised farm inputs such as fertiliser. This is demonstrated with estimates of the Value-Cost Ratios (VCR) under alternative marketing options. The VCR is derived as follows: *incremental income from use of fertiliser divided by the cost of fertiliser applied*. In the illustrative case, it rises from 1.4 to 2.4 when maize is marketed using the exchange infrastructure compared to when it is sold through the informal marketing chain. The rule of thumb is that a ratio of 2 and above indicates that fertiliser use is profitable. The implication is that, it will be profitable to use fertiliser for maize production in the Offuman and similar areas in the maize belt in Ghana where intensive cultivation and consequent decline in soil fertility, result in significant increase in yield with application of non-subsidised fertiliser. However, the profitability depends on the marketing system adopted and the development of exchange infrastructure will significantly enhance profitability.

Box 2: Analysis of benefits of WRS and exchange trading: the case of maize farmers at Offuman, Brong Ahafo Region in Ghana

This case is based on updated information from an earlier study undertaken in Ghana G. Onumah and J. Coulter (2000). For purposes of the analysis, we assume that the farmer cultivates one hectare of maize (within the national average) and obtains total output of 4.06 tonnes by applying fertiliser and other inputs (this is the case in the area); 1.06 tonnes of the maize produced is consumed by the farm household, leaving 3.0 tonnes to be marketed. The average price levels at relevant locations are:

		September	January
Techiman market price per tonne	-	\$100	\$180
Offuman market price per tonne	-	\$80	\$140

Without the use of the WR system, household income from sale of 50% of the marketed crop (1.5 tonnes) in Offuman in September is \$120 and from sale of the remainder in January is \$210, implying total household income of \$330 from maize production. Total farm income from maize production rises to \$420.00 (an increase of 27%) if the WRS and commodities exchange is used in marketing the crop in January from a warehouse at Techiman. This is computed as follows:

Market value of maize deposited at Techiman (3.0 tonnes @ \$100/tonne)	=	\$300.00
Inventory financing obtained (80% of value)	=	\$240.00
Cash available to household: loan less cost of bagging, transport	=	\$210.00
Gross earnings from sale of 3 tonnes in January at Techiman (@ \$180/tonne)	=	\$540.00
Less carrying/trading cost:		
Warehouse receipt	=	\$10.00
Storage cost (@ \$3/tonne x 4 months)	=	\$36.00
Interest charges @ 28% p.a. for 4 months	=	\$22.40
Brokers fees @4% per value per tonne	=	<u>\$21.60</u>
Total carrying and trading cost	=	\$90.00
Plus inventory finance obtained by household	=	\$240.00
Net cash revenue accruing to household in January	=	\$210.00

Total seasonal household income (including cash advance in Septetmber) is \$420. 00.

Source: Based on previous work by G. Onumah and J. Coulter (2000).

One major benefit from the use of exchange infrastructure in marketing grains is the lower transaction costs, due to the ability of smallholder farmers groups to take advantage of the system to bulk and assemble produce at known delivery locations. The system also allows trade by description to occur, thereby making it possible for parties to transact over long distances without physical sampling to confirm the quality and volume of commodities to be traded. Traders can also benefit from easier access to inventory finance as the warehoused grains can be collateralised. The feasibility study¹⁴ showed that the availability of trade finance will make it possible for traders stockpile inventories during the harvest season for supply throughout the year. By so doing, the traders will lower procurement cost and therefore potential increase their average trading margins from under 9 percent to over 35 percent. Inventory financing will be more attractive to mainstream commercial banks for the following reasons:

- The collateral will be well managed by independent professionals (warehouse operators), who are backed by insurance and professional indemnities in the event of a loss. With lending against real estate and other assets such as machinery, which are the more common tangible assets accepted as security in Ghana, there is no such guarantee of care for the collateral.
- The market value of the collateral is transparently determined by the market and can be closely monitored on a daily basis.
- Liquidating the collateral is also relatively easy, especially through the exchange, and in most cases the realisable value is likely to be equal or exceed the book value of the collateral if margining and monitoring have been effective. This is not the case with other tangible assets such as real estate which is usually used in securing loans in the country.

Recognition of the lower risks associated with commodity-backed financing informed the risk-weighting recommended by the Bank for International Settlements for this form of lending. Under Basel II norms, loans against commodity warehouse receipts is generally rated at A- to A+, implying low capital requirement for such loans. A well-regulated WRS which assures near-zero default is likely to improve the risk profile of commodity-backed loans to levels similar to that of Government Treasury Bills, implying that banks offering these loans would have very low non-performing loans and therefore low loan provisions. Their overall profitability will be improved and their capital adequacy ratio enhanced, thereby making it possible to increase their lending operations.

3.5 Potential impact of exchange infrastructure on the cocoa sub-sector in Ghana

The development of exchange infrastructure can enhance implementation of two major government policy objectives in the cocoa sub-sector in Ghana. These policies are: to allow licensed cocoa-buying companies (LBCs) to directly export 30% of the cocoa beans they procure and to local cocoa processing companies to process at least 40 percent of Ghana's cocoa output.

The policy of allowing export of cocoa beans by LBCs was intended to increase competition in the cocoa trade with farmers potentially benefiting from higher producer prices as a result. This option was pursued because after almost two decades of reform in the cocoa sub-sector, which opened up space for private sector participation in the domestic procurement of the crop, it had not been possible to achieve the goal of encouraging price competition at the farmgate and consequent increase in farmers' share of FOB prices. It had become apparent that the virtual monopoly over cocoa exports by the state-owned Cocoa Marketing Company (CMC) partly contributed to the situation. This is because the LBCs practically operate as commission agents buying on behalf of CMC, relying on it for finance for domestic procurement. Implementation of the policy has, however, encountered

¹⁴ The study was undertaken by G. Onumah and A. Aning and completed in August 2009.

considerable inertia mainly because of concerns about produce quality deterioration and loss of the quality premium enjoyed by the country as occurred in other West African countries such as Cameroon and Nigeria. However, with a reliable and internationally credible WRS, the LBCs can use warehouse receipts to obtain competitively-priced finance for the domestic trade¹⁵. The system will also provide independent assurance of contract performance and enable them secure firm forward contracts.

Currently, there are six cocoa processing companies located in Tema and Takoradi, with total installed capacity to process 298,000 tonnes of cocoa beans annually. These companies procure local cocoa beans exclusively from CMC, which takes over all cocoa beans bought by the LBCs. The CMC does not use a market-driven process (e.g. competitive bidding by the buyers) to allocate cocoa to the processors. The price is set on FOB basis, though the cocoa beans are sold into the local rather than export market. It is anticipated that if cocoa, destined for the local cocoa processing industry, is traded through a commodity a competitively determined ex-warehouse price will emerge which may further improve local processing margins, thereby attracting even more investment in local processing capacity.

3.6 Conclusion

It is apparent from the foregoing that market players in Ghana can potentially benefit from the establishment of a viable commodity exchange. The country produces sizeable volumes of agricultural commodities which can be receipted and traded through formal channels. It has a diverse and competitive financial sector which can support exchange trading and receipt-based financing. The country's macroeconomic conditions are generally conducive to the development of exchange trading. Furthermore, there is evidence that the existing constraints in the commodity marketing chains make the development of exchange infrastructure potentially beneficial to key players in the agricultural value chains, including producers, traders and processors. Despite these conditions, a viable commodity exchange is yet to emerge in Ghana. In the next chapter we examine the factors responsible for this and discuss what needs to be done to enhance prospects for success with ongoing initiatives to promote an exchange in the country.

¹⁵ Such a system has been successfully developed in Tanzania for agricultural export commodities such as coffee, cotton and cashew. It allows traders and relatively smaller-scale buyers, including well-organised farmer groups, to actively compete in trade in these commodities. In the case of coffee, the farmer groups and traders using the WRS can directly market coffee to importers through the Moshi Coffee Auction. International buyers of cotton and cashew are also able to buy directly from traders and farmer groups who deposit their crop in designated warehouses.

4. Review of efforts to promote exchange infrastructure in Ghana

4.1 Introduction

Since the 1990s when the agricultural sector was liberalised, there has been several attempts to promote agricultural commodity exchanges and various forms of warehouse receipt systems (WRS) in Ghana. However, these efforts did not result in the emergence of a functional commodity exchange in the country. In this chapter we review past and ongoing initiatives to establish a commodity exchange with the aim of identifying lessons worth learning and therefore relevant issues to take into account in ensuring success with current and future efforts.

4.2 Frustrated efforts to establish commodity exchanges in Ghana

Between the late 1990s and early 2000s, three private initiatives to establish commodity exchanges and related market institutions were launched. One of these involved a partnership, led by the then Chairman of the Grain Marketing Association of Ghana (GMAG), which incorporated the Accra Commodity Exchange (ACX). The promoters of ACX were unable to actively engage other stakeholders in promoting the exchange which failed to take off and did not record in any formal trade in commodities. Another promoter launched what was later to be called the West African Commodity Exchange (WACE) with its headquarters in Accra. This initiative reportedly involved collaboration with international players such as the London International Financial Futures Exchange (LIFFE), the Cocoa Association of London and the African Development Bank (AfDB). It was further reported in July 2008 that the promoters were seeking investment of about US\$500 million to launch the WACE¹⁶. As the time of the study, the exchange was yet to take off.

It is not surprising that these two initiatives were unsuccessful because the promoters were unable to set up the basic prerequisites for an exchange which were identified in Chapter 2. They did not install transparent trading systems, had no registered brokers, lacked robust rules and procedures for contract enforcement as well as dispute resolution and did not institute a trusted clearing and settlement system. Furthermore, they lacked a credible delivery system. Hence, they can be described as exchanges only in name as they lacked the essential institutional infrastructure to facilitate exchange-based transactions and therefore attract market players.

The third private initiative by the Commodity Clearing House (CCH) adopted an approach which differed fundamentally from the other two. Though the ultimate vision was the development of a viable commodity exchange, promoters of CCH adopted an evolutionary approach focusing initially on fostering trade warehouse warrants. Twinned to this track was a programme to engage other stakeholders in developing a supportive regulatory framework as well as warehouse receipt system. The CCH was registered in 1996 as company to deal in financial securities, market information and trade services relating to commodities. However, it faced considerable delays over obtaining a licence to operate as described above mainly because of lack of clarity regarding the institutional location for regulatory oversight of its activities – that is whether it should be regulated by the Bank of Ghana (BOG – central bank) as a non-bank financial institution or by the Securities and Exchange Commission (SEC). Training visits to JSE/SAFEX were arranged for key personnel of the central bank as part of the process of resolving this problem. Following this, CCH was

¹⁶ See online report by Commodity Online dated 04 July 2008 (www.commodityonline.com/news).

granted a provisional licence by the BOG to develop a system to implement the commodity clearing house scheme.

In 2004 promoters of CCH submitted specific recommendations on the framework for regulating the commodity clearing scheme to the BOG. Following consideration of the proposed framework, it was decided that the SEC would be better-placed to exercise regulatory oversight. This decision in part encouraged the SEC to play a lead facilitating role in the promotion of a viable commodity exchange in Ghana involves in collaboration with private sector players such as CCH and the Private Enterprise Foundation (PEF). The SEC was supported in this initiative by the Ministry of Finance and the World Bank. It commissioned a study to determine the feasibility of the exchange, preliminary results of which were discussed with a range of stakeholders in March 2009 at three consultation workshops held at Kumasi, Takoradi and Accra. The study and the consultation process concluded that it was feasible to establish the proposed Ghana Commodity Exchange (GCX), which in the short term will operate as a spot/cash exchange trading spot contracts for selected commodities, repos and non-standard contracts for services such as transport and logistics. It is anticipated that in the medium to long term the GCX could evolve into a futures exchange, trading standard futures and options contracts as well as other derivatives, depending on how quickly it establishes credibility in the market.

In 2005 a subsidiary of CCH – the CCH Finance House (CCHFH) – was incorporated to operate as a non-bank financial institution specializing in commodity asset-backed financing. It was issued with a licence by the BOG to “*organise itself to start operations*” in 2008. CCHFH is expected to provide the following products and services to commodity producers, traders, processing companies and financial institutions:

- Offer commodity sell-back or repurchase (Repo) contracts which can be used to back money market commodity warrants to finance the commodities trade;
- Provide a wholesale vehicle for re-financing the inventory-backed credit portfolio of banks and other financial institutions;
- Arrange commodity trade finance contracts with third parties on behalf of commodity producers/traders and commodity processing companies; and
- Acting as a vehicle for international financial institutions to on-lend to Ghanaian financial intermediaries which are engaged in commodity finance.

The risk mitigation measures adopted by CCHFH include margining and backing its warrants with a liquid guarantee in the form of Bank of Ghana and/or Government of Ghana treasury bills. It also intends to appoint credible collateral managers as issuers of warehouse receipts to minimise the risk of non-performance by warehouse operators. This is particularly important to the successful launch of its operations since past efforts to develop receipt systems which can facilitate trade as well as finance have been frustrated as demonstrated in the next sub-section.

4.3 WRS remains underdeveloped in Ghana despite pioneering efforts

Ghana was one of the first African countries to pioneer an inventory credit system under a programme implemented by TechnoServe. This system, which is now more widely promoted in the Sahel Region of Africa, usually targets farmer groups and is supported by NGOs or donors. Under most NGO-sponsored schemes, the warehouses, which have very small storage capacity (some as low as 20 tonnes) are located in villages and managed by the farmer groups. This is principally to ensure easy access by smallholder farmers and also ensure that storage costs are low. Some donor funded programmes have relatively larger warehouses, some with storage capacity up to about 1,000 tonnes located close to villages.

However, the warehouses are managed by collateral managers but the storage and collateral management fees are heavily subsidised by the donor.

Implementation of the TechnoServe project was concentrated in Ghana's "maize belt" and the depositors were mainly individual smallholder farmers, who obtained inventory credit from the Agricultural Development Bank (AgDB). The credit was secured against warehouse receipts as well as a guarantee by TechnoServe which initially represented 100% of the loan granted. In addition, TechnoServe provided training for the depositors and contributed financially to the construction of warehouses. They also provide intensive monitoring of the stocks in the warehouse, tracking price movements and offering advice to participating farmers on the timing stock sales. The inventory credit system promoted by TechnoServe for grains was not sustainable. This is principally because scale diseconomies made it difficult to cover the high cost of intensive supervision by TechnoServe. Furthermore, because the warehouse receipts issued are not transferable they are of limited use in facilitating impersonal trade transactions as occurs in exchange trading.

A commercial unregulated WRS developed in most African countries, including Ghana, after liberalisation in the 1980s with collateral management companies providing services that make inventory collateralisation possible. It described as unregulated because, though the collateral management agreements under which inventory finance is provided is legal under national laws and enforceable in the courts, there is no independent regulatory oversight of the collateral managers, who take custody of stored commodities and issue warehouse receipts. Most of the collateral management services are provided by companies with European headquarters. Examples include Societe Generale de Surveillance (SGS), Audit, Control and Expertise (ACE), Bureau Veritas and Cotecna. This is because they are able to secure professional liability cover and other forms of insurance from internationally credible insurance companies, thereby assuring lenders about the security of the transactions¹⁷. Ecosafe Ghana Ltd is the only local-owned collateral management company in Ghana.

This system has enabled relatively large-scale operators, who own or can rent entire warehouses and can afford fees costing about US\$3,000 per site per month to access inventory finance. However, the services are not accessible to farmer groups or traders who wish to deposit relatively small volumes of a commodity. The system also tends to be used predominantly for financing import and export transactions, but rarely used for non-tradables, except where the depositor is a large processor or major trading company. Again, as in the case of NGO-sponsored inventory credit schemes, the warehouse receipts issued by the collateral managers are non-transferable and, therefore, cannot be used directly as delivery instruments in commodity trade.

It was in an attempt to redress the main drawbacks of limited access and non-transferability of the receipts that the Natural Resources Institute (NRI) led two major initiatives to promote a more widely-accessible WRS in Africa, starting in Ghana with an action research project undertaken between 1993 and 1996 to determine the feasibility of such a system and to identify the essential prerequisites for success. It was funded by the UK Government's Department for International Development (DFID). The programme involved the state-owned Ghana Food Distribution Corporation (GFDC) as the lead warehouse operator. The depositors were mainly medium-scale grain traders, who were members of the Grain Marketing Association of Ghana (GMAG). The Agricultural Development Bank (AgDB) and Barclays Bank provided inventory finance and SGS offered collateral management services. As a result of the pilot studies, volumes of maize stored by the participating depositors gradually rose to over 6,000 tonnes in 1996 and demonstrated that the system was technically and financially viable in Ghana.

¹⁷ For further discussion see Coulter and Onumah (2002).

The outcome of the pilot was considered positive enough to inform the formulation of a project which was launched in 2000 and funded by the Common Fund for Commodities (CFC) to promote the system more widely in Ghana, Ethiopia and Zambia focusing on grains. CFC also funded a similar project targeting the coffee and cotton sub-sectors in Uganda, Tanzania and Zimbabwe. The main difference between the model piloted by NRI and the two described above, is the central role of an independent regulatory agency, which is responsible for licensing/certifying warehouse operators as custodians of collateralised stocks. The licensing/certification process ensures that the operators comply with relevant criteria, laws and regulations. The agency regulates issuing of standardised warehouse receipts to minimise the risk of fraud and oversee the operations of warehouse operators, including carrying out unannounced stock and quality verifications. Licensed operators offer “public” warehousing services, implying they can store commodities on behalf of multiple depositors (of all size) in a single warehouse or site. The receipts issued may be transferable and negotiable, depending on the enabling legislation.

The pilot generated stakeholder interest in the WRS, encouraging private sector-led efforts to develop trade-friendly grading standards for major cereals and other locally-traded agricultural commodities and initiatives to raise professional standards in the warehousing industry. New industries emerged to service grain warehousing and trading, including mechanical grain drying services. However, implementation of the project was discontinued in 2003 because of lack of progress on policy-related constraints. Key among these was access to modern storage facilities in the surplus-producing areas in the “maize belt”. Most of the facilities belong to the state-owned GFDC, which was virtually bankrupt by 2000 and could not be trusted by depositors and lenders to warehouse collateralised stocks. Attempts to replicate a successful Zambian model involving transfer of management of the state-owned warehouses and silos to credible private operators failed to receive support from Government. The other more intractable challenge was market uncertainty resulting from *ad hoc* intervention in the maize market by Government. This problem affected not only the NRI pilot but also made it difficult for TechnoServe to continue to support its inventory credit scheme.

4.4 New WRS pilot by the Ghana Grains Council: what are the prospects?

During the last quarter of 2009, stakeholders in the grain sector – including grain producers, traders and processors – formed the Ghana Grains Council (GGC) with the goal of driving improvements in the grain value chains in the country. One of the priority objectives of the GGC is promote a WRS for the grain sector. The GGC is being funded by the United States Agency for International Development (USAID) under two related projects: the Agribusiness and Trade Promotion (ATP), which is a regional programme, and the Agriculture Development and Value Chain Enhancement (ADVANCE) Project. The ATP is a three-year regional initiative intended to enhance value addition in the agricultural sector and increase intra-regional trade through developing and/or strengthening institutional infrastructure and links that foster stable commercial relations as well as reduce physical and policy-related barriers to agricultural. It is being implemented along the major commercial corridors linking Ghana, Senegal, Mali, Burkina Faso, Benin, Togo Cote d'Ivoire, and Nigeria. The ADVANCE Project, which is being implemented by ACDI/VOCA, aims to increase competitiveness and growth in the agricultural sector as well as improve household food security.

It is anticipated that successful implementation of the WRS pilot will contribute significantly to laying the foundations for secure inventory-backed finance as well as exchange trading. Many of the sector representatives on the members of the Steering Committee of the GGC have a long history of involvement in previous WRS initiatives in the country and should therefore be able to embed relevant lessons in developing the plans and strategies of the Council. One such lesson is that the grain focus of the GGC may be attractive to policymakers in Ghana, especially because of food security considerations. However, for the

same reasons, grain markets in the country tend to be prone to politically-driven *ad hoc* interventions which can harm the prospects for developing market institutions such as WRS and commodity exchanges. To mitigate this policy-related risk, it is important that the GGC broadens the range of commodities to be covered under its WRS pilot to include other storable commodities. This may entail broadening the membership base of the Council to include players from other commodity sub-sectors. The Council also needs to invest in dialogue with government on the need to create and maintain a supportive policy environment. It will be necessary for this purpose to assemble evidence which demonstrates not only the long-term benefits of WRS and commodity exchange to the agricultural economy but also the potential for Government to use these institutions in effectively responding food crisis in a manner that does not distort economic incentives for producers and other players in the sector¹⁸.

Another lesson from past initiatives in Ghana and elsewhere in Africa is that though it may be desirable to develop a credible regulatory framework for WRS to spur growth in third-party warehousing and increase access by a range of players, it is a process that takes time. It has been suggested that the GGC can act as the warehouse regulator, replicating the model of the East African Grain Council which is implementing a pilot WRS in Kenya. However, GGC would have to prove itself to market players that it can be totally independent and robust in enforcing relevant regulations. Building such a reputation will also take time. Furthermore, in the absence of specific legislation, there may be lingering concerns about the rights of parties to whom warehouse receipts are transferred. A near-term option for the GGC may, therefore, be to appoint credible collateral managers as issuers of warehouse receipts, building on their reputation to launch a system that will be attractive to mainstream financial institutions.

4.5 Conclusions and recommendations for a viable commodity exchange in Ghana

The evolving strategic alliance of key stakeholders has improved prospects for success in promoting the proposed Ghana Commodity Exchange (GCX). This alliance has been driven in part by the convergence of interests and emerging clarity regarding the roles of different parties. For instance, the SEC is playing a lead role in attempts to fill gaps in the regulatory framework for a viable commodity exchange and is doing so through a consultation process. Government has demonstrated support for this process by securing financial assistance from the World Bank to finance the feasibility study which was completed in August 2009. It is expected to be followed up with a study to advice on appropriate legal and regulatory framework for the proposed exchange. The study was to be commissioned by the second quarter of 2010. Private sector initiatives, such of the GGC and CCHFH, also offer an opportunity to drive forward the agenda to establish a viable exchange by investing in the development of strategic elements of the required physical and institutional infrastructure.

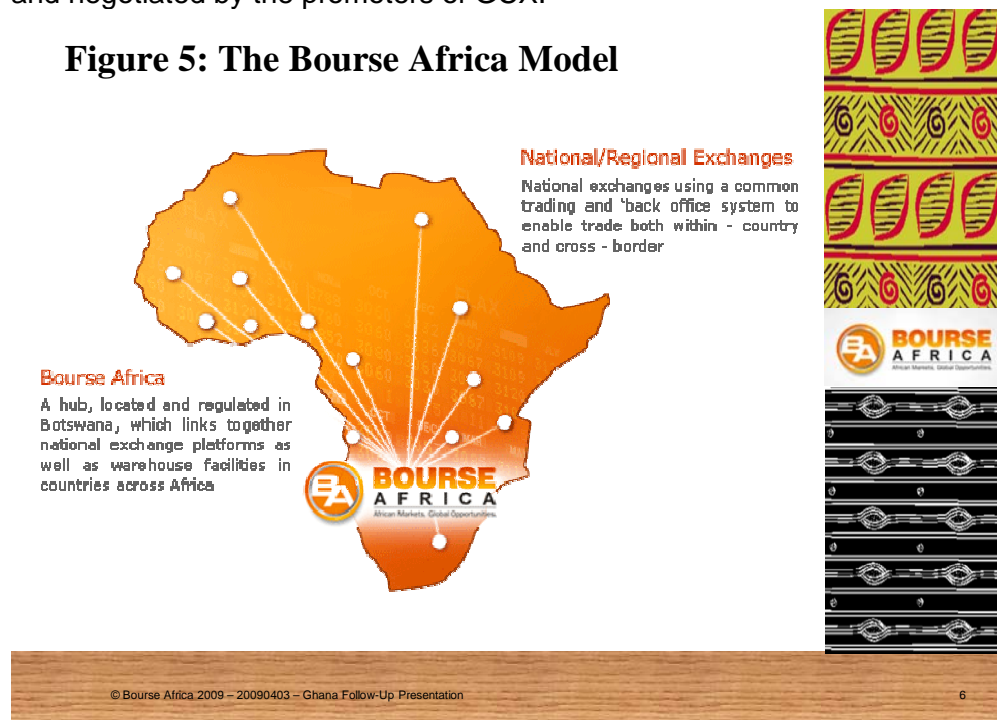
Another interesting development with potential positive implications for the GCX is the emergence of Bourse Africa in the commodity landscape in Africa. Officials of Bourse Africa have initiated consultations with Ghanaian stakeholders about possible participation in the GCX. This is seen as part of their vision of promoting a pan-African exchange model that involves joint ownership of national exchanges with local partners, as illustrated in the model in Figure 5 below. The major merits of the model include fostering regional markets, thereby increasing prospects for substantial increase in volumes traded as well as attracting foreign (non-Africa-resident) investors.

Bourse Africa is currently licensed to operate as an exchange in Botswana (its headquarters) but not yet in any other African country. Hence, though its participation in the proposed GCX

¹⁸ A relevant case is the pilot by the World Food Programme (WFP) in using commodity exchanges in Zambia and Malawi in the procurement of relief stocks.

has benefits, owing to the fact that the pan-African model is yet to be proven in practice, its involvement in the establishment of the exchange in Ghana has to be carefully considered and negotiated by the promoters of GCX.

Figure 5: The Bourse Africa Model



Source: Goromonzi (2009).

4.5.1 Creating a supportive regulatory framework

The SEC has initiated a process to commission a study on the regulatory framework which will define the legal framework for the operation of the proposed exchange as well as for licensing warehouses and operators issuing transferable and tradable warehouse receipts. Specific issues that need to be addressed during the regulatory study, which were identified during the feasibility study include the following:

- a) Review of the Securities Industry Law to establish a clear framework for licensing and regulating the commodity exchange by the SEC; and
- b) Ensure recognition by statute of transferable warehouse receipts and commodity-backed warrants as securities and as negotiable documents of title.
- c) Authorization of the proposed exchange, as a self-regulatory organization, to prescribe dealing and settlement rules as well as instituting an arbitration system with relevant rules.
- d) Assigning delegated authority to the proposed exchange to license and regulate participating warehouse operators, including outlining minimum requirements for licensing operators, rights and obligations of issuers, holders and financiers of warehouse receipts, and definition of offenses and sanctions related to the issuing of warehouse receipts.

The regulatory study is expected to be completed by second the end of 2010.

4.5.2 Assuring a stable, conducive policy environment

Uncertainty regarding trade policies has been the bane of many WRS initiatives in Africa. To help manage this risk, South Africa established an Agricultural Marketing Council with representation from important stakeholders such as grain producers (Grain South Africa), processors (National Chamber of Milling), financial sector players and other key industries. This body engages in regular policy dialogue, undertaking market-related research that allows Government to intervene when appropriate and in a manner that does not distort the market. A similar platform needs to be created in Ghana to dialogue with Government on the creation and maintenance of a supportive trade policy environment as well as to inform market players about any policy actions which are likely to affect the market. The main intent is to reduce uncertainty regarding any such actions, allowing market players to factor in relevant developments in the market decisions they take. The GGC and other bodies representing various interests in the commodity sector need to play a leading role in lobbying Government for the establishment of such a platform. Donor technical and financial support will also be crucial in enabling stakeholders carry out studies which will generate evidence-based material for effective advocacy.

4.5.3 Enhancing access by smallholder producers

The atomised structure of Ghana's agricultural production system makes it difficult for smallholder farmers to directly utilise the WRS and exchange as individuals. However, experience from Tanzania and Zambia have demonstrated how strong primary level farmer organisations can facilitate the use of these systems by smallholder farmers to undertake collective marketing through modern exchange infrastructure. Among the lessons that Ghana can learn from the farmer organisations utilising the WRS in these countries is the need to focus capacity building for collective marketing at the primary or grassroots level rather than at secondary or tertiary levels where attention tends to be concentrated more on advocacy. Whereas the Tanzanian groups have evolved from the old cooperative movement, in Zambia the most successful primary level farmer organisations which used the WRS were promoted by various NGOs. Collaboration with NGOs such as Technoserve, ADRA, Catholic Relief Services and Concern International, which have a long history of promoting farmer groups, can therefore help in strengthening the capacity of farmer organisations and improving access by smallholder farmers. This represents another opportunity for donor support in promoting a viable exchange in Ghana.

4.5.4 Other support

Equally important is the need for a reliable market information system. While the existing IT infrastructure in Ghana is considered adequate for the development of the exchange, it is acknowledged that improving market information systems will be necessary to ensure that market players are able to take informed decisions on the basis of reliable information. A corollary is the need to invest in strengthening the capacity of key stakeholders such as brokers, credit and risk management personnel of banks and non-bank financial institutions, commodity traders and farmer groups, insurance companies, warehouse operators and collateral managers. Training programmes to be offered, which should be appropriately accredited by relevant international institutions, include courses in quantity and quality assurance; and commodity trading and finance. The Government of Ghana and donors can explore the possibility of technical and financial assistance to support the required capacity building programmes.

5. Nigeria's agricultural commodity exchange

5.1 Introduction

Nigeria is among the few African countries with a functioning commodity exchange – the Abuja Securities & Commodity Exchange (ASCE). Established in 1998 by the Government of Nigeria (GON), the Exchange was expected to help farmers, processors and traders in agricultural commodities to manage production and marketing risks in the farm sector and therefore catalyse commercialisation and growth in agriculture. However, this expectation is yet to be fulfilled as the ASCE has struggled to attract significant volumes of trade in agricultural and non-agricultural commodities. We review factors that account for the under-performance of the ASCE, focusing in this chapter on the country context, followed in Chapter 6 with a review of the regulatory and institutional framework as well as infrastructure that underpin the operations of the Exchange.

5.2 General country background

Nigeria is Africa's most populous nation, with an estimated population of close to 150 million, almost double the population of Ethiopia which is second in Africa in terms of population size. Average annual population growth rate is estimate at just under 2 percent. About 48 percent of its population live in urban areas and the rate of urbanisation is estimated at 3.8 percent per annum. It is apparent that Nigeria, relative to most African countries, has a huge domestic market which can drive growth in agricultural and industrial production, including agro-based value addition.

Figure 6: Map of Nigeria



The country is well endowed with natural resources. It has proven oil reserves of over 32 billion barrels and exports over 2 billion barrels of oil per day, its domestic consumption being estimated at under 250,000 per day. It also has other mineral resources including tin,

iron ore, coal, limestone, niobium, lead and zinc. Close to 80 percent of the land area is suitable for agricultural production and just over 30 percent of its arable land is under cultivation. Nigeria has diverse agro-ecological zones which are suitable for producing a range of annual and perennial crops including cash crops such as cocoa, oil palm and rubber, as well as food crops like maize, plantain, cassava and yams. The climate becomes progressively drier, reaching semi-arid savannah towards the north where the production sorghum and millet is concentrated.

5.3 Nigeria's macroeconomy and financial system

Despite civil unrest, particularly in the north and in the oil-producing southern regions (Niger Delta), Nigeria recorded an impressive average GDP growth rate of 6.7 percent between 2003 and 2009. This growth was driven largely by the petroleum and agricultural sectors, while the manufacturing sector was reported to have been in relative decline - capacity utilisation in the manufacturing sector was only 42.4 percent mainly due to unreliable energy (electricity) supply and consequent high cost¹⁹. The oil sector is the mainstay of the economy. It accounts for 95 percent of total export earnings and almost 85 percent of government revenues. The economy is rather dualistic, with weak links between the dominant oil sector and the rest of the economy, which like other African countries is heavily dependent on agriculture. The agricultural sector accounts for over 40 percent of GDP, having declined from over 65 percent of GDP at independence in 1960. The sector employs about 70 percent of the labour force.

Table 6: Nigeria Macroeconomic and other indicators (2009*)

Indicator	2009
Population	149.3 million
Real GDP Growth (average 2003 – 09)	6.7 percent
GDP (US \$'bn)	212.08 billion
GDP Per Capita (US\$)	1,089
Inflation (%)	12.5 percent
91-day Treasury Bills Rate	2.02 percent
Average Lending Rate	15.8 percent
Official Reserves (US\$')	46.54 billion
Import Cover (months)	7.1
Exchange Rate to US\$	150
External Debt (US\$'bn)	9.69 billion
External Debt as % GDP	6.2
Sovereign Ratings (Fitch)	BB-
Sovereign Ratings (S&P)	B+

Source: Central Bank of Nigeria and the Economist Intelligence Unit

*Otherwise stated against indicator.

Inflation averaged 11.6 percent between 2003 and 2009, when it hovered around 12.5 percent. The domestic currency has also been relatively stable over the period, average annual depreciation estimated at 3.6 percent. Recent surges in oil prices led budgetary windfalls which helped to improve the overall budgetary position of the federal government, including lower deficits and external debt. These, in turn, contributed to a decline in public sector borrowing and therefore helped keep interest rates relatively low, at about 15.8 percent – implying real lending rates of about 3.3 percent compared to 13.7 percent in Ghana and 12.9 percent for Sub-Saharan Africa.

¹⁹ Nigeria Agricultural Economy and Policy Report, 2009.

Nigeria has a diverse and relatively well-developed financial sector. According to the Central Bank of Nigeria (CBN)²⁰, the country's financial depth, as measured by broad money to GDP ratio, was 38.1 percent at the end of 2008. Its intermediation efficiency, measured by the size of currency in circulation outside the banking system, continued to show a downward trend in the 2000s. Over the same period, the ratio of the banking system's total assets to GDP trended upwards, ending 2008 at 108.6 percent.

By the end of 2009, the country had 24 universal banks, five discount houses, five development finance institutions, 900 microfinance institutions and 73 insurance companies. The number universal banks dropped from 89 at the end of 2004 to the current 24 as a result of implementation of the Financial Systems Strategy 2020 (FSS 2020) by the CBN. However, over the same period, the network of bank branches continued to rise, for instance from 4,579 in 2007 to 5,134 at the end of 2008. The reforms undertaken by the CBN under the FSS 2020 included recapitalisation and consolidation in the banking and insurance industries. As part of this process the minimum capitalisation for banks was raised from the equivalent of US\$15 million to US\$250 million – only banks which met this requirement by end of December 2005 were licensed to hold public deposits and participate in the Dutch Auction System for buying and selling foreign exchange²¹. This process encouraged mergers and acquisitions among the banks as they sought to comply with these requirements.

Total credit to the private sector amounted to US\$66.7 billion at the end of 2008, by far dwarfing credit granted to the public sector. However, the bulk of the credit – just over 75 percent – tends to be of short-term maturity, that is one year or below. Though the agricultural sector received only 1.4 percent of total credit to the private sector, trade financing for imports and the domestic trade attracted 16.4 percent share of the credit. As stated above, the cost of borrowing is comparatively lower in Nigeria than in Ghana. Interest rate spread in Nigeria is also reported to have steadily declined in the 2000s, while its score on the “Legal Rights of Borrowers Index” was 7 in 2005, compared to 5 by Ghana, 4 by Cameroun and 4 by Sub-Saharan Africa²².

There have, however, been concerns, particularly during the latter part of 2009, that measures adopted by the CBN to reduce the size of non-performing assets in the banking industry could impact negatively on growth in credit to the private sector and therefore stymie GDP growth. Access to trade finance had been further limited by the scaling back of most of the international inspection companies from the provision of full-service collateral management as a result of rising non-performance risk. Most of the relatively larger non-indigenous companies were only offering stock monitoring services which the banks did not consider as adequate in terms of managing their exposure in inventory-backed financing²³.

The Nigerian Stock Exchange (NSE), which is based in Lagos, is the dominant institution in the capital market in Nigeria. Market capitalisation peaked at US\$ 105.65 billion in 2007. To put this in context, respective market capitalisation figures for JSE Securities in South Africa and the Ghana Stock Exchange were US\$690 billion and US\$14.9 billion. However, market capitalisation on the NSE declined sharply in 2008 to US\$80.6 billion and ended 2009 at US\$47.75. This development was attributed in part to equity price losses and the delisting of 64 securities²⁴. The NSE is regulated by the Securities and Exchange Commission (SEC).

²⁰ CBN Annual Report, 2008.

²¹ Article by Okagbue S. N. and T. B. Aliko (2004) in the International Legal News (http://www.imakenews.com/iln/e_article000336415.cfm?x=b11,0,w)

²² The scale for the “Legal Rights of Borrowers Index” is from 0 (worst) to 10 (best).

²³ Pers. Comm. with Country Manager of Audit, Control and Expertise (ACE).

²⁴ Annual Review Report on market performance by the Director General/CEO of the Nigerian Stock Exchange (Prof. N. Okereke-Onyiuke).

Despite recent turbulence in the financial sector, it is apparent that Nigeria's financial system is sufficiently well-developed and sophisticated enough to support transactions and investments in a formal commodity market. Indeed the uncertainty in the equities market and decline in earnings on bank deposits could prove advantageous if secure commodity-based investment opportunities are offered by the commodity exchange.

5.4 Developments in Nigeria's commodity sectors

The oil boom of the 1970s led to a major shift in the structure of the commodity sector in Nigeria. From a low six percent in 1970, the contribution of the oil and gas sector to GDP rose to over 45 percent by the mid-2000s. Agriculture which had been the dominant sector at independence in 1960, accounting for just under 65 percent of GDP, witnessed a drop in its share of GDP to 28.3 percent in 2002 before rising to 37.3 percent in 2006. This development is attributable in part to concentration of investment in the oil sector as well as neglect of the non-oil sectors, including in particular the agricultural sectors. As the 12th largest exporter of crude oil, Nigeria exports about 2.35 million barrels of oil per day. Exploration and upstream drilling for oil is dominated by multinational oil companies, with Shell being the dominant player. The downstream oil industry includes four refineries with installed capacity of 438,750 barrels per day. However, due to logistics and operational problems the refineries often operate at less than 40 percent capacity, leaving the country to import oil products equivalent to 170,000 barrels per day of crude to meet domestic demand. Inventory financing, usually involving stock monitoring or full-scale collateral management tends to be used mainly for importing and domestic distribution of petroleum products²⁵.

Until the 1970s, export crops such as cocoa, cotton, groundnuts (peanuts), oil palm and rubber were the main source of foreign exchange for Nigeria. Cocoa is still the leading non-oil foreign exchange earner, though growth in output declined from a high of over 300,000 tonnes of cocoa beans per annum in the late 1960 to an extremely low 90,000 tons in 1999. Under-investment in the industry led to aging trees and decline in yield and output.

The decline in Nigeria's cocoa industry was reversed as a result of government investment under the Presidential Initiative on Cocoa launched by the Obasanjo Administration in the late 1990s. Under the initiative, the National Cocoa Development Programme was launched in 1999 in 14 major cocoa-growing states. By 2005 close to 6 million cocoa seedlings had been distributed to farmers to replant 5,450 hectares of farms with trees aged 30 years and above. The seedlings were distributed free to the farmers. Farmers were sensitised on improved crop husbandry practices and also received subsidised inputs. Output recovered and steadily rose to 340,000 tonnes by end of 2005, making the country the fourth largest cocoa producer in the world²⁶.

Rising domestic output of cocoa beans has coincided with growth in investment in local cocoa processing capacity. Total local cocoa processing capacity currently stands at about 150,000 tonnes. Most of the cocoa products are exported to Europe and America. There is stiff competition with other processors in the West African sub-region, with major international players such as Cargill and Archer Daniels Midland involved in cocoa processing in Cote d'Ivoire and Ghana. As a result, margins are reportedly tight and processors in Nigeria face major challenges in lowering processing cost in order to remain competitive. Among the main constraints is high energy cost, especially with unreliable supply of electricity. Variability in the quality of local cocoa beans, which reduces processing

²⁵ Pers. Comm. with Country Manager of Audit, Control and Expertise (ACE).

²⁶ After Cote d'Ivoire, Ghana and Indonesia (FAOSTAT).

out-turn while raising cost, is another key challenge facing local cocoa processors. Lack of finance and relatively high of borrowing further inhibit local processing capacity²⁷.

Table 7 below shows that the value of annual output of the top-ten food crops produced in Nigeria is above US\$13.5 billion. However, according to estimates by the International Trade Centre/UNCTAD/WTO, the country imports food and food products valued at over US\$2 billion per year²⁸. Wheat and rice imports account for 30 percent of the food imports, with the total value of imported rice representing 35 percent of domestic production.

Table 7: Output and value of major agricultural produce in Nigeria (2007)

Agricultural commodity	Output (metric tonnes)	Value (US\$ million)
Cassava	43,100,000	2,479.58
Yams	31,136,000	5,026.35
Sorghum	9,058,000	920.65
Millet	8,090,000	1,158.72
Maize	6,724,000	535.14
Groundnuts (in-shell)	2,991,000	1,778.08
Rice (paddy)	3,186,000	652.55
Cowpeas	2,800,000	196.12
Sweet potatoes	2,432,000	244.39
Palm oil	1,300,000	393.56
Palm kernels	1,275,000	166.62
Total		13,551.76

Source: FAOSTAT

Supply-side measures implemented by Government boost agricultural output sector include distribution of subsidised inputs to farmers. For instance, under the Presidential Initiative on Rice Production, Processing and Export, “R-Boxes” containing improved rice seeds (NERICA 1 varieties), fertiliser, agro-chemicals, knapsack sprayers and extension messages were distributed to smallholder farmers. Similar support was provided to farmers cultivating oil palm and cassava. The Government of Nigeria also continued to support and expand coverage of the Nigeria Agricultural Insurance Scheme, which was established in 1987 to make agricultural investments more secured and therefore encourage financial institutions to lend to the sector. The Scheme operates on the basis of premium subsidy – farmers pay 50 percent of the chargeable premium while the remaining 50 percent is shared between the Federal Government and the relevant State Governments in the proportions of 37.5 percent and 12.5 percent respectively. To further improve access to credit, Government in 2001, raised the capital base of the Agricultural Credit Guarantee Scheme Fund (ACGSF), which was established by in 1978, from ₦100 million to ₦3 billion (equivalent to US\$26.08 million). The Fund guarantees credit facilities extended to farmers by banks by up to 75 percent of the amount in default net of any security realized. The Fund is managed by the Central Bank of Nigeria (CBN), which handles the day-to-day operations of the Scheme.

To complement the above, the Government of Nigeria adopted interventionist measures aimed at increasing aggregate industrial demand for agricultural produce, an example being policy measures to increase industrial utilisation of sorghum by breweries. As shown in Figure 7 below, Nigeria ranks second only to the US in terms of global output of sorghum. As a drought-tolerant crop, it is produced predominantly in relatively drier northern regions of the country and accounts for about 70 percent of the calorific requirements of the population in those regions²⁹. To compel breweries to use sorghum, the Government in the 1980s

²⁷ These constraints were revealed in discussions with the Executive Director of Multi-Trex, the leading local cocoa processing company with installed capacity of 65,000 tonnes.

²⁸ Source: www.indexmundi.com/trade/imports/?country=ng&division=04

²⁹ Reported in study by Aba et al. (2004).

imposed a temporary ban on the importation of malt barley for brewing beer. Though the ban was subsequently lifted, the successful adaptation by the breweries meant that they did not only continue to use sorghum malt for beer but also as a major ingredient in producing other alcoholic and non-alcoholic beverages³⁰.

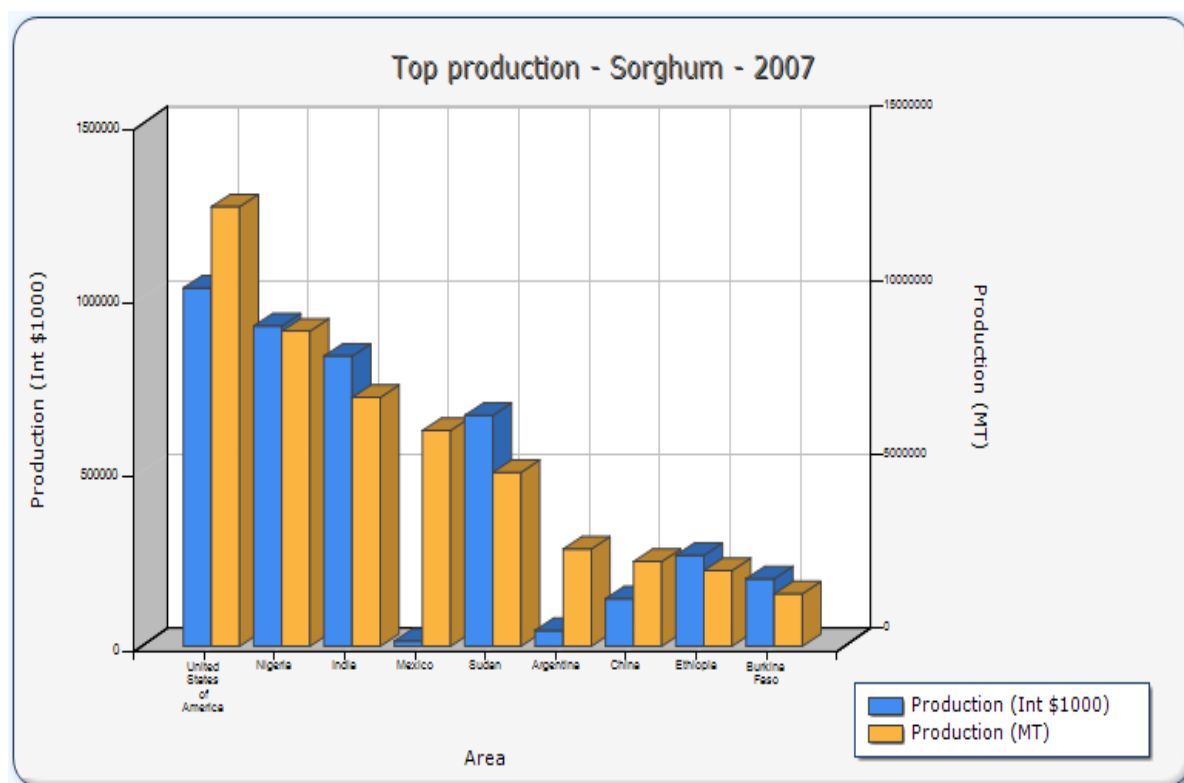


Figure 7: Global production of sorghum (2007) – FAOSTAT.

A similar approach was adopted under the Presidential Initiative for Cassava (PIC) to promote industrial utilisation of cassava, for which Nigeria is by far the leading producer in the world. This involved requiring flour mills to include 10 percent cassava flour in composite flour used for baking in the country. Sustained progress in achieving the objectives of the PIC was hampered by implementation inertia which occurred following a change in government in 2007 as well as the severely limited capacity of the then burgeoning cassava processing industry to deliver the required volumes of high quality cassava flour to the flour mills. In 2009 the Nigeria parliament begun considering draft legislation to underpin the policy of inclusion cassava flour in baking flour.

In general, efforts to promote industrial uptake of agricultural produce in Nigeria has often been frustrated by such problems as quality uncertainty, which characterise the predominantly informal trade in agricultural commodities. Furthermore, transactions involving agricultural commodities are not based on formal standardised measures. These conditions make it impossible or very difficult for impersonal trade-by-description to occur and compel trade counterparties to certify quality and quantity by physical sampling, thereby increasing the cost of transacting. Lack of reliable market information, not only on commodity prices but also on available volumes and estimates of demand, tend to increase information asymmetry between trade counterparties. High intra-seasonal price variability is quite common for most of the agricultural commodities produced in Nigeria. It was anticipated that a well-functioning agricultural commodity exchange will reduce these problems and shorten the supply chain for most commodities, consequently improving producer incentives and making investment

³⁰ Source: INTSORMIL Report No. 17, January 15 2008.

in value addition in the agricultural sector more attractive. In the next chapter we examine whether market players have enjoyed these benefits in Nigeria.

6. Review of the performance of the Abuja Securities and Commodity Exchange

6.1 Introduction

The Abuja Securities and Commodity Exchange (ASCE) was originally incorporated as a Stock Exchange on June 17, 1998. It was converted into a commodity exchange in August 2001. This was in part due to recognition that the securities market in Nigeria was at that time too thin to support two viable stock exchanges³¹. The conversion was also intended to create an alternative institutional arrangement that would facilitate marketing of agricultural produce as well as enable market players to manage price risk. The need for this type of market institution became evident following the abolition of the commodity boards in Nigeria in 1986. Prior to that, while marketing of food crops was largely left to the informal market, the commodity boards controlled the marketing of cash (export) crops. As in other African countries, the commodity boards fixed commodity prices, often without reference to international market prices or local production costs, hence distorting producer incentives and stymieing output growth³². Abolition of commodity boards was to redress these problems, but their exit created an institutional vacuum in commodity marketing in Nigeria which was expected to be filled with the promotion of a commodity exchange. An Inter-Ministerial Technical Committee was set up at the behest of the Central Bank of Nigeria (CBN) to examine the prospects for setting up an agricultural commodity exchange it recommended conversion of the stock exchange in Abuja into a commodity exchange.

The ASCE was expected to contribute to the transformation of the agricultural economy of Nigeria by promoting standardisation in trading, offering market-based instruments to mitigate price risk and improving access to agricultural finance. These developments were to enlarge the formal segment of agricultural markets catalyse commercial farming in the country. It was planned that the Exchange will start operations as a spot market and eventually evolve into a futures market, trading commodity futures and options. Though its primary focus was to be on trading contracts in agricultural produce, it was also expected to trade in solid mineral products, energy, financial indices and currencies. It commenced spot trading in agricultural commodity contracts in July 2006.

6.2 Ownership, membership and governance

The ASCE is wholly owned by the Federal Government of Nigeria as a parastatal under the Ministry of Commerce. It has three categories of members, namely: Ordinary members, Trading members and Institutional trading members. While Ordinary members are by the Rules of the Exchange not allowed to execute or initiate trades on their own accounts or on behalf of others, the Trading members can do so. The Ordinary members can only trade on the Exchange through registered Trading members. The Trading members include stock and commodity brokers and dealers as well as Commodity Merchants, who trade in agricultural commodities and are restricted to trading only on the cash market and on their own accounts. The Institutional Trading Members can only trade on their own accounts but not on behalf of other members or clients. They include agro-processors, financial institutions, large-scale commodity traders, importers and exporters. Membership of the Exchange is open to individuals and corporate entities. The registration requirements, membership rights and fees are prescribed in the ASCE Bye-laws, Rules and Regulations.

³¹ Source: ASCE Overview (2006) – official document.

³² These issues are discussed in more detail by Olayide et al. (2008).

The ownership and management of ASCE are completely separated from the rights of members. Policy matters related to the Exchange as a company are determined by its Board of Directors, while market decisions relating to operations are delegated to the Council. The Board is dominated by technocrats, including a senior representative of the Central Bank of Nigeria. Membership of the Council includes members of the Exchange, commodity associations, warehouse operators and collateral managers, clearing banks and other financial institutions. The Council operates through four standing Committees, namely: Membership and Finance Committee, Trading Committee, Clearing House Committee and Arbitration and Vigilance Committee.

The Managing Director/CEO is ultimately responsible for the day-to-day management of the Exchange. He is supported by a team of highly qualified technocrats. Most of the staff have had training in the form of participation in relevant short courses and international seminars, workshops and conferences as well as study visits and attachments. In addition, it has ongoing technical collaboration with other commodity exchanges in developing countries, including in particular with the Zhengzhou Commodity Exchange in China through which it receives support in developing appropriate IT infrastructure and systems. It operates through six main departments: Market Development, Membership and Client Relationship, Risk Management and Market Surveillance, IT and Communications, Accounts and Finance, and the Human Resources Departments.

Activities of the ASCE are regulated by the Nigeria Securities and Exchange Commission (NSEC), which also regulates the Lagos-based Nigerian Stock Exchange. It was established by the Federal Government by the Securities and Exchange Commission Decree of No. 7 of 1979 and later by the Investment and Securities Act No. 45 of 1999. Its mandate in regulating and contributing to the development of the Nigerian capital and commodities markets include registration of securities and market intermediaries to ensure that only fit and proper persons/institutions are allowed to operate in the market. It also exercises surveillance over exchanges and trading systems in order to forestall breaches of market rules as well as deter and detect unfair manipulations and trading practices to prevent market disruption. As part of this process, the NSEC conducts investigations of alleged breaches of the laws and regulations governing the capital and commodities markets and enforcement of sanctions where appropriate.

The regulatory function of the NSEC, in particular in registering and regulating the activities of brokers, complements the self-regulatory role of the ASCE in ensuring its members comply with rules and procedures that guarantee the integrity of trade contracts. The key staff at the NSEC who are responsible for regulating the ASCE have had training in the operations of commodity exchanges. Some of the training programmes the staff benefited from were run by the ASCE for market participants and other players.

6.3 Functions of the ASCE

The ASCE primarily offers a platform for trading contracts on agricultural commodities and solid mineral products. The Exchange started operations with a manual floor-based call-over trading system. Sellers were required to deposit their commodities at ASCE-designated warehouses for approved assayers to certify the quality. Thereafter, samples of the commodity and the quality certificate are delivered to brokers, who present the certificates and samples to the Assaying Officer of the Exchange for a second assessment of the quality prior to trading. This process appears to increase the cost of transacting and could be significantly reduced if a robustly-run receipt system existed to guarantee delivery of described commodities. Selling and buying brokers deposit 5 percent of the value of the commodity to be traded in the trading margin account as a means of ensuring contract performance. Deliveries are completed within 10 and 20 working days after the trade, depending on the volume of the transaction.

An electronic trading system has been adopted by the ASCE, allowing trading members to submit online “buy” or “sell” orders for various tradable commodities. Selling brokers are expected to forward their delivery notices to the Exchange within five working days after the trade and commence delivery within 6-9 working days. Buyers are also required to pay for commodities bought within 10-19 through the Exchange, which has to ensure that sellers are paid latest by the 20th working day after the trade.

A similar electronic system has been adopted by the ASCE for its “Policy Auction” platform, which is used to facilitate bulk procurement by Government and international relief agencies and NGOs. Brokers participating in this trade make offers against the quantity on the auction up to the limit of their margin account with the Exchange. The system electronically allocates quantities based on the price and time priority and successful offers are transcribed into valid contracts. Despite the adoption of the electronic trading system, the back-office activities related to quality assurance remain virtually the same as in the case of the manual trading system.

6.4 Supporting institutional infrastructure and operating systems

In Figure 1 we illustrated the key prerequisites for a successful commodity exchange with the case of JSE/SAFEX. The institutional infrastructure and operating systems which the ASCE has developed to support trading are discussed below:

a) Quality assurance system

The ASCE has quality standards defined for the following commodities: maize, sorghum, soya beans, groundnut, cotton seed, sesame seeds, cocoa and coffee. Quality certification is undertaken at two levels: first by approved assayers who determine the quality of commodities intended for trading; and second by personnel of the ASCE at its state-of-the-art laboratory at its Abuja head office. Quality parameters for different categories of the commodities are prescribed. The categories are defined by the purpose for which the particular commodity is utilised. For instance, maize and sorghum are categorised according to uses such as for brewing, feedstock production, flour and production of infant food.

Moisture content is a common parameter for all purposes, but foreign matter and acceptable levels of Aflatoxin are prescribed for infant food, largely because the lead buyers of cereals for this purpose, including Nestle, are particularly stringent in enforcing these standards. This does not appear to be the case when maize or sorghum is intended for producing flour, a case where similar food quality concerns are high. Commodity standards adopted in markets such as the US, Southern and Eastern Africa are based on grading systems, either numeric (1 – 5 as in the US) or alphabetic (as in Southern Africa), where standards are tighter for top grade commodities intended for the more quality-sensitive markets. A similar model could make the link between quality and premium prices clearer and potentially foster compliance with tighter grading standards by producers and traders. It may also enhance prospects for harmonisation of standards for regionally-traded commodities which are traded by the ASCE.

b) Bank-based clearing and settlement system

Members of the ASCE maintain clearing accounts with appointed clearing banks of the Exchange, exclusively for settlement purposes. Trading members also contribute to a Settlement Guarantee Fund which is used to guarantee completion of settlement. So far,

there have not been any documented complaints about settlement, implying that the system is working reasonably well.

c) Risk management and arbitration system

As stated above, trading members are required to deposit margins in their accounts, representing 5 percent of the value of the trade exposure. The Risk Management and Surveillance Division of the ASCE monitors closely the trading position of the members to avoid non-compliance with the relevant regulations.

Since all contracts and transactions executed through the Exchange are subject to its By-laws, Rules and Regulations, all claims, differences and disputes arising from such transactions are compulsorily referred to a panel of arbitrators nominated by the Council of the Exchange and from which the parties choose their arbitrator. The arbitration process is legally premised on the Arbitration and Conciliation Act, Chapter 19 of the Laws of the Federation of Nigeria 1990. Hence, decisions by the arbitrator are enforceable in the courts of Nigeria (Section 30 of the Act).

d) Market information system

The ASCE disseminates market information through the brokers, its official website (www.abujacomex.com), radio broadcasts and newspaper publications. The information disseminated includes the following:

- ASCE news – basically information on buy and sell orders and promotional news on especially training programmes.
- Commodity prices in major market towns and cities. Collection of this information is at considerable cost to the Exchange as it entails paying monthly stipends to agents in over 80 market centres in 35 states in Nigeria.
- Prices of major commodities traded in key West African markets, including cereals and cocoa. However, these prices are not updated regularly and are therefore not very relevant to market players.
- General and agricultural news – encompassing news reports with relevance for the commodity sector (e.g. *“Federal government advocates revival of groundnut production in Africa”*; and *“Food prices remain very high in developing countries”* – culled from press reports on 22nd July 2009).
- Lists of brokers, warehouse operators/collateral managers, location of designated warehouses, commodity associations etc.
- Market information – including exchange rates, weather forecast, transport costs between major cities and towns and average market handling charges in major markets in the country.

During the wrap-up discussions with officials of the Exchange the following options were discussed to improve the market information system:

- ✚ Scaling down the number of market centres from which commodity prices are tracked to very few strategic markets, depending on the type of commodity. This will enable the ASCE focus resources and deliver timely information.
- ✚ The ASCE produces and disseminates regularly updated crop budgets, that track demand and supply of the traded commodities as well as analysis of main factors that affect the market. The South African Grain Information System (SAGIS) provides such information, which is published by JSE/SAFEX and contributes to ensuring that market participants are better informed. Market players in Nigeria would benefit if such information is provided, especially if the ASCE is to attract investors other than

sellers and users of traded commodities. The ASCE may consider a strategic alliance with a private service provider to deliver this service.

- 🚧 Technical assistance to the Exchange in improving its information collection and dissemination remains a critical priority.

e) Physical delivery system

Currently, the ASCE designates specific warehouses as delivery locations. Criteria for certification of warehouses and operators by the Exchange are prescribed in the Rules and Regulations for Warehouse Operators. The requirements include minimum storage capacity, which is set at 500 tonnes and basic facilities including a weighbridge and grading equipment. Minimum capital for certification is set at the equivalent of about US\$1 million. Other requirements include submission of audited accounts for a minimum of three years, insurance cover for the warehouse and its contents, and staff with proven experience and training in warehouse management. The certified operators are also required to comply with inspection and audit procedures prescribed in the Rules and Regulations.

Though existing laws in Nigeria, as a common law country, allow for third-party storage and collateralisation of stored commodities, including commodities stored under collateral management agreements. However, lack of specific warehouse laws has created a situation where there is lack of clarity regarding legal rights of third party holders of receipts, in particular as the transferability or negotiability of the receipt is not clearly defined in law. Regulatory oversight of the warehouses is unclear as, for instance, inspections can be undertaken by officials of the ASCE as well as private assayers and the prescribed sanction – a fine equivalent to US\$2,000 for a material breach – may not be sufficient deterrent. Furthermore, the capital requirements are not tight enough and need at the least to reflect requirements for licensing non-bank financial institutions.

It was reported that lack of specific warehouse legislation discouraged insurance companies from insuring public warehouses. It also made financing against inventories held in the ASCE-designated warehouses unattractive to banks. As such the designated warehouses are utilised primarily for short-term stockholding for transaction-specific trading purposes and it is difficult to issue standardised contracts, which will be attractive to users as well as investors. This appears to be most critical weak link in the institutional infrastructure required to support the operations of the ASCE. The development of a robustly regulated receipt system is, therefore, crucial in improving the performance of the Exchange while reversing the trend reported in Section 5.3 about the decline in inventory financing resulting from the scaling back of delivery of collateral management services.

f) Training of key market players

The ASCE offers training courses in commodity trading for staff of registered trading members, including brokers, as well as for the general public. The courses are structured as follows: Foundation, Intermediate and Advance training courses. They are usually of three-day durations and participants pay fees set respectively at the equivalent of US\$300, US\$400 and US\$500. The programmes are reportedly over-subscribed, particularly by young graduates hoping to encounter the formal commodity trading industry as well as personnel of financial institutions.

6.5 Review of the performance of the ASCE

Between July 2006 and end of the first quarter of 2009, the ASCE traded a total 2,874 tonnes of agricultural commodities. There was no recorded trade in solid minerals. Trade in sorghum (white/yellow) represented 56.2 percent of the total volume trade over the period of almost four years, though its of the value commodities traded was 31.7 percent (Table 8). Cowpeas and soya beans accounted for 37.2 percent and 22.5 percent respectively of the value of commodities traded, while the total value of maize, millet and groundnuts traded represented only 9.1 percent of the total traded. No trade was recorded for commodities such as sesame seed, garlic, cassava chips and ginger.

Table 8: Abuja Securities and Commodity Exchange (ASCE): Trade data (2006 – 2009)

Commodity	Total volume traded (tonnes)	Value of traded commodities		Share of total value of traded commodities (%)
		(Naira)	(US \$)	
Maize (white/yellow)	112	1,625,500	13,569	3.4
Sorghum (white)	985	10,693,750	92,989	23.3
Sorghum (yellow)	628	3,861,031	33,574	8.4
Soya beans	342	10,599,179	89,815	22.5
Cowpeas	716	18,576,000	148,608	37.2
Millet	80	1,318,000	10,544	2.6
Sesame seed	•	•	•	•
Groundnut	11	1,514,700	10,446	2.6
Garlic	•	•	•	•
Cassava chips	•	•	•	•
Ginger	•	•	•	•
Total	2,874	48,188,160	399,546	100.0

Source: ASCE.

The major buyers of the commodities were industrial end-users such as Guinness Nigeria PLC (brewery), Grand Cereal and Oil Mills Ltd. (oilseed pressers) and other processing companies. Total expressed demand (in the form of bids) for the major traded commodities from these buyers was over 7,000 tonnes in 2007 and about 10,000 tonnes in 2008. However, in 2007, only 25 percent of their demand was met while the Exchange recorded no significant trade in 2008. Indeed, while the volume traded in 2006 was 986 and rose to 1,877 in 2007, there was no recorded trade in 2008 and by the end of the first quarter of 2009 only 11 tonnes of groundnuts had been traded. In 2007, one buyer placed an order for 500,000 tonnes of cassava chips but no offers were received.

At this very low level of operation, the ASCE is unlikely to be financially sustainable. Assuming its total annual operating cost is about US\$ 2.7 million, the Exchange needs to attract trade transactions representing 837,000 tonnes of the major traded commodities per annum to break even. The estimated value of the breakeven volume of commodities traded is US\$ 125.55 million. Lowering operating cost, for instance, through downsizing the organisation is one option that can directly reduce the estimated breakeven volumes for the ASCE. For example, if annual operating cost is reduced to about US\$ 1.85 million, the required breakeven volume is estimated at 575,000 tonnes, valued at US\$ 86.36 million. Another strategy to reduce the breakeven volume of physical commodities traded through the Exchange will entail attracting non-end-use investors. This will lead improve market liquidity, with traded contract volumes representing multiples of the underlying physical stocks as occurs in matured markets such as JSE/SAFEX.

The underlying assumptions made in estimating the breakeven volume include the following:

- Personnel cost represents about 35 percent of total operating expenses and that there is no change in number of personnel, which currently stands at about 30.
- Commission on trade transactions accounts for close to 95 percent of total revenue for the Exchange, which charges 2 percent of the value of the transaction. Brokers also earn similar fees per transaction.
- The major commodities currently traded will continue to dominate transactions on the Exchange and that annual output and value of these commodities will remain at the current levels (as indicated in Table 7).

To put the estimated breakeven volume in context, the high-end figure of 837,000 tonnes of the major traded commodities represents only 2.82 percent of total annual production of those crops (namely: maize, sorghum, millet, groundnuts and cowpeas – estimated at over 29.6 million tonnes per annum – Table 7). It also represents 35 percent of demand for industrial end-users and major exporters of maize, sorghum, soybeans and cocoa as illustrated in Box 5 below.

Box 5: Estimated demand for major agricultural commodities from formal buyers in Nigeria

The target buyers include processors of agricultural commodities such as oilseed processors, cocoa processors, millers, breweries, baby food manufacturers and producers of animal feed. These buyers tend to be highly quality sensitive in the procurement of agricultural raw materials. They also require assured delivery of sizeable volumes on a regular basis and relatively more predictable commodity prices. These characteristics make it difficult for suppliers in the informal agricultural supply chains to meet their demands, implying that exchange-based trading is likely to be more attractive to them. Exporters of agricultural commodities have similar requirements. We estimate the annual demand for maize, sorghum, soya beans and cocoa from these buyers at close to 2.4 million tonnes. This estimate is derived as follows:

Commodity	Purpose	Volume (tonnes)
Maize:	Industrial use	= 116,500
	Animal feed production	= 750,000
	Export	= 100,000
	Sub-total	= 966,500
Sorghum:	Industrial use	= 417,300
	Export	= 50,000
	Sub-total	= 467,300
Soya beans:	Industrial use	= 580,000
	Sub-total	= 580,000
Cocoa:	Local processing	= 150,000
	Export	= 190,000
	Sub-total	= 340,000
Total for selected commodities		= 2,353,800

Source: Based on data and information from Alabi O. O. (2008), "USDA (2009) and USAID Nigeria Food Security Reports (Various years).

6.6 Conclusions and recommendations to improve performance of ASCE

The foregoing review indicates that it is feasible for the ASCE to achieve the breakeven volumes estimated in the preceding sub-section. However, having to rise from the current very low levels imply that this will entail a very steep climb. To enhance prospects of achieving this objective in the medium term, it is important that the ASCE adopts strategies which will engender stakeholder confidence in its role in facilitating trade, commodity finance and price risk management. Below are recommended measures, some of which were discussed with officials of the Exchange during a wrap-up meeting in the course of this study:

- a) Developing a robustly-regulated and trusted warehouse receipt system that encourages intra-seasonal storage in well-run third-party facilities. This will make it possible for the Exchange-designated warehouses to attract deposits, especially as it will make inventory financing more attractive to the banks³³. It will also make it possible for the Exchange to issue and promote trade in standardized contracts, thereby attracting more market participants including investors. However, it emerged from the consultations that the development of such a system will require specific warehouse legislation to clarify the rights of third parties to whom receipts are transferred by trade or a pledge as well as the authority of warehouse regulators. The ASCE has already initiated consultations with the Federal Government of Nigeria regarding warehouse legislation and needs to follow this up. There is also the need to tighten up the existing ASCE warehouse regulations to be consistent with any such legislation or prior to that assure parties that their interests in underlying commodities stored in designated warehouses will be well protected. These measures are important in attracting participation by credible insurance companies and the banks.
- b) The ASCE's market information system requires revamping to make it more attractive to market players. Rather than spread itself thin in many local markets and cover a very broad range of agricultural commodities, it will be worthwhile for the ASCE to focus on strategic commodities and markets and ensure very timely dissemination of accurate price data and other market-relevant information. Developing a strategic alliance with private service providers offers a means by which a sustainable and cost-effective system may be developed.
- c) The commodity standards adopted by the ASCE may require revision in order make them more trade-friendly while ensuring greater transparency of premium-price incentives. In particular, if the ASCE intends to go beyond its aspiration and actually become a relevant player in regional agricultural trade, then it needs to collaborate with other players in harmonizing quality standards and grading systems for major commodities traded in the region. Allied to this is the need to engage with policymakers to lower policy-related barriers to regional trade in agricultural commodities. The process of revising commodity standards and well as advocating trade policy reforms need to actively involve, indeed if possible led by, private sector players.
- d) Promotional drive to attract increased use of the trading platform offered by the Exchange as well as designated storage facilities. Media campaigns, seminars and workshops offer a means to promote the Exchange but what is being advocated here is a sustained programme to foster engagement with specifically targeted stakeholders such as industrial end-users of focal commodities, exporters and other major traders, insurance companies, financial institutions and farmers' associations. This engagement

³³ Officials of Standard Chartered Bank PLC in Nigeria, consulted during the study, are particularly keen to scale up inventory financing if the appropriate receipt system is developed.

should focus on addressing factors identified by the stakeholders as constraining their use of the Exchange and the related services being offered.

- e) Related to the above, it may be necessary for the Federal Government of Nigeria to encourage private equity participation in the Exchange. This will certainly impact on the governance structure, ensuring private sector control over the operations of the Exchange and could be really crucial in engendering stakeholder confidence in the institution.
- f) The ASCE will require technical and financial assistance in implementing the measures outlined above and others which may be necessary to transform it into a more viable Exchange. Such assistance will enable the Exchange to properly define its agenda and refine its strategy while ensuring availability of resources to implement its programmes.

7. Conclusions and way forward in promoting viable commodity exchanges in Ghana and Nigeria

7.1 Summary of observations

Apparently motivated by the potential benefits market players could derive, private and public stakeholders in Ghana and Nigeria pursued initiatives to establish agricultural commodity exchanges and related institutional infrastructure, including in particular warehouse receipt systems (WRS). Some of the initiatives were implemented or supported by donor-funded projects. Though the routes taken in the two countries differed, the outcomes have been similar, that is viable exchanges are yet to emerge in the two markets.

Nigeria focused initially on building the exchange super-structure by establishing the Abuja Securities and Commodity Exchange (ASCE) followed by subsequent efforts to develop the underpinning institutional infrastructure. The ASCE operates within a clearly-defined regulatory framework involving oversight of the exchange and its trading members by the Nigeria Securities and Exchange Commission (NSEC). It has basic institutional infrastructure including an electronic trading platform, a bank-based clearing and settlement system and dispute resolution system which appeared to have worked well with no major complaints from market actors. It has an operational quality assurance system which requires enhancements in the form of simplifying commodity standards to make them more trade-friendly and less costly to enforce. Similarly, its market information system needs to be improved to become more relevant to market players as stated in Section 6.6. It is, however, evident that the most binding constraint faced by the ASCE has been the inability of the exchange-designated warehouses to attract deposits, thereby making it possible for the exchange to issue and promote trade in standardized contracts.

In contrast, Ghana appears to have opted for developing a WRS to underpin exchange trading. Previous efforts to develop WRS appeared to focus almost entirely on fostering access to inventory credit rather than consciously laying the foundations for a reliable delivery system for an exchange. It cannot be said, however, that it was this apparent lacuna which hampered the development of the WRS. What most frustrated the efforts at promoting WRS were policy-related constraints discussed in Section 4.3. Ghana lags behind Nigeria in terms of developing supportive institutional infrastructure for an exchange but the recent emergence of a strategic alliance of key stakeholders has significantly improved prospects for success in promoting a viable one in the country. Different players in the alliance are focusing efforts on developing the pillars which together will ensure the viability of the proposed Ghana Commodity Exchange (GCX). First, the Securities and Exchange Commission (SEC), after initially leading in driving the agenda for the development of the exchange, appears to be concentrating on developing an effective regulatory framework to support exchange trading and the underpinning WRS. The Ghana Grain Council (GGC) with support from two related USAID projects is to launch a pilot WRS for grains but could include other storable commodities. A private non-bank financial institution, the CCH Finance House (CCHFH) intends to launch a programme to attract commercial finance against warehouse warrants. Bourse Africa, which is promoting a pan-African exchange model, has expressed interest in participating in the proposed GCX.

7.2 Summary of recommendations

a. Attract established warehouse operators in developing WRS

A common problem faced by promoters and managers of commodity exchanges in Ghana and Nigeria is the development of a credible delivery system that will attract significant volumes of trade from the informal sector. To address this problem the ASCE intends to launch a widely-accessible WRS with support from the Federal Government of Nigeria. A similar initiative has been launched in Ghana. It is recognised in both cases that such a system will require specific warehouse legislation to clarify the rights of third parties to whom receipts are transferred by trade or a pledge as well as the authority of warehouse regulators. Prior to promulgation of any such legislation, the existing ASCE warehouse regulations need to be tightened to assure third parties that their interests in underlying commodities stored in designated warehouses will be well protected.

Experience from WRS pilots in Africa suggest that developing a system that is trusted by large-scale farmers and traders as well as major formal end-users and financial institutions require considerable time and is fraught with uncertainty regarding political will to drive policy reforms and promulgation of new legislation. A strategy which can potentially ensure short-term progress in engendering confidence in the developing WRS involves attracting established warehouse operators. This strategy was adopted in Zambia in attracting one of the major storage/agricultural trading companies – Afgri – from South Africa. Afgri-Zambia is undertakes grain storage as well as actively trading in the local grain market. In Malawi the Government invited another South African grain storage and trading company – Senwes – to participate in storing strategic grain reserves for the country. Their entry can be strategic in ensuring increased liquidity in commodity trade as they bring not only their expertise in storage and commodity trading but also their long-term relationship with banks with a presence in the South African market.

b. Support development of “repo” systems to attract volumes of stored commodities

The informal trade in agricultural commodities, which predominates in both countries, entails minimal stockholding by traders largely because of lack of liquidity. Hence, to encourage temporal arbitrage, it is important that storage systems developed to support exchange trading do not only assure delivery but also enhance access to commodity finance. One means of achieving this objective is promote use of commodity sell-back or repurchase (Repo) contracts to encourage increased availability of commodity finance and at competitive interest rates. This system is common in Columbia and also in South Africa but yet to emerge in West Africa and we, therefore, highly recommend support to pilot such a system in Ghana and Nigeria.

c. Lower regional trade barriers

Significant trade in agricultural commodities occurs between Ghana and Nigeria as well as with neighbours in the region. Most of the trade is, however, informal and often unrecorded. It is apparent that promoters of commodity exchanges in the two countries perceive regional trade opportunities as offering a means to boost trading volumes. However, for this to occur, it is important that commodity standards are harmonised and barriers to agricultural trade dismantled or lowered. While the former is feasible, especially if the private sector takes the lead and mobilises support from the national standard boards, the latter may be more challenging. This is particularly because governments in the region often tend to opt for

securing “national supplies”, especially of cereals, whenever there is a hint of a short crop. To mitigate this risk, we suggest that promoters avoid focusing on commodities which are politically sensitive, especially maize and rice during the early stages of development of the exchange.

Furthermore, we strongly urge the formation policy advocacy platforms with representation private sector players from across various industries in the agricultural value chains. Such platforms should work with other stakeholders including civil society and donors to assemble evidence on appropriate agricultural trade policies as well as offer governments alternative means to manage food security policies in a manner that does not fatally hinder the private trade. Regular interaction between such platforms and policymakers can, at least, allow for free sharing of information to minimise the risk of policy-related shocks to markets.

d. Group formation is critical smallholder participation

In both Ghana and Nigeria the atomised structure of agricultural production and marketing systems limits options for participation by smallholders in exchange trading. The commercial or large-scale farming sectors in the two countries is under-developed, implying that unless large-scale traders participate there is little chance of assuring trading of significant volumes through the exchanges. However, evidence from successful pilots in Tanzania and Zambia demonstrate that strong, well-organised primary level farmer organisations can facilitate collecting marketing and therefore the use of WRS and modern marketing systems, producing significant financial benefits to farmers.

The chequered history of co-operatives in West Africa implies that they are very unlikely to be effective vehicles for mobilising smallholder farmers. NGOs have been rather more successful since the 1980s promoting farmer groups as a basis for delivery of credit as well as extension services and sometimes in undertaking collective marketing. The limitation faced by groups promoted by NGOs and donor projects is uncertainty regarding their legal identity. While co-operatives are usually recognised by law the status of farmer groups registered as associations is unclear. Legislative reform may be required to redress this problem in both countries. Additionally, most farmer groups will require reorientation from being vehicles for accessing and distributing donor/government resources to undertaking collective marketing on behalf of members. Capacity building in these areas is therefore essential. Appropriate training models and materials exist, including packages developed by FAO, which can be modified and used to train trainers and also members of the farmers' organisations.

e. Training for regulators and other players

The ASCE has training programmes for key stakeholders such as brokers, credit and risk management personnel of banks and non-bank financial institutions, commodity traders and farmer groups who are likely to deposit storable commodities, insurance companies, warehouse operators and collateral managers. We recommend that the proposed GCX offers similar training programmes. Further to these we also propose that training for managers and personnel of exchanges as well as regulators.

f. AAACP support for Ghana and Nigeria

This study has demonstrated that the emergence of viable agricultural commodity exchanges in Ghana and Nigeria is both feasible and potentially beneficial to market players including producers. However, success depends on implementation of the country-specific and generic recommendations outlined in this report. It is the view of the authors that UNCTAD and its partners can complement the efforts of local promoters and other stakeholders by offering technical and financial assistance in the following areas:

- i. Sharing lessons on WRS pilots with promoters in Ghana and Nigeria in order to manage expectations and avoid the pitfalls encountered in other countries.
- ii. Support the formation of effective policy advocacy platforms and contribute to the policy dialogue process with support to private stakeholders and civil society organizations to assemble evidence-based knowledge on the creation and maintenance of a policy and regulatory environment that is supportive of the operations of an exchange. Specific areas of support in this context include assistance in harmonizing regional commodity standards and lowering regional trade barriers.
- iii. Supporting pilots to promote the use of commodity sell-back or repurchase (Repo) contracts in financing collateralized stocks.
- iv. Assistance in the review of legislation regarding farmers' organisations to ensure that primary-level organisations are empowered to effectively transact and undertake collective marketing on behalf of members. This should be complemented with appropriate training for the primary-level farmers' organisations.
- v. Assist in training and capacity building for key stakeholders.

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