IMPROVING AGRICULTURAL MARKETING EFFICIENCY THROUGH THE COMMODITY EXCHANGE SYSTEM IN NIGERIA: A REVIEW

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Abstract

The characteristic of informal marketing (exemplified by black maketeering, smuggling, hoarding, haggling, lack of standards, wastage during harvest periods, as well as poor infrastructural supports) in the Nigerian agriculture, which has remained a major clog in the wheel of agricultural and economic development progress is very disturbing. It involves farm inputs and farm outputs as well as traded and non-traded commodities. This prevailing disorder in Nigeria, since the abolition of the 'commodity board' in 1987, makes farming business more risky and unstable thereby making farm operators to be in the dark as to what to produce, when and where to produce, how to obtain inputs and what the right prices are. This paper x-rays this disorder and recommends the establishment of commodity exchange as a measure to ameliorate the inefficient marketing arrangements in the country's agriculture. It analyses the fundamentals and features of commodity exchange with examples around the World. It further identified the risks involved and how the risks can be reduced. Importantly, the paper discussed the modalities for establishing the commodity exchange in the Nigerian situation specifying the roles of extension agency.

Key words: Agricultural marketing, Commodity exchange, Marketing efficiency, Nigeria.

Introduction

Marketing assumes greater importance as an economy becomes increasingly commercialised, leading to the growth of urban areas and consequently urban wage earners. This is because excess production from the farm must be disposed of, in order to earn some income with which the farmer can purchase other goods and services not produced by them. Marketing includes all stages of operation which aid the movement of commodities from the farm to the consumer i.e. assemblage of goods, storage, transportation processing, grading as well as financing all these activities (Adegeye and Dittoh, 1985). All these stages involve value addition to the products. Marketing systems are dynamic; they are competitive and involve continuous change and improvement. Businesses that have lower costs, are more efficient, and can deliver quality products while those that have high costs, fail to adapt to changes in market demand, and provide poorer quality. Marketing has to be customer-oriented and has to provide the farmer, transporter, trader, processor, etc. with a profit. This requires those involved in marketing chains to understand buyer requirements, both in terms of product and business conditions.

Agricultural marketing covers the services involved in moving an agricultural product from the farm to the consumer. Numerous interconnected activities are involved in doing this, such as planning production, growing and harvesting, grading, packing, transport, storage, agro- and food

processing, distribution, and sale. Such activities cannot take place without the exchange of information and are often heavily dependent on the availability of suitable finance. Furthermore, Agricultural marketing efficiency is the movement of agricultural products (crops, livestock, fisheries or processed products) from the producers to consumers at the lowest cost consistent with the provision of the services consumers' desire (Adegeye and Dittoh, 1985). It could be technical or economic efficiency. Technical efficiency measures the effectives or competence with which the physical aspects of marketing are performed. Such physical aspects include storing, transporting and other activities meant to reduce wastes and prevent deterioration in quality. To be technically efficient; a marketing system would have to utilise, with maximum effectiveness the best technology available for each marketing job, regardless of cost. Economic efficiency, on the other hand, requires the realisation of maximum output in monetary terms of a given output with the minimum resources. To be economically efficient, a marketing system would have to employ the methods of performing marketing jobs that are most profitable.

Basically, the overall aim of marketing efficiency is to provide goods to consumers in the required form and place with the lowest possible marketing costs consistent with the interest of the producers. Also, the structure, conduct and performance of an efficient market should entail a balance of buyers and sellers; freedom of entry and exit; uniformity of market charges; resource use efficiency; product improvement strategy; and maximum market services. Importantly, an efficient marketing system should contain enough spur to trigger production at the farm level and participation of all stakeholders in the entire product chain. Olayemi (1992) suggested that there is need for improved marketing system strategy for generating increased food production and promote farm production.

The Nigeria agricultural market is not organised and not working efficiently to the chagrin of the Nigerian farmers, consumers and other stakeholders like the extension service and input agencies. Informal marketing operation, exemplified by 'Black marketeering, smuggling, hoarding, unruliness, haggling, lack of standards and poor infrastructural support characterise the market (Onumah, 2010, Akinyosoye, 2005). The last set of organised agricultural marketing institutions was the Commodity Boards. But since the abolition of the marketing board system, informality of various dimension and intensity rules the entire Nigerian agricultural market.

In view of the foregoing, the Nigerian agricultural market does not send the right signals to farm operators as to what to produce, how to obtain inputs, what the right prices are, the qualities to produce and when and where to produce them. This prevailing disorder makes farming business risky and unstable in Nigeria. The same situation prevails in other African countries as (Lightfoot *et al.*, 2005) asserted that production without access to market was a problem for many livestock producers in Kenya. It is, however, hoped that the idea of establishing commodity exchanges in the country should help to ameliorate the decaying situation. An efficient market (where the price already reflects the available information) is important in that, market resources are better utilized; production increased, unemployment reduced; wastage reduced to barest minimum; and enhance efficient planning on the part of all stakeholders.

How commodity exchanges can improve Nigerian agricultural marketing systems

In Nigeria, the agricultural marketing systems are characterised by high food distribution margins and seasonal price variability. Temporal marketing margins are similarly high (Akiyama *et al.* (2001). 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 the country.

High transaction costs, poor storage, and inadequate access to trade finance as factors contributing to inefficiency in agricultural markets in most African countries (Onumah, 2010). Also, lack of formal quality/grading standards creates uncertainty about the quality and quantity attributes of goods being traded, hence the need for physical sampling necessitating personal interaction with producers (Fafchamps and Gabre-Madhin, 2006), which raises the cost of transacting. 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.

Lack of efficient storage facilities is one of the factors which limit temporal arbitrage and contribute to high seasonal price variability in Africa. Hence, farmers could not perform the market stabilizing functions. This situation is further compounded by the fact that private sector investment in storage infrastructure is often concentrated in urban areas and tends to support import/export trade rather than domestic trade in the food sector. Storage management capacities 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 collateral 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. Also, 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.

Onumah 2010 further identified the following economic benefits which commodity exchanges can serve as interventions to an efficient marketing system:

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 minimize 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.
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.

Fundamentals of commodity exchange

A commodity exchange otherwise known as future market exchanges (FME) is 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, and 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, interest rates and exchange rates or indices such as stock market and consumer price indices. They are market places designed to facilitate trading in future contracts. Future contracts that are traded on commodity exchanges are promises to deliver or accept delivery of specific commodities at a specified time in the future. With the nature of this market arrangement, no physical commodities change hands when the contract is traded and priced. Deliveries are made against the contract when it matures (or become due) in the month for which it is named. The payment for delivery of the commodity is at the price determined when the original trade was made, often several months prior to delivery. Hence, a seller of a futures contract guarantees delivery of the commodity at the price agreed upon when the contract is traded, and the buyer is assured of receiving the commodity in the specified month at the price. In actual fact, futures contract allow "forward – pricing" of commodity deliveries (Akinyosoye, 1989). Most commodity markets across the world trade in agricultural products and other raw materials (like wheat, barley, sugar, maize, cotton, cocoa, coffee, milk products, pork bellies, oil, metals, etc.) and contracts based on them.

A farmer raising corn can sell a future contract on his corn, which will not be harvested for several months, and guarantee the price he will be paid when he delivers; a breakfast cereal producer buys the contract now and guarantees the price will not go up when it is delivered. This protects the farmer from price drops and the buyer from price rises. Speculators and investors also buy and sell the futures contracts in attempt to make a profit and provide liquidity to the system. However, due to the leverage provided by the exchange to traders those participating in commodity futures trading face substantial amounts of speculative risk (Tracey-White, 2003).

Efficient marketing infrastructure such as wholesale, retail and assembly markets and storage facilities is essential for cost-effective marketing, to minimize post-harvest losses and to reduce health risks. Markets play an important role in rural development, income generation, food security, developing rural-market linkages and gender issues. Planners need to be aware of how to design markets that meet a community's social and economic needs and how to choose a suitable site for a new market. In many cases sites are chosen that are inappropriate and result in under-use or even no use of the infrastructure constructed. It is also not sufficient just to build a market: attention needs to be paid to how that market will be managed, operated and maintained (Marocchino, 2009). In most cases, where market improvements were only aimed at infrastructure upgrading and did not guarantee maintenance and management, most failed within a few years

(Tracey-White, 1995). Manyong et al (2005) asserted that the most critical constraint to private sector investment in agriculture is the infrastructural constraint as identified by at least 80% of respondents in all zones of Nigeria**.** This is manifested in form of bad roads, poor marketing facilities and outlets, and epileptic power supply.

Features of the commodity exchange

Unlike the stock market which deals with intangible goods, the Commodity Exchange Market deals with agricultural goods. However, Akinyosoye (2005) highlighted some form of similarities that exists between the commodity exchange and the stock market:

1. They are composed of traders who are authorised to buy and sell futures contracts for the public a commission or fee.
2. There is a trading floor where buyers and sellers meet.
3. There is a governing board or council which sets and enforces the rules for orderly transaction.
4. There is clearing house which facilitates trading and delivery of commodities.
5. Existence of floor and trading "pits" where actual trading is made.
6. There is the communications network, which links brokers throughout the world to the traders in the pits. The commodity-trading floor is a physical place, but it represents a world-wide market. There are many commodity exchanges in the world where over 50 commodities are traded. Importantly, commodity exchanges are found or located in cities, which are major transportation centers, and through which substantial portions of the products moves. Also, these locations are well-connected by modern communications systems.

The cash market may either be a spot market that requires immediate physical delivery of the specified commodity or a forward market where delivery of the specified commodity is made at a later date. The distinctive feature of the commodity exchange market is that it generally permits trading in various grades of the commodity. This protects the hedger-seller from being 'cornered' (cheated or exterminated) by speculator-buyers who might otherwise insist on delivery of a particular grade whose stocks may be small. Hence, since a number of alternative grades can be tendered, physical delivery of the commodities in fulfilment of the futures contract generally does not take place, and the contract is usually settled between buyers and sellers by paying the difference between the buying and selling price.

Examples of commodity exchange around the World:

The United States of America (USA) occupies the first place based on the number and volume of commodities in which active futures contractor exist. The Chicago Board of Trade (CBT), the largest of the world's futures market in terms of volume and value of business, is the centre of trading in wheat, maize, frozen Chicken, Soybean Oil, Soybean Meal, Oats as well as plywood. At the Chicago Mercantile Exchange (CME), there is active trading in fattened beef cattle, live pigs, frozen pork bellies, fresh eggs and potatoes. Cotton and wool are traded in New York Cotton Exchange (NYCE) and potatoes at the New York Mercantile Exchange (NYME). Wheat is

actively traded at exchanges in Minneapolis and Kansas city. Several other exchanges exist around the USA in various commodities. Outside the USA, there are futures markets for wool in London, Paris and Sydney (Australia), for cotton in Liverpool and Bombay, for sugar in London and Paris and for jute in Calcutta (India) (Hammords, 1972 and NFA, 2010).

The Kenya Agricultural Commodities Exchange (KACE) was initiated by a private entrepreneur but has been supported by various donors, including USAID, Rockefeller Foundation, 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 (Onumah, 2010).

In those places, country exchanges operate as a perfect competitive market. Futures market daily price quotations are published is print media and up-to-the-minute reports on exchange prices are available in the offices of most commodity brokers. At any point in time, there are thousands of buyers and sellers of future contracts participating in the market, and an even greater member of potential participants. Prices are established through open trading on the floor of exchange, where all buyers and sellers are represented either personally or via electronic communications through their brokers. Anyone, regardless of his/her profession can trade on the exchanges so long as they trade through member-traders or brokers. Most information on development affecting futures prices is public, and prices are communicated worldwide. It is therefore, extremely difficult to fix or manipulate futures prices. The complex mechanism of the market conduct should be properly understood. Hence , establishing such a market in Nigeria requires the understanding of the theoretical underpinning of the conduct of prospective participants of futures contracts which include, handlers of agricultural commodities; farmers, processors, middleman, public marketing establishments, private marketing establishments and retailers.

However, the participants are usually confronted with 2 broad types of risks:

1. Risk of product destruction
2. Risk of product deterioration

Product destruction comes from natural hazards such as fire, theft, wind etc. product deterioration comes from quality deterioration or price change largely because of change in consumer preference or acceptance, change in supply situation or change in the overall economic conditions of the nation e.g. inconsistencies in government policy pronouncements. In modern agri-business marketing management, product destruction risks are generally transferred to insurance companies for a fee. With quality deterioration, particularly with perishable commodities, there is little that can be done about transferring the risk and the handlers bear the loss alone. However, with the use of modern techniques, it is possible to minimise such risks.

Talking about risks from price changes, many devices are available to minimise or shift them from one person or establishment to another. Some of the methods of reducing such risks according to Akinyosoye (2005) are:

1. To improve on the gathering and dissemination of market information and
2. The standardisation of products.
3. Much of the government price stabilisation activities (through the disbanded commodity boards) are a mechanism for transferring price risk from producers and other handlers in the marketing chain to taxpayers
4. A government storage activity such as the strategic grain reserves program is another way of reducing the risk inherent in wide variations of available market volumes.
5. Vertical integration of the marketing channels is another method of reducing risks emanating from commodity price changes e.g. an integration contract with farmers can be arranged at fixed forward price, thereby transferring the risks from changing prices from the integrator. This arrangement was used by the Nigerian Tobacco Company (NTC) to reduce price fluctuations in the market for cured tobacco leaves.
6. Selling commodity in advance; i.e. the price is fixed and money collected in the present for delivery at a future date as was the case between poor cocoa farmers and financially-healthy itinerant buyers during the old days of the cocoa industry.

In the examples mentioned above, risks that people must bear are reduced and in some other cases, this risks are transferred from are person or establishment to another within the marketing channel. A mechanism for shifting risks of price changes to those outside the marketing channel of a commodity is a moral approach, which is this subject matter of this paper. The principal mechanism for contracting these outside risk-bearers and advanced financing of farm operations in known as the Commodity Futures Marketing which are basically established to provide insurance opportunities to farmers, agricultural marketing establishments and processors against the risks of price fluctuations under a rather complex arrangement. The futures market provides a mechanism for the member-trader to lower the per unit stock risk on his traded commodity in the cash market through what is known in the parlance of commodity exchange as “hedging”. A trader is termed a hedger if his commitment to buy or sell in the cash market is offset by an opposite commitment in the futures market. Thus, a hedger protects himself against loss resulting from price changes by transferring the risk to a speculator who relies upon his ability to forecast price movements to make profit.

Establishing and operating Futures Commodity Exchange: Modalities:

- Putting an efficient organisational framework of management in place: Delineating group of participants including scope of their activities and responsibilities. Identification of an apex organization responsible for policy formulation, design of control regulations, supervision and coordination of the participants’ activities.
- Establishment of a commission to manage the day-to-day activities of the commission with members drawn from CBN, Commercial Banks, organised private sector, extension agency, the stock exchange and reputable stakeholders. Establishment of Commodity Exchange markets in various locations with a trading floor or “pit” where traders are supposed to bid by open outcry in lots. Member-traders should be registered firms whom must have been properly screened by the commission.

- Creation of support institutions (most importantly a clearing house). Modern communication devices should be put in place in each futures market, clearing house and broker's office; all linked in a computer-to-computer network using wireless technologies.

Essentially, it must be understood that futures trading works best on commodities in which production is substantially high to eliminate any trace of shortages. If demand is much greater than supply, there will be room for manipulations and unfavourable price swings. The commodities must be storable, free from any government price control and must not be the exclusive preserve of few traders (Manyong *et al.*, 2005).

Roles of extension agency in agricultural commodity exchange

One of many problems faced in agricultural marketing in developing countries is the latent hostility to the private sector and the lack of understanding of the role of the intermediary. The extension agency should facilitate this activities and the establishment of the futures exchange markets as a mobiliser and an important link between the farmers and the market. Sensitization of stakeholders is crucial to the success of the future commodity exchange. Promoting market orientation in agricultural advisory services aims to provide for the sustainable enhancement of the capabilities of the rural poor to enable them to benefit from agricultural markets and help them to adapt to factors which impact upon these. As a study by the Overseas Development Institute demonstrates, a value chain approach to advisory services indicates that the range of clients serviced should go beyond farmers to include input providers, producers, producer organizations and processors and traders (Tracey-White, 2003). The use of marketing information systems is yet to be properly developed among farmers in Nigeria. Otitolaiye et al (2009) recommended that extension services should be trained to assist farmers develop the use of market information systems, including developing group approaches to marketing.

Conclusion and recommendations

Research and extension efforts cannot achieve any meaningful development in agriculture without an efficient market. The place of effective and efficient marketing system in the life of Nigerian agricultural transformation cannot be over emphasised. With a commodity exchange system in place, market arena for agricultural products will be limitless. This creates a boost for agricultural production and utilisation of inputs and other resources. Regular supply of raw materials for industrial use will be ensured thereby bringing overall economic development. The realisation of the most important objective of the MDGs (i.e. the eradication of extreme poverty and hunger) will be facilitated with the adoption of a commodity exchange market which will ensure the elimination of the various inefficiencies that characterise the Nigerian market. However, this improvement of marketing systems necessitates a strong private sector backed up by appropriate policy and legislative frameworks and effective government support services. Such services can include provision of market infrastructure, supply of market information, training in marketing at all levels, and agricultural extension services capable of advising farmers on marketing.

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