

Marketing and quality assurance, essential keys to rice production increases in Ghana

Several countries in Western Africa are dependent on imports of cereals in order to ensure their food security. Agricultural development projects have traditionally supported increases in productivity of staple crops in order to decrease this dependence on imports. This paper studies the case of a project developing rice cropping in lowland areas of Ghana. The project quickly encountered marketing difficulties which compromised its genuine success in improving rice yields. This case shows how it quickly became essential to strengthen the capacities of farmers, processors and traders so that the whole value chain could improve the quality of local rice and sell it to demanding urban consumers who were used to eating imported rice. Strong and coherent public interventions appear necessary in order to create and consolidate these local market outlets and allow the value chain to develop.

Several Western African countries are dependent on imports of cereals and this dependence is increasing with the rapid urbanization of these countries.¹ Because of volatile global markets, this dependence has become a real issue of national food security for these countries.² Growing crops like cassava which can substitute for imports of cereals provides a real opportunity for local smallholder farmers to increase their incomes while also contributing to improving their access to sufficient and diversified sources of food.³ Several projects and public policy initiatives recognize this situation and strive to improve their country's production of staples in a sustainable way,⁴ in particular since the 2008 food crisis. The objective of a fair number of these initiatives is to increase national production so as to decrease overly strong food dependence while strengthening the food security of rural and urban populations in Africa.⁵

This paper studies the case of a project developing rice production in lowland areas⁶ of Ghana; it shows how the development of crop productivity is not a sufficient condition to attaining the objectives of food security. It is also necessary to strengthen the concomitant development of a marketing chain and a quality assurance mecha-

nism in order to respond to the new demands of urban consumers. The first part of this paper reports on past projects that have demonstrated the importance of building marketing links between smallholder farmers and markets. The second part describes the evolution of successive projects developing lowland rice production in Ghana. Confronted with marketing problems that were undermining their success, these projects progressively improved the quality of the produce and its marketing conditions.

1 - Are there links between food security, marketing and quality assurance?

Having been relatively left behind during several decades, agriculture has been put back on the menu of public decision makers at the end of the 2000s, in a context of economic crisis, the return of food security on the global agenda, and of revisions in certain geostrategic models. The World Bank's 2008 World Development Report⁷ has contributed to this renewed interest in agriculture. This report in particular called for renewed global governance for agriculture, and for the private sector and civil society to play a greater role in agricultural development. The World

Bank suggested to put agro-industries at the service of agricultural development by

1. Shapouri S., Rosen S., 2009, *Developing countries face urbanization growth, food-security worries, and food-safety challenges*, Food security assessment, 2008-09, GFA-20, Washington DC, Economic Research Service, USDA.

<http://www.ers.usda.gov/publications/gfa-food-security-assessment-situation-and-outlook/gfa20.aspx>

2. Voituriez T., 2009. "Parallel increases in energy and agricultural prices between 2006 and 2008: are speculators and biofuels guilty?", *OCL*, no.16, p.25-36 (in French).

3. Madamombe I., 2006, "Is cassava Africa's new staple food?", *Afrique Renouveau*, no. 20, p. 13. <http://www.un.org/africarenewal/magazine/july-2006/cassava-africa-s-new-staple-food>

4. Kidane W., Maetz M., Dardel P., 2006, *Food security and agricultural development in sub-Saharan Africa. Building a case for more public support*, Rome, FAO. http://www.fao.org/docs/up/easypol/462/africa_food-sec_agric-dev-en.pdf

5. Janin P., 2010, "The battle against food insecurity in the Sahel: the same questions remain while approaches evolve", *Cahiers Agricultures*, no.19, p.177-184 (in French).

6. Lowland areas are "small valleys and depressed axes, which in Africa [...] combine favourable water and soil conditions for rice cropping". Raunet, M., 1985, "Lowland areas and rice production in Africa. A structural and comparative approach", *Agronomie tropicale*, vol. 40, no. 3, pp.181-201 (in French).

7. World Bank, 2008, *World Development Report 2008*, Washington DC, World Bank. <http://web.worldbank.org/WBSITE/EXTERNAL/EXT-DEC/EXTRESEARCH/EXTWDRS/0,,contentMDK:23092617~pagePK:478093~piPK:477627~theSitePK:477624,00.html>

using agro-industries and value chains as a lever for agricultural growth. Large international organizations like the regional development banks and the technical agencies of the United Nations have followed suit and encouraged their member states to envisage agricultural development as pulled by the growth of agro-industries.⁸

Following this strategic change of course, African States, the community of donors and the international technical organizations with a mandate on the agrifood sector have approved strategic programmes in 2010 to develop agro-industries and agrifood value chains in order to improve the food security of the African continent.⁹ These initiatives are only just starting to bear fruit with the emergence of a local agro-industrial sector responding to the local demand for African products.¹⁰

Furthermore, some agricultural development projects, either supported by government agencies or launched by NGOs, have often found themselves in front of a new kind of obstacle. Once the production of staple crops by smallholder farmers had been improved, support to the marketing of the crop or capacity building in value addition on the produce was essential in order to get an income from crops that were being produced in quantities surpassing the self-consumption needs of the beneficiary communities.¹¹ The strategies of certain crop productivity development projects were also challenged for their absence of a proposed marketing outlet in order to sell the increases forecast for the crops harvested.¹² Thus, a growing number of projects with an aim to ensuring the food security of rural populations through increases in staple crop production have also been strengthening the capacities of producers to respond to the new demands of markets, and in particular, to supply a product that actually corresponds to the quality criteria of buyers.

In Senegal for example, the international research centre AfricaRice has set up a national multi-stakeholder innovation platform in order to think about the improvement of the quality of rice grown in the valley of the Senegal River, so that it may correspond better to the demands of urban consumers.¹³ The platform has chosen to work on the storage of rice by smallholder producers in their cropping location, on packaging and on brand building in order to improve the competitiveness of local rice *vis-à-vis* imported rice. In Peru, a Government project supported by the Food and Agriculture Organization of the United Nations (FAO) has decided to strengthen

food security of local populations by setting up organic produce markets managed by associations uniting producers and consumers.¹⁴ The production and local marketing of the organic produce has increased the incomes of local producers; this has allowed them to buy inputs to improve their cropping systems and to purchase supplementary food. The organization of a value chain by producers can also be identified in the example of Tinopai on the Pacific island of Tonga.¹⁵ With the technical assistance of FAO, Tinopai has started the production and processing of sweet potatoes after having undertaken a marketing study which had shown that the tourist hotels on the island had to import frozen chips from New Zealand and that these hotels were looking for local substitution products. Finally, quality assurance schemes in order to set up a Geographical Indication are particularly concerned by the setup of producers' organizations and capacity building on elaborating and monitoring the terms of reference for production; the marketing and promotion of these specific quality products to buyers also has to be managed jointly by the value chain stakeholders, as demonstrated by a project developing Kampong Speu palm sugar in Cambodia.¹⁶

2 - Case study: the projects supporting lowland rice production in Ghana

The total population of Ghana was estimated at 21.3 million people in 2005, 63% of which were living in rural areas. The increase in population (+2.5% per annum), urbanization (+3.2% in 2005) and increases in income per capita have led to structural changes in the behaviour of consumers. So as to respond to this explosion in rice consumption through improved production of local rice, the French development agency AFD had set up a first rice production development project in Northern Ghana (1999-2002). This project was meant to intensify the production of farmers thanks to irrigation infrastructure in the lowland areas and access to credit. A second project funded by the French Ministry of Foreign Affairs called "food security and rice producers' organizations" followed from 2002 to 2008 so as to strengthen the results of the first project by supporting the producers' organizations that had already been created. An apex producers' organization at national level was created so as to coordinate the lower-level groups and facilitate access to credit, crop inputs and to market-

ing outlets. Having identified the marketing problems being encountered by the project beneficiaries, one component of the project was meant to improve the governance of the value chain at the national level through the creation of a rice commodity association assembling representatives of all the different stakeholders of the chain: the Ghana Rice Interprofessional Body (GRIB). The following paragraphs relate the achievements and marketing problems encountered by GRIB and the projects, problems which prevented the latter from reaching their goal of contributing to the country's food security.

Rice production development in Ghana: a solution to the double issue of food security at local and national levels

Just like in Nigeria or Senegal, rice consumption in Ghana has increased sharply from 11 kg/cap/year in 1999 to

8. Da Silva C.A., Baker D., Shepherd A.W., Jenane C., Miranda-da-Cruz S. (eds), 2009, *Agro-industries for development*, Rome, FAO and Vienna, UNIDO. <http://www.fao.org/docrep/013/i0157e/i0157e00.pdf>

9. African Union, African Development Bank, FAO, IFAD, Economic Commission for Africa, UNIDO, 2010, 3ADI. *African agribusiness and agro-industries development initiative. A programme framework*, Rome, FAO and Vienna, UNIDO.

http://www.hlod-3a.org/data_all/PDF_en/a3ADI_progFram1.pdf

10. <http://veilleagri.hautetfort.com/archive/2012/06/20/essor-de-l-industrie-agroalimentaire-africaine.html>

11. FAO, NAMC, 2009, *FAO - NAMC expert consultation on "the role of NGOs in linking farmers to markets"*, Somerset West, South Africa. 5-8 October 2009, Rome, FAO and Pretoria, National Agricultural Marketing Council.

http://www.fao.org/fileadmin/templates/ags/docs/marketing/Workshops/South_Africa_2009/RSA_Workshop.pdf

12. Chambon B., Eschbach J.M., 2009, "Marketing of natural rubber from village plantations: an essential factor in the development of rubber production in Cameroon", *Cahiers Agricultures*, no. 18, pp. 364-368 (in French). Pasquet J., 2009, "Choosing commercial rice production in North-eastern Afghanistan", *Cahiers Agricultures*, no. 18, pp. 441-446 (in French).

13. Ndong M., 2010, "Quality and price for Senegal Valley rice: how to lift constraints to compete with imported rice", *Le Soleil*, Thursday 11 March 2010 (in French). http://www.seneweb.com/news/Economie/qualit-et-prix-du-riz-de-la-vall-e-lever-les-contraintes-pour-rivaliser-avec-le-riz-import_n_29867.html

14. Manrique C.A., 2006, *Promoting local ecological markets and its benefits to the country. Memorandum of understanding FAO-RAE February - December 2005*, Lima, Peru, Peruvian Network for an Ecological Agriculture (in Spanish).

15. Afeaki P., 2005, "Kumala (sweet potato)", in FAO, *Helping small farmers think about better growing and marketing*, FAO Pacific Farm Management and Marketing Series no. 5, Apia (Samoa), FAO.

16. Sereyvath P., "Kampong Speu palm sugar, Cambodia", in Lecoent A., Vandecandelaere E., Cadilhon J.-J. (eds), *Quality linked to geographical origin and geographical indications: lessons learned from six case studies in Asia*, Bangkok, FAO. <http://www.fao.org/fileadmin/templates/olq/documents/documents/Asiacasest.pdf>

28 kg/cap/year in 2007. It was estimated at 38 kg/cap/year in the cities and up to 50 kg/cap/year in the capital Accra.¹⁷ While national rice production had stagnated, imports increased dramatically, which led the country's rice self-sufficiency to decrease from 40% to 25% in just a few years.¹⁸ In 2007 rice imports were valued at 158.3 million dollars or 11.8% of all agri-food imports and 33% of the country's agri-food trade deficit (FAOSTAT). Given an international rice market that is narrow and volatile, and soaring food prices in the past years, Ghana's dependence on rice imports has become a major food security issue. Yet, local rice production can be price- and quality-competitive with imports and could contribute to reducing the country's dependence on imports. Furthermore, rice cropping enables poor rural households to increase their incomes and thus improve their food security. In the Northern regions of Ghana, after the demise of the cotton industry, rice has become one of the only profitable cash crops; its cultivation is possible without access to irrigation systems. Rice can be planted in the lowland areas, thus adding value to these areas that have little production potential for other crops. In rural areas, processing and local marketing of rice are mainly implemented on a small scale by women whose income from these activities is mainly dedicated to the diversification of household nutrition, improving health and children's education. Thus, these processing and marketing activities can contribute to strengthening household food security. Moreover, the regular income from rice allows households to have some cash in order to buy food when their own staple stocks have been eaten and while waiting for the next crop to be harvested.

Selling to city markets: a necessity, a challenge, many opportunities

Rural areas represent less than a quarter of the total consumption of rice in the country, with around 9 kg/cap/year. Rice is therefore considered a cash crop in Ghana. On average, 50% of the paddy is sold; 37% is used to pay various loans back in kind and only 13% is kept by rural households for own-consumption or gifts. As production increases, farmers are increasingly confronted with the difficulties of marketing their produce out of the rural areas.

Furthermore, there is only a limited market outlet for local rice, especially in the Northern region where the projects were working. The market is very fragmented: different places of origin and qualities of

rice lead to several different rice products. Local rice can be differentiated easily from imported rice and is usually discounted on the markets by 20% compared with imported rice. Right after the harvest 40 to 80% of the local rice production is sold and local rice prices decrease further while the price of imported rice remains stable. More than half of the rice producing areas run a surplus, which sometimes represents up to 70% of all the rice production in the Northern region. There is then a fierce competition between rice-producing regions within this small market niche for local rice.

Therefore, it is not sufficient to increase local production in order for it to substitute for imported rice and improve the country's food security, above all in a situation where local prices are close to those of imports. In a context of urbanization, increasing levels of income, and an aggressive marketing presence of importing agents, demand for rice is indeed increasing, but it is becoming more and more demanding on quality. Increasing local rice production can thus rapidly lead to a state of glut on the markets in the production areas.

Conversely, marketing studies by the project have shown that real opportunities existed for local rice. More than 90% of consumers surveyed were ready to support local production by buying local rice if quality and price were comparable to imported products. Some consumers surveyed thought that local rice could have superior nutritional and food safety qualities. Because the price of imported rice can be up to three times that of local rice, depending on the level of quality, one can estimate that the local rice industry could see its value addition double if it delivered the goods demanded by consumers.

Marketing problems impact on the food security of producers

The project's rice growers discovered these marketing problems very quickly. Firstly, 90% of producers were selling their paddy at the harvest time when the prices were lowest, which had a negative impact on their income. By selling individually, they were not well aware of the market conditions and had trouble negotiating interesting prices. Sales were done by the bag, with each seller bringing bags of various sizes. Furthermore, producers were directly affected by the price of imported rice which had become a ceiling price for local rice. Between 2004 and 2006, the price of local rice increased in parallel with local production costs. This increase was due no doubt to the price increases for imported rice

which occurred at the same time. Yet, the international rice market being extremely volatile and independent from Ghanaian production costs, a fall in the international price could still be envisaged and could have a big impact on the local market.

Going beyond market prices, 70% of 60 producers interviewed in 2005 in the project area complained about marketing conditions. Sales were done on an individual basis and were difficult. More than half of the rice producers had to search for a trader outside of the village, which led to further costs. Moreover, 22% of producers had to sell on credit. Thus, not only did producers bear the risk of non-sales of the traders, but they also had to wait 20 days on average before they got paid.

These marketing conditions were having a negative impact on the reimbursement of production campaign loans from the bank. Indeed, scattered individual sales made it difficult for the farmers' group to monitor loans and to implement a grouped loan reimbursement; this led to an increase in the risk of late repayment or even loan default. Lack of credit thus strongly limited farmers' access to production inputs and was putting household food security at risk.

Marketing and quality improvement require concerted action from the entire value chain

The problems of marketing agricultural products are also encountered by other stakeholders than the rice producers. Once supply had been consolidated, it faced the problem of a scattered structure and lack of funds of the other actors in the value chain, especially in the Northern part of Ghana. Indeed, rice trading is mainly implemented by a large number of individuals undertaking this enterprise at a very small scale (a few bags of rice up to one hundred at most every week). Furthermore, without access to credit, 83% of the women-processors and 32% of the women-traders interviewed were buying paddy on credit from producers. What is more, rice is usually parboiled in the North. However, this parboiling is implemented by small-scale women-processors-traders. Some consolidation of this activity would suppose grouping rice supply from producers but also

17. FAOSTAT <http://faostat.fao.org/site/291/default.aspx> Post-Agric Associates, 2007, *First status report study on rice marketing*, Accra, FSRPOP/MOFA Directorate of Crops Services.

18. Lançon F., Coronel C., 2007, *Study and training on the Ghanaian rice commodity chain. Final report*, Accra, FSRPOP/MOFA Directorate of Crop Services.

from processors; this makes it more difficult for large processing operations to emerge. In 2006 the apex farmers' organization decided to buy 300 bags from producers. Because it could not find buyers that could actually buy and pay for all this rice in one go, the organization was obliged to sell its rice on credit to small groups of local women-processors, releasing only around 20 bags of rice per week. After this setback, the apex organization collaborated with groups of women-processors to allow them to gain access to credit in advance of the harvest in order to have enough cash to buy rice in large quantities. So as to enable producers to sell in better conditions, it is thus also important to enable traders to buy and sell in better conditions, by helping them access credit and by grouping the scattered individual stakeholders at each stage along the value chain.

What is more, in order to distribute rice towards the major consumption areas in the cities, local rice must reach quality standards that are close to those of imported rice. So as to reach those standards, improvements in rice processing are needed, but also improvements in production and harvesting operations. These new techniques are more costly for producers and require the certainty of a higher price, as well as tailored extension services delivered during production and harvesting stages. Only 65% of rice producers interviewed mentioned that better quality paddy led to easier sales, but there was still no guarantee of higher prices. Quality improvement initiatives set up by the entire value chain could have led to a better sharing of the added-value created.

Likewise, promotion activities are also needed to push products onto new markets. A pilot action had associated rice producers and women-processors in quality assurance activities. The rice produced was of better quality and had easily been sold to buyers in Accra, the capital of Ghana, during a promotional event there although the city is not a big consumer of local rice. Nevertheless, another problem arose immediately: having enough local rice all year round to be able to keep selling reliably to city buyers. This meant being able to buy enough rice from producers and then being able to keep it in storage.

These different experiences show the great value and the difficulty in setting up quality assurance schemes on a scale of an entire value chain. In order to facilitate these costly activities that are nevertheless beneficial for all in the supply chain, the project, in consultation with public autho-

rities, started to support the emergence of a rice commodity association that gathered all the stakeholders in the value chain and increasing funds were allocated to the development of the entire value chain.

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These lessons learned from the experience of developing lowland rice production in Ghana lead to identifying key issues that have a strong impact on food security. Yet, these issues are not directly linked to crop production but much more to post-harvest activities.

Demand from urban consumers in terms of rice quality continues to evolve and producers of local rice must be able to respond to this evolution. Furthermore, in order to benefit from the best market conditions, the value chain must be capable of processing and storing rice so that it adheres to the quality criteria of consumers. Yet, parboiling and storing require investments from stakeholders in the value chain. Likewise, this case study highlights that well targeted promotional campaigns focusing on the product and its quality attributes can open up new markets.

Unfortunately, rice marketing conditions do not encourage economies of scale. The activities of grouping farmers, strengthening their apex organizations and reinforcing the Ghana rice commodity association have not yet reached their objectives. Nevertheless, one understands better the positive relationship existing between satisfactory marketing conditions and lower risks at the production level and for food insecurity. Finally, this case study shows that a structured value chain can lead to an increase in revenue for all the chain actors. Thus, while decreasing the dependence of the country to food imports, value chain development can leverage on income growth beyond the sole stage of smallholder farmer communities. The final result is better food security and the development of all the actors in the value chain.

This case study demonstrates that an insufficient integration of production and marketing activities for a product that has recognized quality attributes can be a major obstacle to achieving a higher state of food security. Future agricultural development projects must therefore imperatively incorporate marketing activities and quality assurance mechanisms very early on in their intervention pathways. The case of the rice value chain in Ghana shows the error of assuming that marketing of local rice

would be naturally pulled by the willingness of consumers to substitute imported rice by local rice. Urbanization, economic growth and globalization are likely to exacerbate the quality requirements of consumers and provide further proof that marketing and quality assurance activities be considered as key pillars to the success of agricultural development projects.

This presupposes that import-substitution projects are willing to make important and early efforts in competing with imported rice that is both price-competitive and the subject of widespread promotional marketing. Strong and coherent governmental action thus appears to be necessary to create and consolidate the local outlets that will allow a local value chain to develop, while also preserving the interests of its different actors, in particular local producers. One has seen in the past few years a growing number of food security programmes (favouring schools, poor households, etc.) which also promote local supply chains and support local producers. This is one of the foundations of the successful Brazilian programme called "Zero hunger", which the new Director General of FAO is contributing to promote in Africa.

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Composition : SSP Beauvais
Dépôt légal : À parution © 2013