

The Impact of the Financial and Food Crisis on West African Rice Markets: Value Chain and Consumer Perspectives on Response Strategies¹

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Abstract: This paper seeks to understand how the global economic recession and the food crisis have affected rice markets in West Africa and explores actual and potential response strategies for the private sector, the public sector, and the donor community. Merging two new studies on rice in West Africa, these dual objectives are approached from two opposing angles. The first study uses USAID's value chain approach to analyze the supply side based on extensive desk research and fieldwork in Ghana, Liberia, Nigeria, Senegal, Benin, Cote d'Ivoire, and Mali. The second angle represents a demand side perspective based on recent consumer experiments carried out by the Africa Rice Center in Senegal. The paper's main findings are: (1) the US\$10 billion West African rice market is not a single, homogenous commodity market where competition is driven solely by price. (2) West African rice is currently in most cases less competitive than imported rice, but it has the potential to become competitive. (3) To date, rice value chains in West Africa have failed to achieve their considerable potential due to systemic constraints. (4) The governance of quality is of critical importance. (5) The reaction of donors and West African governments to the current rice crisis has been to launch programs and policies that focus heavily on production to the exclusion of complementary initiatives in processing and marketing, which are critical to match supply to demand. Recommendations for response strategy are presented.

Introduction

The recent global financial crisis and the preceding food price crisis exacerbated the food insecurity of the rural and urban poor in developing countries. The question of how national, regional and global agri-food

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systems can effectively respond to these crises and improve food security is once again at the top of the development agenda. This paper seeks to understand how the economic recession and the food crisis have affected rice markets and food security in West Africa and explores potential response strategies for the private sector, the public sector, and the donor community. Merging two new studies on rice in West Africa, these dual objectives are analyzed through the value chain lens from two angles. The first angle represents a supply-side perspective based on an extensive, regional value chain analysis. It presents the results of a major study conducted for the Global Food Security Response program of the US Agency for International Development (Campbell *et al.*, 2009). The second angle represents a demand side perspective based on recent consumer experiments carried out by the Africa Rice Center in Senegal (Demont *et al.*, 2010).

In most of West Africa, rice production has not been able to meet the increases in demand triggered by population growth, rapid urbanization, increasing incomes, and shifting urban consumer preferences (Figure 1). As a result, the region relies on imports to supply half of its demand for rice.

Figure 1: The Increasing Rice Production Lag in West Africa (million MT)

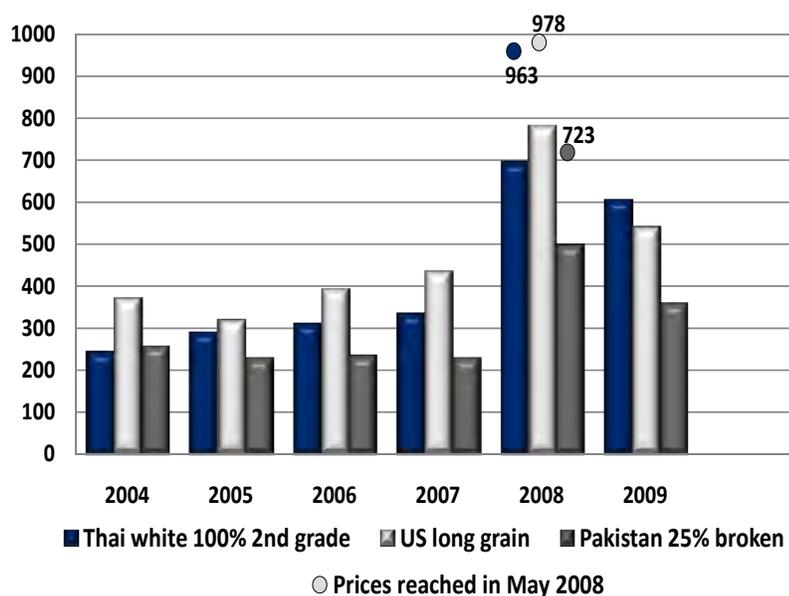


Source: Campbell *et al.*, 2009

In May 2008, world rice prices tripled in just a few months time to reach 30 year, inflation-adjusted highs (Figure 2). These dramatic price-spikes combined with an overall import level into West Africa that over

time swelled to six million metric tons (i.e., 20% of the world's rice imports), implied that government could no longer afford traditional price interventions to protect domestic rice consumers from the volatility of the global rice market. Although the 2008 rice price crisis may in part have been driven by temporary speculation and a weak US dollar, there are underlying structural trends that have caused an increase of the price of rice (and other staple foods) to a higher plateau.

Figure 2: The Global Rice Price Shock (US\$/MT)



Source: Campbell et al., 2009

The comparative advantage of local rice production has been one of the key issues in the food policy debate in Africa since the early eighties (Pearson *et al.*, 1981). However, policies for increasing competitiveness have mainly focused on productivity and prices. The 1994 devaluation of the FCFA, a failed attempt to reverse the historical urban bias and divert African rice consumers from imported to local rice, clearly illustrated that price policies do not work well in the context of the African rice sector due to a low price response by rice consumers and producers. This suggests that non-price strategies may be needed to enhance the competitiveness of the sector. Establishing efficient *value chains* is cited by the World Bank (2008) as a first policy objective in making agriculture more effective in supporting sustainable growth and reducing poverty. Therefore, taking a value chain perspective, we identify some systemic key constraints and challenges to competitiveness and explore opportunities for upgrading African rice value chains with the aim of simultaneously increasing food security and reducing poverty.

A Value Chain Approach

Value chains are defined as strategic vertical alliances of non-adversarial relationships between stakeholders within a product's supply chain (Hobbs *et al.*, 2000). The value chain approach is a holistic methodology that takes into account all firms in a market system and the environment they operate in (Neven 2009, Kaplinsky and Morris, 2001)—this is especially important for staple food commodity value chains in developing countries that have to become more competitive at every stage. When domestic production based staple food commodity value chains become more competitive they will contribute to food security and income growth. Moreover, by linking producers to consumers through a shared objective, value chains present a more sustainable approach to consumption and production than segmented and adversarial production chains (Demont, 2010). The market demand-driven strategy upon which it is based distinguishes value chains from traditional business relationships. Value chains are built on cooperation rather than adversarial business relationships; its members recognize that participants must create a win-win situation whereby they all benefit financially and all are part of the information sharing and decision-making process.

A critical challenge in the development of African rice value chains is the governance of quality throughout the supply chain, whereby quality should be tailored to the food preferences of end-market consumers. Evidence from across the world shows that market forces alone are sub-optimal in achieving these ends and other governance mechanisms (long-term contracts, alliances, vertical integration, etc.) are needed to compensate for this market failure and to ensure that suppliers develop the capability to comply with changing consumer demands as rapidly as possible. In high-value markets in developing countries, an evolution towards increasing levels of coordination between different actors in the supply chain has been observed and the question is whether similar patterns of supply chain governance could arise in staple food supply chains, which typically have lower value added over the chain. Swinnen *et al.* (2010) formally show that the development of chain governance is less obvious in the staple food sector. Staple crops such as rice are characterized by low value and high storability and there are a large number of small traders, which increases the possibility of contract breach. These characteristics make it very unlikely for chain governance to arise spontaneously. They conclude that only if the value of staple crops could be increased and contract enforcement improved, interlinked contracts or other non-market governance mechanisms may develop.

The existence of systematic price discounts for local rice relative to imported rice in some African countries suggests that there is underinvestment in product quality upgrading and consumer focus. Evidence from poor Asian countries shows that research on quality has a high payoff (Unnevehr,

1986), which is consistent with the finding that even the very poor have more income elastic demand for food quality than for food quantity (Shah, 1983). The market provision of quality, however, is notoriously fraught with difficulties under asymmetric information: when producers cannot credibly signal the quality of their products, consumers' choices are predicated on the perceived average quality on the market, and this pooling equilibrium leads to market failures (Akerlof, 1970). Therefore, any quality upgrade needs to be accompanied by a credible certification system (Moschini *et al.*, 2008). Quality standards, certification and quality control become more relevant as the value chain moves from being supplier driven to increasingly buyer-driven (ACI, 2005). Branding and labeling increase visibility and trust in rice consumption and are an integral part of value chain upgrading and innovation.

Methodology

As indicated supra, this paper is derived from two new studies on rice in West Africa. The first study is a *regional rice value chain study* that is based on three components that build on and inform each other (Campbell *et al.*, 2009). *First*, a desk study captured and codified a breadth of data on the rice value chain in West Africa, and included a review of over 300 documents as well as key informant interviews. *Second*, a field study component using USAID's value chain analysis methodology resulted in detailed value chain studies on rice in Ghana, Liberia, Nigeria, Mali, and Senegal. This component also included a regional market study that entailed further fieldwork in Ghana, Senegal, Côte d'Ivoire, and Benin. *Third*, a three-day online eConsultation with leading experts on rice in West Africa helped validate the results.

The second study is a *Senegal rice consumer experiments study* that used Vickrey second price auctions to elicit consumers' willingness-to-pay (WTP) a premium, relative to conventional Senegal River Valley (SRV) rice as the benchmark, for three rice products of higher quality: imported Thai 100% broken rice, labeled and unlabeled high quality SRV rice. The conventional SRV rice type which is commonly available on the market consists in a mix of varieties and has a mediocre grain quality. Imported Thai 100% broken rice has a grain quality somewhere between the conventional and the enhanced-quality SRV broken rice and contains some impurities. Enhanced-quality SRV broken rice is purified and homogenized through one or two sifting operations and is currently marketed under the *Rival*[®] brand name by the Oxfam-funded platform PINORD (Plateforme d'appui aux Initiatives du Nord)².

² Launched in 2006, PINORD introduced and governs the quality of a new enhanced-quality SRV broken rice brand *Rival*[®] (*Riz de la Vallée*) during production (through a quality contract detailing recommended production practices), processing (sifting, cleaning and packaging), and promotion. PINORD also provides micro-financing (PINORD, 2007, 2009).

Twenty experimental auctions were conducted in two important urban rice markets (Saint-Louis and Dakar) and for each auction ten women were randomly recruited on the market. Participants were given one kilogram of conventional SRV rice and were offered the opportunity to upgrade it by bidding simultaneously on the alternative rice types during two trials, i.e. before and after a sensory test. The experiments thus allowed for a comparison in WTP between imported rice which dominates urban rice markets and high-quality local rice.

Findings

A first important observation is that the US\$10 billion West African rice market is not a single, homogenous commodity market where competition is driven solely by price. Rather there is wide range of rice products on offer (brown, broken, parboiled, round, aromatic, etc.) and consumer preferences vary greatly between and within countries. Although typically one rice product dominates in a given market, there is often a wide range of rice products available. No matter what the importance of rice in the diet or the income category, consumers set minimum quality standards and are unlikely to buy lower quality, cheaper rice that does not meet their standards.

A second observation is that West African rice is currently in most cases less competitive than imported rice, but it has the potential to become competitive. Local rice is less competitive than imported rice, especially in urban markets, along two main sets of key success factors. (1) Local rice in many cases is perceived to be of a lower quality than the comparable imported product which sets the benchmark (Mali is a notable exception). (2) The absence of trade credit and aggregation in value chains for locally produced rice makes it difficult for the existing urban market distribution system to tap into domestic production. As a result, local rice is largely absent from urban markets and thus not an option for consumers, even if they want to buy it. Nevertheless, we found that in the five country studies conducted in the context of this value chain analysis, local rice is or can become competitive with imported rice. Margins appear to be sufficiently high to maintain price competitiveness even after taking into account the costs of necessary quality improvements.

A third observation is that, to date, rice value chains in West Africa have failed to achieve their considerable potential due to systemic constraints. The latter are related to *the business enabling environment* (e.g., fickle rice policies that deter private sector investment, insecure land titles that impede investments by farmers, poor road conditions and corruption that block the linkage between production zones and markets), *vertical linkages* (e.g., the history of government and donor intervention in rice—

including input subsidy programs—that has generated a mistrust of commercial relationships), *horizontal linkages* (e.g., aggregators or brokers that compete to secure paddy from farmers, who too often engage in side selling often encouraged by the aggregator/broker), and *support markets* (e.g., years of government and donor interventions that have crowded out private-sector investment in input supply, processing services, extension provision, and finance). Progress through upgrading is needed on many fronts, such as improvements in rice quality, increased efficiency through the uptake of appropriate technology, decreased post-harvest losses, and consumer acceptance of local rice as a quality product. For any of these upgrades to take hold, however, supportive government policies and sustainable business development service provision are needed, as well as strengthened horizontal and vertical partnerships based on trust, transparency and mutual benefits. The widespread absence of these factors represents key systemic constraints to development.

A fourth observation relates to the critical importance of quality governance. Evidence from the Senegal experimental auction showed that while Senegalese consumers were willing to pay a 17% price premium for imported Thai 100% broken rice relative to conventional SRV rice, they were willing to pay a 32% price premium to obtain unlabeled enhanced-quality SRV broken rice, and a 38% price premium to obtain PINORD's *Rival*® branded enhanced-quality SRV broken rice (Demont *et al.*, 2010). These findings suggest that Senegalese consumers are willing to pay for intrinsic food quality attributes and that SRV rice is able to compete against imported rice if its quality is tailored to consumer preferences. However, the experiments also revealed the existence of an important awareness gap as 18% and 47% of consumers in Saint-Louis and Dakar, respectively, are unaware of the existence of quality SRV rice. Quality upgrading of rice in combination with generic promotion programs that extend the reach of SRV rice might therefore create some opportunities for the development of a certain degree of coordination along the value chain and can have a real impact on urban markets. However, while PINORD's model for the increased commercialization of quality SRV rice is certainly a good preliminary step towards competitiveness, their operational scale is currently too small to significantly impact the market.³

The final observation is that the reaction of donors and West African governments to the current rice crisis has been to launch programs and policies to promote local production. The impacts of these programs are still being realized, though forecasts of the results of some of these actions are mixed. While investment in the rice sector is clearly needed, many of the government rice initiatives focus almost exclusively on production to the exclusion of complementary initiatives in processing and marketing,

³ PINORD marketed 500 tons of *Rival*®, produced by 10 rural micro-enterprises (RMEs), on the Saint-Louis market in 2007, 5,000-6,000 tons by 108 RMEs in 2008, and 7,000-8,000 tons by 150 RMEs in 2009; however, this still represents only 2-3% of total production.

which are critical to match supply to demand. The experimental study findings above suggest that supply and demand strategies need to be synchronized in order to tailor quality of local rice to consumer preferences in urban end-markets.

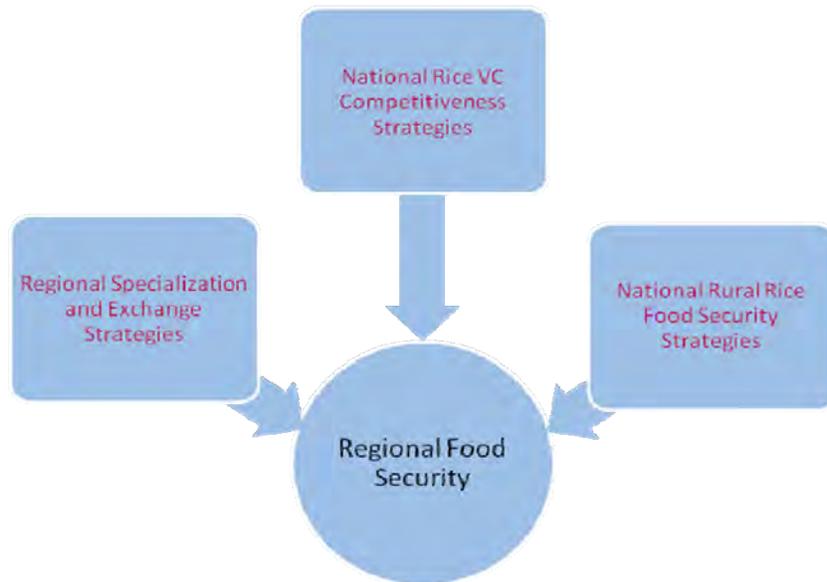
Conclusions and Recommendations

Rice production in West Africa can be competitive with imported rice in a far broader range of markets than is the case today and can starkly reduce import dependency and thus food insecurity. The 2008 rice price crisis can provide the jolt needed to unlock this potential, but only if the response strategy is well-designed, strikes the right balance between public, private, and donor activity, and is implemented with persistent investment of time and other resources. Governance of quality and clear marketing strategies are crucial for increasing the awareness of urban consumers and strengthening emerging value chains of quality rice, such the PINORD initiative in Senegal.

A food-security strategy for rice in West Africa needs to satisfy multiple aspects of food security. It must foster the supply of rice to meet the demands of urban and peri-urban populations that currently consume large quantities of imports (in most West African countries). At the same time, it must address food access by rural populations, many of whom cultivate rice for subsistence. In addition, trade is essential to the efficient distribution of food to deficit areas from surplus areas that have a competitive advantage for growing large volumes of rice. Although recommended national rice value chain development plans will differ between countries depending on their unique characteristics⁴, a food-security strategy for rice in West Africa will have three general, distinct but complementary components that need to be balanced in a resource-constrained environment (figure 3).

⁴ This is well-illustrated in the country-specific value chain studies that are attachments to Campbell *et al.* 2009.

Figure 3: Rice in a Regional Food Security Strategy



First, national value chain competitiveness strategies are required to ensure the supply of rice in the quantity and quality needed to effectively compete with imported rice in West Africa’s urban markets. While varying in detail by country, national competitiveness strategies will largely be based on the creation of commercial networks characterized by concentrated areas of production (mostly irrigated), market-oriented farmers and significant investments in storage, processing and marketing. The establishment of these commercial networks implies a time-consuming process of building trust between value chain stakeholders so that mutually beneficial business models emerge. It also implies a government policy shift to a more market-based approach to food security in which competitive local farms and firms ensure the supply of quality staple foods at the most competitive consumer price.

Second, national rural rice food security strategies focused on access to food are needed to improve productivity for the majority of more widely dispersed subsistence rice producers, mainly operating under rain-fed production systems. At its core, this strategy takes an incremental and partially subsidized approach to the introduction of basic production and post-harvest handling technologies—providing a demonstration effect for replication; as well as non-distortive approaches to developing links between subsistence farmers and a commercial input distribution system. Current disincentives to improved rice production will also need to be addressed, including insecure land tenure, dependency on government or donor assistance, and adverse cultural norms such as mistrust of the private sector, etc. A combination of increased sales of cash crops and capital asset building (savings) will positively affect sustainability and the graduation of farmers from subsistence to market-oriented production. Such rural

food security strategies should focus on a number of a different food crops important for nutrition and calorific intake, rather than on rice (or any other staple food) in isolation.

Third, a regional food security strategy focused on distribution is needed to facilitate rice flows and learning throughout the region. This facilitation will initially increase flows for imported rice that is already in the market and thus create a more competitive environment for local rice. However, regional trade improvements will eventually be needed to exploit competitive advantages within West Africa that facilitate trade from centers of excellence characterized by comparative advantages and the political and commercial will to upgrade, to the major deficit areas in the region. Moreover, shared learning (rather than just information exchange) will ensure that lessons learned in one country are applied elsewhere.

Finally, efforts need to be made by all stakeholders to rationalize the goals of food security and food self-sufficiency with the design of many current government and donor investments. Many post-crisis government interventions have undermined rather than built upon the private sector. Even in countries where liberalization policies have been in place for years, there remains a fundamental lack of trust in markets. At the same time, governments in the region have neither the resources nor the capabilities (as demonstrated by past efforts) to achieve substantial reductions in the need and demand for imported rice. Most donors and researchers would argue that working through the private sector is the most cost-effective strategy for generating the surpluses needed to replace imports. This strategy will have to be demonstrated before many governments in the region are ready to adopt it.

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