A review of the rice sector in 5 countries across West Africa

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Introduction

As part of a programme funded by the European Union, the NGOs Glopolis, SOS FAIM and VECO and their farmer partners conducted several studies of the rice sector in 5 countries across West Africa: Benin, Burkina Faso, Mali, Niger and Senegal. This article aims to present a review that cross-references these studies, carried out at the end of 2014 and 2015. Various perspectives will be considered: public policy; sector organization; the production, processing and marketing of rice; pricing structure; the consumer’s perspective; key issues and future challenges.

Public policy: a strategic sector

A common point immediately stands out when reading the different studies: the 2008 food crisis was a catalyst for public policies dealing with the rice sector. In all the West African countries that were looked at, the sector has indeed been the subject of much attention, particularly with regard to ensuring the food security of growing urban populations, with the issue ultimately being about political stability.

Currently, however, most national policies are contradictory to some extent: partly because incentives exist to develop the domestic sector while maintaining an environment conducive to imports in order to meet the production shortfalls that still exist, almost everywhere.

From the Senegal report

The following excerpt illustrates the situation.

Then the 2008 food crisis appeared, in which rice prices soared on the international market, heavily affecting West Africa. This region is also one of the world's largest rice importers (it satisfies 40% of its needs with rice imported from Asia). Following the crisis, the price of rice across West Africa increased by 50% to 100%. This lead to the return of state interventionism, but this time with stakeholder involvement in a process of dialogue and negotiation. The authorities in the region responded by adopting crisis measures such as the removal of import duties on rice. This served as a wake-up call in the political sphere, for greater structural self-sufficiency, and therefore, for the need to increase support for local rice production.

The situation in Mali illustrates this situation: rice is considered a strategic product and the crisis of 2008 led to the “Rice Initiative”, a 34 billion CFA franc\(^1\) contingency plan of sorts that provided both subsidized equipment loans and the hiring of 300 staff to advise farmers. This policy choice was made because of the importance of the sector, not only from the standpoint of national food security but also economic issues: the sector represents 5% of gross domestic product, with a turnover of 100 billion CFA franc\(^2\).

The rice initiative has not prevented Mali however from continuing to facilitate importation, through subsidies on the value added tax and customs duty.

Other countries have joined Mali in making rice a strategic priority: in Benin and Niger, the state has taken up a robust role: two-state industrial mills, subsidies for fertilizers and selected seeds in Benin; in Niger, the state owns the irrigation schemes and a share in a public-private partnership (RINI\(^3\)), which is at the heart of the sector.

In Burkina Faso and Senegal, less rice is produced than other cereals. The fact remains, however, that it is a political priority: in Burkina Faso, this translates mainly into subsidies for fertilizers and seeds, while in Senegal, significant investments are made principally in irrigated perimeter infrastructure.

\(^1\) Or, €51,832,666
\(^2\) Or, €152,449,017
\(^3\) Rice mill of Niger
How the sector is organized

Farmers are organized in a variety of quite contrasting ways.

Niger’s 37 rice perimeters are well structured. An umbrella cooperative organization, the Federation of Unions of Rice Cooperatives (FUCOPRI), enjoys a privileged relationship with an input purchasing exchange (CAIMA) and a marketing board (OPVN). In the 1990s, management responsibility for the National Office of Irrigation Schemes (ONAHA) was transferred to the farmers’ cooperatives.

In Benin, farmers are also well organized: the Rice Farmers’ Consultation Council of Benin (CCR-B) includes six regional unions made up of 54 municipal unions. By contrast, processors and traders are less well organized; therefore, the CCR-B performs this coordination role as best it can.

In Burkina Faso, there are three different types of organization: farmers’ cooperatives that form unions; isolated grass roots cooperatives; and, department-wide unions that make up the National Union of Burkina Rice Farmers (UNPRB), which has 9,595 members. Moreover, an interprofessional rice farmers’ organisation has existed since 2001. In short, it is a highly organized sector.

Mali is home to a multiplicity of organizations that results in sector atomization: there are 1,303 farmers’ organizations listed in the Office du Niger area; 517 in the Office de Mopti area. Note, however, the emergence of the Rice Farmer’s Platform of Mali (PNPRM), consisting of 300 member farmer’s organizations split into 7 regional representative structures.

In Senegal, in irrigated areas, farmers either work on their own or within Economic Interest Groups (sometimes federated): 94% of farmers are men, while 90% of upland rice is produced by women. In the Senegal River valley, there is also the Union of Young Farmers of Koyli Wimdé (UJAK), which affiliated to the country’s most dynamic farmer movement, called FONGS - Action Paysanne.
Production: still in the hands of small hold farmers.

It is immediately clear that, across the region production is based on family farms, raising the question of their economic viability, a debate that was highlighted by the study “Investor farmers”, carried out in 2012.

Annual paddy production varies greatly from one country to another, as shown in the graph below.

In Mali, average yields are in the order of 2 to 3 tonnes per hectare. Irrigated agriculture dominates, particularly with the Office du Niger, where more than 61,000 family farms produce 674,000 tonnes on 115,000 hectares (a yield close to 6 tonnes per hectare). However, since 2008, upland rice has also expanded (with the NERICA variety), especially in the south, around Sikasso and Koulikouro.

Average yields in countries depend on the proportion of irrigated areas in total domestic production, which is why Niger stands out (with yields of 5 to 7 tonnes per hectare), since irrigated perimeters there account for 85% of total production. Note that this is also the country where the average family holding is by far the smallest, at a third of a hectare.

Nigerien agriculture is mainly rain-fed and grain food crops constitute the bulk of production and consumption. Rice is the third cereal after millet and sorghum, in terms of area cultivated and the quantities produced. The amount of rice produced in Niger is about 2.3% of the annual quantity of cereals produced.

In Senegal too, irrigated rice dominates domestic production, with 70% from the Senegal River area.

Burkina Faso has the lowest proportion of irrigated land at 23%, however, this area still produces 53% of national rice output.


5 Depending on the country, the data indicated in the studies dates from 2013 or 2014. It shows that production has grown substantially in recent seasons in countries like Mali, Senegal or Burkina.

6 NERICA, acronym for New Rice for Africa - a controversial "miracle" variety, which has not lived up to the hype and whose spread only plays into the hands of agribusiness (GRAIN, 2009)
Processing: Industrial or artisanal?

In all five countries, industrial and artisanal infrastructure coexist, but the balance varies. In Mali, industrial rice mills lost market share in the 1990s, as a result of the implementation of structural adjustment programmes. They were replaced by husking and mini-mills, managed either by farmers’ organizations or by private operators. These now process about 80% of national production. In general, these facilities are relatively inefficient, with processing resulting in less than 60% of the rice being recovered and a high rate of broken rice.

In Senegal, village husking units also predominate, processing some 75% of production, but with better yields than in Mali (60-65%). Parboiling, which is generally carried out by women’s groups, is uncommon, except in the south of the country (Kolda, Casamance).

In Benin, the revival of the industry after the 2008 crisis led the government to set up two industrial hulling units, with a capacity of 150 tonnes per day. These units work at 10% to 20% capacity, at the moment, but with good yields (60-65%).

In Niger, RINI, the state-cooperative partnership is also a key player in the country’s rice processing sector. Also, of note, are the increasingly organized women parboilers.

And, in Burkina Faso parboiling actually predominates: 16,000 women are employed in this activity.

The parboiling process

During the parboiling process, paddy rice is soaked in pressurized warm water, so that the vitamins and minerals contained in the bran dissolve. Then, the dissolved nutrients are compressed into the grain under high hydraulic pressure. At this point, rice starch at the surface of the grain is fused by means of high pressure steam to form a sort of shell which retains the nutrients. The rice is then dried.
Marketing: private sector and states

Of the five countries involved in the studies, Mali has the best coverage by far of its needs through domestic production: an average of 93% in recent years. The state plays a balancing role, mindful both to protect family farms and ensure supply meets the demand of urban consumers. About 100,000 tonnes of rice are imported annually.

Box (From the Mali report - page 27)

Two features of how rice is marketed in Mali stand out:

- Cereal exchanges that have been built up over the last 20 years, started by the NGO, Afrique Verte, form a key outlet for farmers.
- The largely informal character of marketing operations: there are very few contracts between the different stakeholders: farmers and their organizations, harvesters, traders and transporters.

In three countries (Benin, Burkina Faso and Niger), state institutions play an important role in marketing.

In Benin, marketing is very definitely the least organized link in the domestic sector, which contrasts with arrangements for imported rice. Nevertheless, there has been progress, particularly through an increase in grouped sales following pressure created by the food crisis of 2008. The main body marketing local rice is the National Company for Agricultural Promotion (SONAPRA), which buys paddy from individual farmers for processing at

A correlation between the production of dry cereals and rice imports.

In any case, there is a strong correlation between the production of dry cereals and rice imports. The state regulates imports depending on the production volumes of coarse grains, which in turn depends on weather conditions. (...) This results in a reduction of the sums generated through import taxes.
The state plays a balancing role, mindful both to protect family farms and ensure supply meets the demand of urban consumers.

The two main state mills, at Glazoué and Malanville. According to available information, Benin needs to import over 100,000 tonnes of rice to cover around 50% of its demand (Source: ‘Stratégie Nationale pour le Développement de la Riziculture’, 2011).

In Burkina Faso, the National Society for Security Stock Management (SONAGESS) performs a market regulatory role, despite its low trading volume (7,500 tonnes on average in recent years). It buys mainly for school canteens, barracks, prisons, and the like. Large volumes of imports (about 400,000 tonnes) are still required to cover total national demand, since the national coverage rate sits at around 58% (Source: Direction Générale de la Promotion de l’Economie Rurale; 2012)

In Niger, the most important formal system consists of the “triangle” of the Office of Food Stuff of Niger (OPVN) Rice mill of Niger (RINI) and the Federation of Unions of Rice Producers’ Cooperatives (FUCOPRI). Niger has had to import about 300,000 tonnes annually in recent years, to cover its needs. Domestic production covers only about 15% of demand.

Finally, in Senegal, rice marketing is mostly in the hands of a rather fragmented private sector. Only irrigated production comes to market; rainfed rice is almost entirely for own consumption. The production of parboiled rice, so far, limited to the south of the country, has slowly started being produced in the Senegal River valley. The country covers only about 30% of its consumption needs and imports between 650,000 and 850,000 tonnes per year, which weighs heavily in its trade balance (over €205 million per year). The data in the chart below cover the years 2013 or 2014, depending on the date of completion of the study concerned.

The state plays a balancing role, mindful both to protect family farms and ensure supply meets the demand of urban consumers.

Coverage (%)

<table>
<thead>
<tr>
<th></th>
<th>Mali</th>
<th>Senegal</th>
<th>Burkina</th>
<th>Benin</th>
<th>Niger</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coverage (%)</td>
<td>93</td>
<td>32</td>
<td>38</td>
<td>50</td>
<td>15</td>
</tr>
</tbody>
</table>

The state plays a balancing role, mindful both to protect family farms and ensure supply meets the demand of urban consumers.
Consumption: rice for the cities

In West Africa, rice has impacted urban eating habits, in particular: as it is quicker and easier to cook than other cereals. Increased rice consumption correlates greatly with urbanization. Thus in Senegal, rice represents 54% of the cereals consumed in urban areas. In a country like Benin, the market is highly segmented: domestic rice is consumed mainly in the countryside and imported rice in cities.

Niger is equally interesting, with average consumption of 20 kg per year in the city and 2.4 kilos per year in rural areas.
Pricing structure: who benefits from rice?

In general, local rice seems to be competitive with imported rice: this is certainly the case in Benin, Niger and Senegal. In terms of taste, it is often preferred, but it is rather in terms of packaging, presentation, and its marketing that it is let down.

Illustrations:

An operating account for a hectare of paddy rice in the Office du Niger area (Source: Nyeta Councils; 2014).

<table>
<thead>
<tr>
<th>Item</th>
<th>CFA franc/ha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Land preparation</td>
<td>50,000</td>
</tr>
<tr>
<td>Seed</td>
<td>26,500</td>
</tr>
<tr>
<td>Transplanting</td>
<td>50,000</td>
</tr>
<tr>
<td>Fertilisation</td>
<td>114,000</td>
</tr>
<tr>
<td>Harvest</td>
<td>50,000</td>
</tr>
<tr>
<td>Threshing</td>
<td>113,950</td>
</tr>
<tr>
<td>Weeding</td>
<td>20,000</td>
</tr>
<tr>
<td>Seasonal labour</td>
<td>75,000</td>
</tr>
<tr>
<td>Water fee</td>
<td>67,000</td>
</tr>
<tr>
<td>Total</td>
<td>566,450</td>
</tr>
<tr>
<td>1kg paddy sale price</td>
<td>108</td>
</tr>
<tr>
<td>Value of production</td>
<td>787,500</td>
</tr>
<tr>
<td>Gross margin</td>
<td>221,050</td>
</tr>
</tbody>
</table>

Based on a yield of 5,250 kg of paddy per hectare, the cost price is 108 CFA franc per kilogramme and the average selling price is 150 CFA franc. One hectare therefore produces a gross margin of 220,500 CFA franc, or 39% over the production cost.

A surface irrigated area in Burkina Faso

Average production is less than in the Office du Niger: 3.46 tonnes. The sale price is almost the same at 147 CFA franc per kilogramme. One hectare therefore generates a turnover of 508,330 CFA franc for a cost of around 184,375 CFA franc, which is significantly lower than what it costs in the Office du Niger. The gross margin per hectare is therefore 323,955 CFA franc (Source: DGPER, 2011).

<table>
<thead>
<tr>
<th>Production cost</th>
<th>Smallholder’s Farmer’s organization profit</th>
<th>Processing</th>
<th>Traders</th>
</tr>
</thead>
<tbody>
<tr>
<td>129 CFA franc</td>
<td>21 CFA franc</td>
<td>113 CFA franc</td>
<td>45 CFA franc</td>
</tr>
</tbody>
</table>

Consumer price – 305 CFA franc
### The Senegal River Valley

Margins at different levels of the value chain (Source: Studies by VECO, 2014).

<table>
<thead>
<tr>
<th></th>
<th>CFA franc / kg paddy</th>
<th>CFA franc / kg white rice</th>
<th>% Of the retail price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average production cost</td>
<td>101</td>
<td>183.82</td>
<td>54%</td>
</tr>
<tr>
<td>Farmer's net margin</td>
<td>29</td>
<td>52.78</td>
<td>16%</td>
</tr>
<tr>
<td>Average milling cost</td>
<td>12</td>
<td>21.84</td>
<td>6%</td>
</tr>
<tr>
<td>Average cost of distribution</td>
<td>17</td>
<td>30.94</td>
<td>9%</td>
</tr>
<tr>
<td>Trader's net margin</td>
<td>28</td>
<td>50.96</td>
<td>15%</td>
</tr>
<tr>
<td>Retail price</td>
<td></td>
<td>340.34</td>
<td></td>
</tr>
</tbody>
</table>

The cost of production amounts to 54% of the retail price; the farmer's net margin is 16%, which is relatively low. There would appear to be room for improving production efficiency. Traders take almost as much margin as farmers do, while processing amounts to only 6% due to the high level of competition between husking facilities.

### The particular situation in Niger

Extract from the study “Note d’analyse sur la filière riz au Niger”

The Nigerien market is protected by a 16% import duty, and in particular its landlocked location, which increases the cost of importing rice. Thus, the price of local rice and paddy, which is determined by the price of imported rice, is much higher than in most other West African countries. Because of the high prices and the yields obtained, the profitability on rice is high (net margin of 588,000 CFA franc per hectare, with a production cost of 109 CFA franc per kilo on average). However, because of small plot sizes, income per farm remains low (150,000 CFA franc per cycle). A comparison with Senegal, however, shows that the cost of production (750,000 CFA franc per hectare) is about 33% higher in Niger, mainly due to a better paid workforce and the need to resort to informal seasonal credit, due to a lack of institutional credit facilities.

Overall, the price structure raises the question as to what is fair and equitable remuneration for farmers, while ensuring that the final product is accessibly priced for consumers, who we have seen are mostly urban. A similar problem is often confronted in so-called developed countries.
Conclusion: multiple issues and challenges

More often than not the issues and challenges faced in the various countries are the same and they are multidimensional.

Since the sector is considered strategic both regionally and domestically, the public authorities have a fundamental role in promoting local production with a view to guaranteeing food security for both urban and rural areas. As such, a more equitable distribution of margins across the sector, based on a detailed analysis of farm economics, merits follow up.

Attempts to strengthen local rice must be accompanied by a series of measures to boost production quantity and quality. These include:

- Securing access to land, especially in irrigated areas;
- Easier access to equipment and inputs (paying particular attention to seeds), credit…;
- Strengthening advisory services to small holder farms;
- Developing the marketing of local rice;
- Better linkage between research and the needs of farmers.

Organizational governance and strengthening stakeholders’ capacities seem equally essential. Financial institutions need to better understand the realities farmers face. Farmers’ organizations need to professionalise, and become more serious in their business affairs.

These various issues and challenges will certainly be on the agenda of this strategic sector for West Africa, in the coming years.
SOS Faim

This issue of Farming Dynamics was written by Marc Mees, Head of Knowledge Management at SOS Faim, based on the five studies below, which were carried out with European Union funding:

- *Etude sur les chaînes de valeur riz au Mali*; Yacouba M. Coulibaly (lead consultant) and Abdoulaye Oualoguem (assistant); October 2014.
- *Synthèse des études sur l’état des lieux de la chaîne de valeur riz au Sénégal*; Amadou Abdoulaye Fall, agro-economist; January 2015.

SOS Faim Belgium and SOS Faim Luxembourg are two development NGOs actively tackling hunger and poverty in Africa and Latin America. In favouring an approach based on partnership with local stakeholders, the two SOS Faim entities support family farming by providing farmers in the south with technical, organizational and financial support, and by raising the awareness of and mobilising people from the North around issues relating to poverty and food security.

Apart from Farming Dynamics, SOS Faim publishes Zoom Microfinance, which provides analysis on the aims, models and implementation conditions of aid to microfinance institutions. This publication is available for download in French, English and Spanish on SOS Faim’s website: www.sosfaim.org.

The most recent issues of Farming Dynamics have dealt with the following topics:

- n° 41 Public-private partnerships - rural territorial development challenges in Latin America
- n° 39-40 Local storage in West Africa
- n° 38 The cooperative challenge: coffee and cacao in Peru