Producing more with less

By promoting the efficient use of resources, FAO is committed to intensifying rice production in West Africa in order to boost food security for its populations and increase income of smallholders

APRAO
Amélioration de la Production de Riz en Afrique de l'Ouest

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APRAO project success stories

Improvement of rice production in West Africa in response to soaring food prices

Government recommits to working alongside seed producers

Rosso, Mauritania

Since the APRAO project was launched in Mauritania in February 2011, coordinated action to bolster the rice sector has been undertaken by the project's national coordination team, which has been paying particular attention to seeds aspects. To this end, the team identified key constraints and targeted actions to overcome them.
By engaging in dialogue with the Government, the APRAO project has raised awareness among decision-makers at the Ministry of Rural Development concerning the importance of supporting seed production. In fact, despite the large subsidies and agricultural credit regularly granted to farmers at advantageous rates, no aid had previously been put in place specifically for seed producers.

Consequently, in 2011, the Government allocated the sum of 200 million ouguiyas (around US$600,000) in the form of subsidies on the purchase price of the seeds produced by the seed establishments, which had, in fact, been facing recurrent problems of product flow and the difficulty of obtaining returns on their activity. The subsidies thus agreed by the Government made it possible to reduce the price of seeds to an affordable level for the rice producers (160 – 180 ouguiyas per kilogramme, equivalent to US$0.56 – 0.60), while ensuring that the production of rice seeds would become a profitable activity.

Following the increased flow generated by this measure, and after consultation between those involved in the seed industry, including the Association for Seeds and Seedlings, the Ministry of Rural Development decided to grant a further subsidy of 100 million ouguiyas (US$335,000) in 2012, and 56 million ouguiyas (US$188,000) for 2013, thus confirming the Government's commitment to the sustainable development of the rice sector in Mauritania.

«In Mauritania, as in other African countries, the public sector is gradually relinquishing its hold on seed production to the benefit of the private sector, which has taken over responsibility since 1996; APRAO's intervention has made it possible to highlight the value of quality seeds as an essential factor for sustainable development, and to help the public sector return to its rightful role»

Yahya El Benani, head of the Seed and Seedling Quality Control Centre

Improving rice seeds for higher yields

Niamey, Niger

In Niger, the seed sub-sector is affected by numerous institutional, technical and socio-economic constraints. Infrastructures are often inadequate and the informal seed sector, whilst essential, does not allow for the introduction of improved varieties. Moreover, the successful varieties already in use are not properly preserved and their seeds, in general and with very few exceptions, are lacking in quality. This means that a scheme to ensure the availability of high quality foundation seeds is essential for the success of the seed system.

The APRAO project has provided technical support to the Nigerien National Institute for Agricultural Research (INRAN), responsible for maintaining the stock plant materials, by supplying, in 2011, 140 kg of two highly productive improved varieties of category G3 breeder seeds that are resistant to biotic stress and which produce, respectively, six and seven t/ha of quality grain with a high market value.

During the 2012 season, the foundation seeds thus regenerated from that point on were multiplied to produce 132 tonnes of certified seeds; these high quality seeds will make it possible to sow 2,350 hectares of rice with second generation seeds in 2013.

The sowing of these 2,350 hectares is the equivalent of a gain of 4,400 tonnes of rice with a value of US$2.6 million. Moreover, besides the gain in terms of production, the rice produced tastes better and is more nutritious. According to INRAN rice breeder, Sido Amir, this initiative has made it possible to demonstrate precisely how the use of quality seed has benefited production. INRAN now has access to pure seed of good varieties, thus ensuring that the quality of the country's rice seeds can be maintained.

«In Niger, the baseline study highlighted the weakness of the seed sector and the project took measures to strengthen it in order to boost our country's rice production.»

Sido Amir, technical assistant of the APRAO project in Niger and INRAN rice breeder

Rice farming spreads in rainfed areas

Djilor Djidiack, Sénégal

Senegal is increasingly reliant on imports to meet its population's growing demand for rice; over the last ten years, imported rice has constituted between 50% and 80% of the country's needs, corresponding to amounts ranging from 700,000 to one million tonnes and annual hard currency losses of up to US$645 million.

In response to these challenges, the Government has drafted its National Programme for Rice Self-Sufficiency (PNAR), a road map for achieving rice self-sufficiency between now and 2018. The PNAR focuses on the development of rainfed rice production, which, in itself, has the potential to expand by around 200,000 hectares, in the regions of Kaolak and Fatick.

The major constraints limiting the exploitation of this potential are soil salinization and acidification, the investment gap and a lack of good quality seeds of suitable varieties.

The APRAO project has launched a participatory initiative focusing on the goals of the PNAR: 330 hectares in the region of Fatick, and several Economic Interest Groups have been supported in order to relaunch the rainfed rice production system. Action has been undertaken in close collaboration with the Water and Food Security Initiative for Africa (IESA), the beneficiaries and the Seed Division. Fifteen hectares of land have been recovered and advisory support officers have received training which they have in turn disseminated to over 100 producers using the farmer field school method. The APRAO project has introduced quality inputs for 30 hectares, in addition to production and processing equipment, which together have enabled revenue to be increased from 0.69 to 1 t/ha and losses to be reduced from sowing to post-harvesting operation: production has thus considerably increased, from 3 to 101 tonnes. In total, over 96 hectares of new land have been planted using the sustainable technologies acquired by the producers. The extrapolation of such an approach to 100,000 hectares of land suitable for rice farming in rainfed areas would make it possible to guarantee an annual production of over 200,000 tonnes of paddy, which would resolve around 20% of the country's rice deficit.

"We remain convinced that the expansion of initiatives of this kind will make it possible to recover most of the previously exploited lowlands, which would lead to a significant increase in rice production in rainfed areas."

Rice producer from the Economic Interest Group of Djilor Djidiack

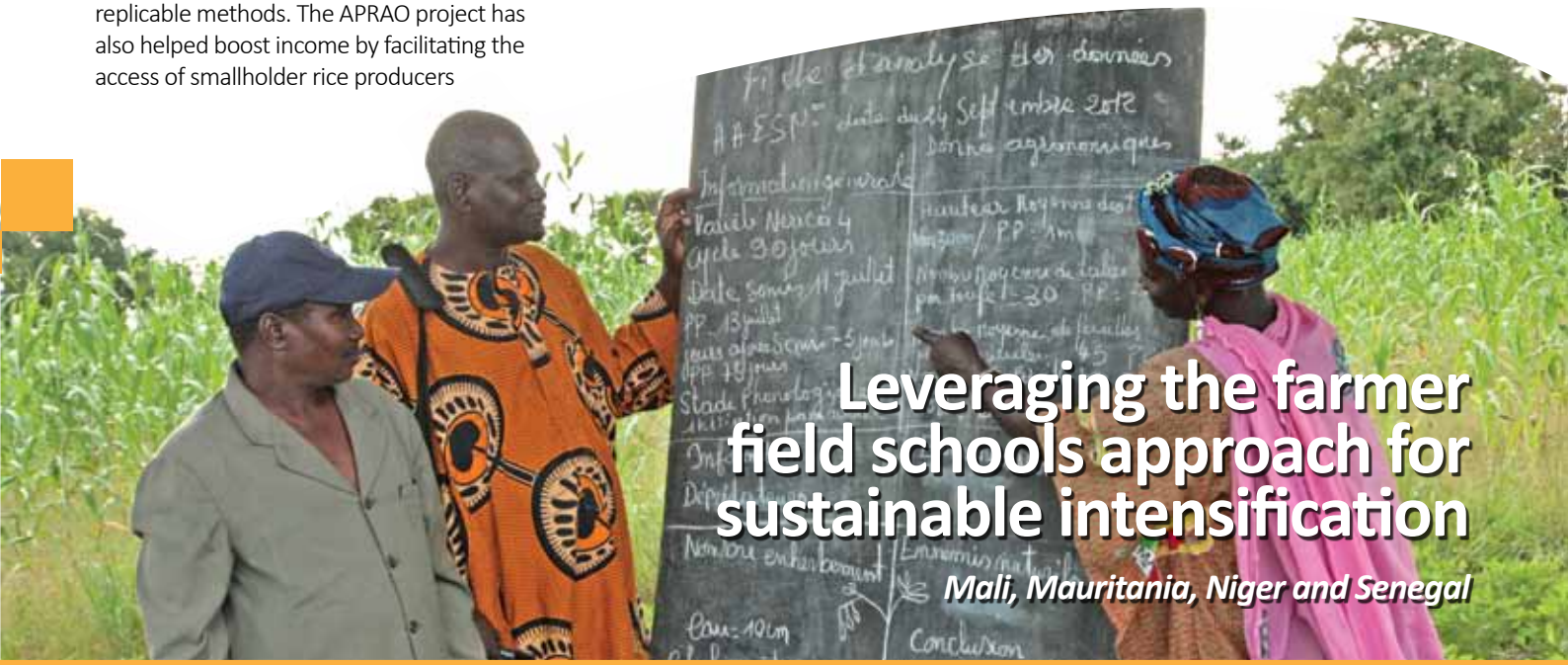
In order to boost the capacities of smallholder rice producers to address the constraints of the rice sector, the APRAO project decided to leverage the achievements of the FAO's 'Regional Integrated Production and Pest Management Programme' (IPPM), an initiative designed to reduce the use of pesticides while increasing crop yield and ensuring the diversification of production systems.

The method used by the IPPM programme is essentially based on experimental demonstration plots used as open-air classrooms, enabling farmers to keep weekly track of the results achieved by the technology offered. By adopting this effective methodology, the APRAO project has been able to pass on complex techniques using highly intuitive and easily replicable methods. The APRAO project has also helped boost income by facilitating the access of smallholder rice producers to quality seeds, fertilizers and plant protection products by setting up a working capital fund. After three years in operation, the capacity-boosting activities undertaken by the APRAO project and carried out essentially using the farmer field school method, have successfully changed the lives of over 6,000 producers.

Significant revenue increases have been observed across large stretches of land: in Niger, a 31% increase across more than 1,500 hectares, with peaks of 9.65 t/ha; in Mauritania, the increases were in the order of 33% across 130 hectares, with yields of 8.8 t/ha being achieved in irrigated areas; and lastly, in Senegal, a 35% increase in revenue was seen across 135 hectares, in comparison to the previous figure of 6 t/ha.

Another significant achievement of the project is the improved quality of the paddy. In Mauritania and Senegal, paddy milling yields have risen to 65% as against a figure of around 50% prior to the APRAO project's intervention. This improved production, resulting from the smallholder producers following principles of sustainability, has enabled them to improve their food security and boost their incomes.

"Smallholder producers have improved their food security and boosted their income, in addition to being more respectful of the environment"



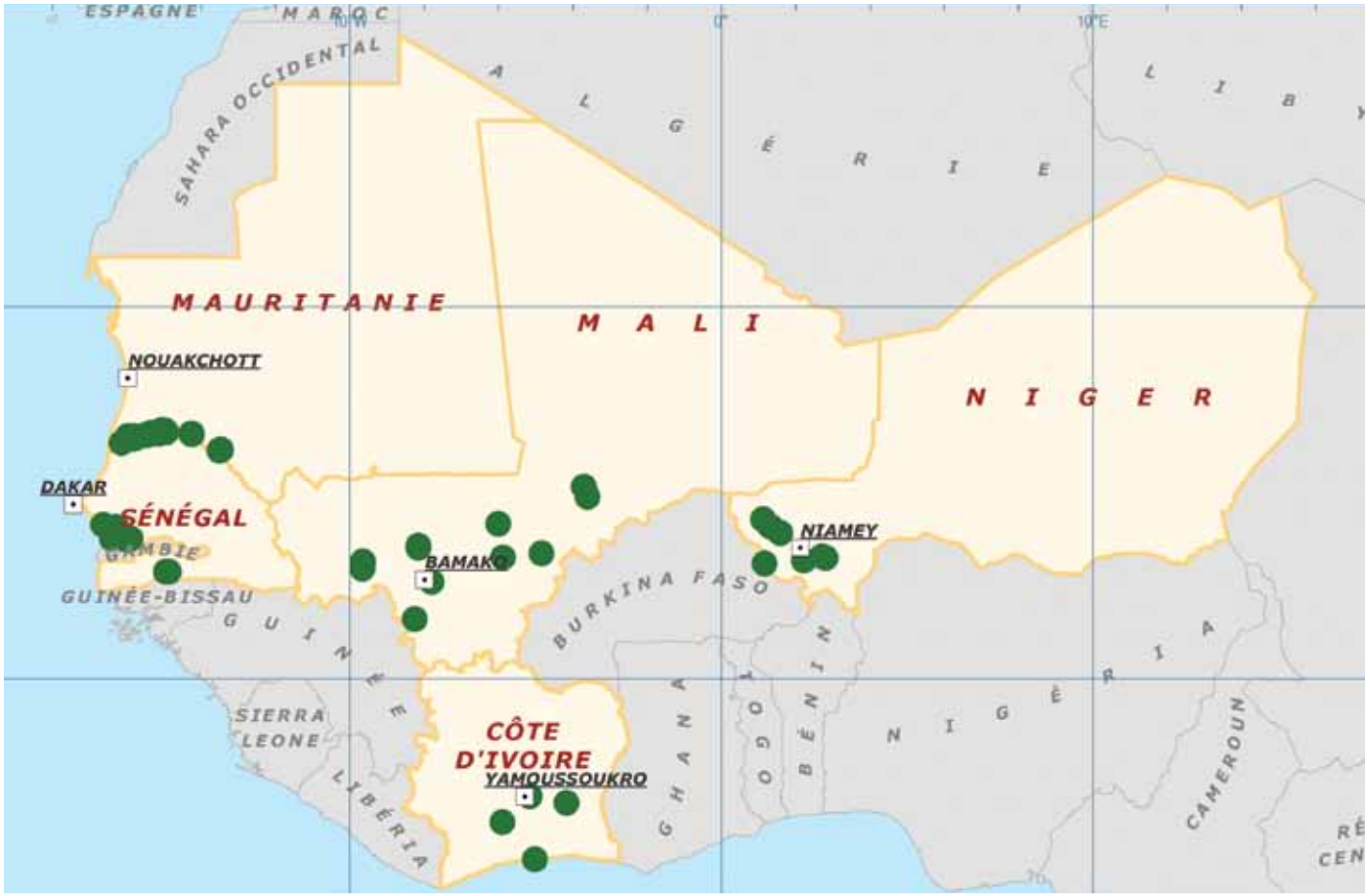
Leveraging the farmer field schools approach for sustainable intensification

Mali, Mauritania, Niger and Senegal

West African rice

Rice is one of the most widely consumed cereals in sub-Saharan Africa. In West Africa, in particular, the annual increase in rice consumption was 6.6% from 2001 to 2005, far higher than the growth rate in production for the same period. Paddy production in West Africa accounted for 65% of total rice production in sub-Saharan Africa from 2001 to 2005. Rice production in West Africa has more than doubled in 20 years; from 2.76 million tonnes in 1985 to 5.75 million tonnes in 2005 (hulled rice equivalent), but this increase in production is essentially due to the exploitation of new land.

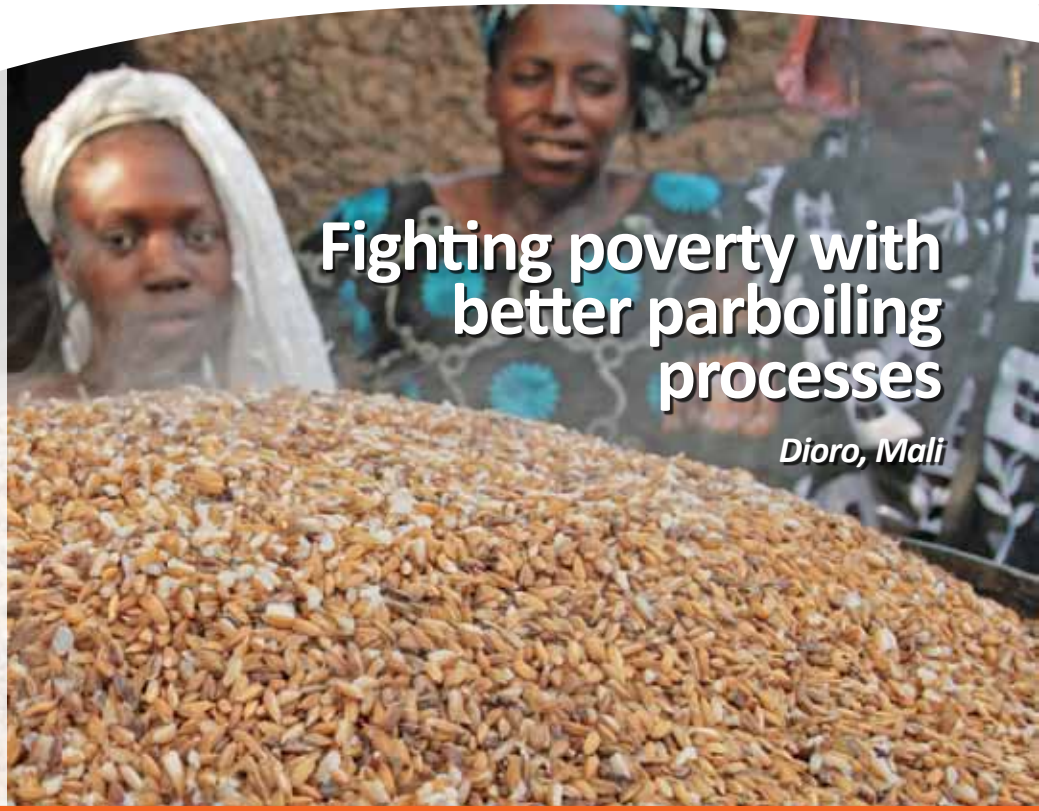
Although West Africa remains the hub of rice production in sub-Saharan Africa, 40% to 50% of the rice consumed has to be imported. City dwellers, in whose diets rice is increasingly important, are the segment of the population that consumes the greatest quantities of this foodstuff in the region. Unfortunately, world rice stocks are at their lowest level since 1983/1984 and, in the long term, the African countries will no longer be able to rely on imports from Asia to feed their growing populations.



APRAO project intervention sites

Fighting poverty with better parboiling processes

Dioro, Mali



In Mali, the APRAO project is addressing the weak link in the value chain – the processing sub-sector – in order to relaunch the rice production sector and increase rural women's income.

In West Africa, the activity of small scale rice processing is generally controlled exclusively by women. Dioro, a village located a few dozen kilometres from Ségou (Mali), is no exception.

Although much appreciated by consumers because of its nutritional properties and the essential role it occupies as an ingredient in certain dishes, parboiled rice is a product whose organoleptic properties vary immensely – an aspect that could hamper its consumption and marketing.

The poor quality of parboiled rice is a consequence of inappropriate technologies, a lack of equipment and limited access to the resources needed to operate effectively.

The APRAO project brought improved technology, promoted by AfricaRice, to the Badéyda Women Parboilers Association in Dioro. This technology was greatly appreciated by the women, as can be seen from the increase in membership numbers, which rose from 60 women in 2004 to 170 members in 2013.

Following the distribution of improved kits and training in improved parboiling techniques, significant results were achieved. The first of these was an increase in productive capacity: every week a woman can produce 12 bags of parboiled rice, in comparison with only 8 under the previous conditions.

The Association's overall productive capacity thus rose by 50%, allowing them to market 359 tonnes of parboiled rice as opposed to their previous figure of 239.

The second result was the substantial improvement in the quality of parboiled rice, which is now appreciated as far away as Guinea and has a higher market price than rice that is parboiled using the traditional process.

"Before, when I was processing 10 bags of rice, I earned 2,500 CFA Francs; today, for the same amount of processed rice, I earn 10,000 CFA Francs thanks to the techniques I have learned through the project. What's more, I save time and production costs, particularly because I use less charcoal."

A member of the Dioro Women Parboilers Association

Working together for quality local rice

San, Mali

The APRAO project has implemented a number of participatory initiatives aimed at bolstering the processing sub-sector. An example is the installation of the mini rice mill in San, one of the project's intervention sites in Mali.

The performance of the production systems operating on-site and the large amounts of rice produced are a source of pride for the members of the local farmers' organization, the Association des riziculteurs de la plaine Aménagée de San Ouest (ARPASO), which has 4,593 members, including 273 women, and cultivates over 2,000 hectares. Their yield amounts to around 6.5 t/ha thanks to the widespread use of certified seeds, among other factors.

The APRAO project played an active role in this context, instigating a meaningful dialogue with the members of ARPASO and with the Agence luxembourgeoise pour la Coopération au Développement (LuxDev), with a view to establishing common ground for lifting the major constraints. Notably, one of the measures requested by the Association was the provision of modern processing equipment that would help them achieve greater dietary and economic independence.

Thanks to APRAO'S efforts to create a conducive environment, the stakeholders decided to pool their efforts (APRAO contributing US$70,000 LuxDev US$45,000 and ARPASO US$40,000) to enable the mini rice mill serving the Association's members to be installed. With a nominal capacity of 1.5 tonnes per hour, the facility produces quality processed milled rice, broken rice and commercial rice as well as generating milling by-products that ensure profitability.

In 2012, the facility processed 272 tonnes of paddy rice. The rice processed in this manner is more in line with the expectations of the producers in terms of milling yield, which ranges from 75% to 80%, as against the 50% to 60% figure achieved by traditional units. The quality of the end product has also improved thanks to the complete elimination of bran and impurities – the latter accounts for between 10% and 20% of rice processed using traditional hulling units.

The consumers are also pleased with the improved quality and are willing to pay a higher price per kilo: 300 CFA Francs instead of 290 CFA Francs. The combination of these two factors has boosted producers' income, which is estimated at US$34,000 for 2012.

"The rice processed in this way is better in meeting the expectations of both producers and consumers."

A reliable SMS information system facilitates the marketing of quality seeds

Ivory Coast

Rice is essential for food security in Côte d'Ivoire and it is estimated that each inhabitant consumes approximately 58 kg per year. Rice is also a source of income for around 10% of the active population, 50% of whom are women. The country's domestic production meets only about 42% of its needs for milled rice; the remainder has to be imported.

With a view to reducing this dependence, the Government has set up a rice development strategy which recommends the use of quality seeds. However, the absence of reliable, up-to-date information about the markets and players in the seed sector has often been considered a weakness in accessing seed needs.

Combined efforts have therefore been undertaken to find a sustainable solution to the seed issue, and a partnership has been set up between the key players: FAO through its APRAO project, the Fonds interprofessionel de la recherche et le conseil agricoles (FIRCA), the Agence nationale d'appui au développement rural (ANADER) and the Association nationale des semenciers de Côte d'Ivoire (ANASEMCI).

APRAO's partners agreed on the need to set up an information system for the production and marketing of seeds based on inexpensive but effective technology and making it possible to improve the quality of the data and facilitate their dissemination. The consortium was founded in July 2013 and began by developing the mobile phone software and training the system administrators.

The training workshop is an opportunity for the institutions involved to enhance their skills in mobile technologies, but is also a overarching public-private partnership capable of promoting effective collaboration between the players in the seed industry, with a view to making it easier for farmers to obtain quality seeds and to boost the income of seed producers.

As Antonio Stocchi, who works at FAO's Emergency Operations and Rehabilitation Division (TCE) explains, *"In Africa, mobile phones now play a vital role in the sharing of information and knowledge, and FAO brings resources and expertise that are useful for the development of tools based on SMS technology to improve the quality of life in rural communities."*

Towards more profitable marketing

Rosso, Mauritania

The APRAO project has implemented a number of participatory initiatives aimed at bolstering the processing sub-sector. In Mauritania, each inhabitant consumes around 30 kg of rice per year, of which only 40% is produced domestically; hence the importance of encouraging rice producers to increase production and to do so more effectively.

After 15 years of unregulated paddy rice sales, the Government decided to intervene by setting the selling price per kilogram of rice on the basis of the quality of the paddy, in order to safeguard the rice farmers and promote the quality of locally-produced rice. This decision was made as a result of perfect synergy and numerous regular exchanges between all the stakeholders supported by the APRAO project. An appropriate measure was thus devised and put into practice by the Ministry of Rural Development: by working out a scale that was approved by all actors in the sector, the selling price was set on the basis of the yield after hulling, a sound indicator of the quality of the paddy and the product obtained from processing.

Rosso is a city located in the rice production area in the Senegal River Valley. 'We were really struggling before this measure was put into practice,' says Coudou Fall, President of the Cooperative of women rice producers in Rosso, one of the local organizations targeted by the project. 'Despite all the care we took with our rice farming, the superior quality had not yet been recognized, which we found very discouraging.'

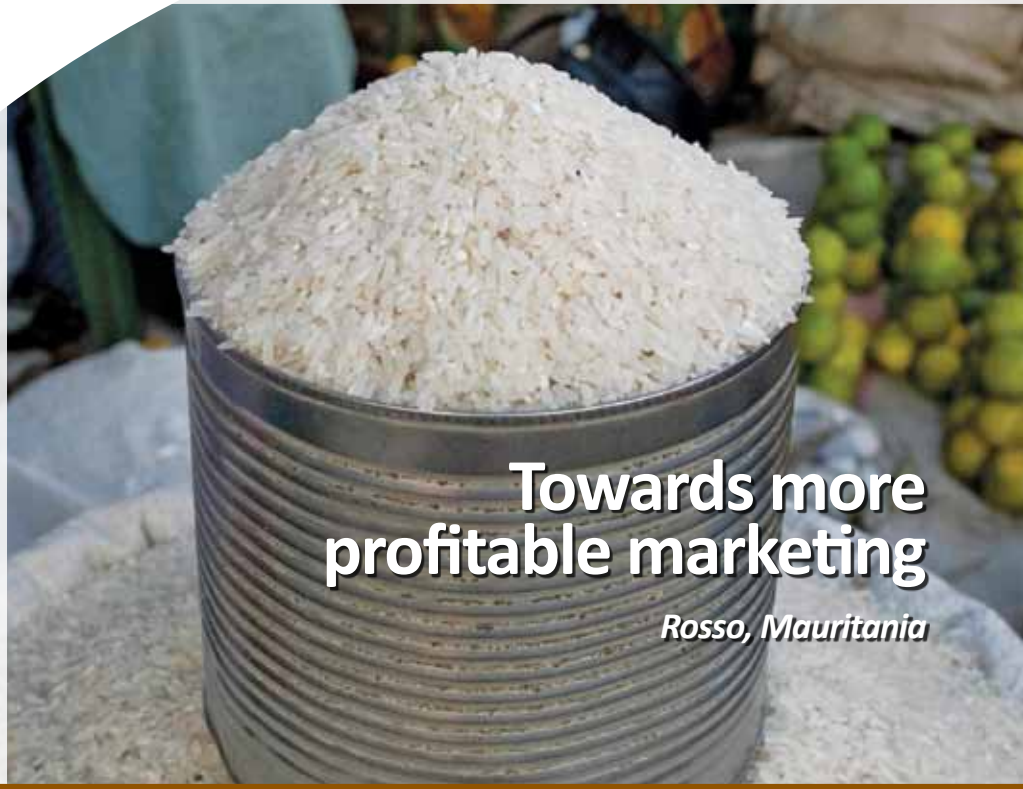
Things have now changed and thanks to the impetus of the APRAO project, which targeted this weak link and fostered efforts aimed at improving the quality of production and facilitating its entry in the market.

"We earn more now,' says Coudou. "Our rice has been tested for quality and the results are very good. So we waited a month and we sold all our rice for 100 UM per kilo (equivalent to US$0.34)' instead of selling it for 75 UM (equivalent to US$ 0.25) per kg, as was previously the case.

Good seeds from productive varieties greatly contributed to this success story, as did the consistency of the crop, which allowed operations to be more easily managed. The resulting increase in income enabled the women from the Cooperative to return home with greater peace of mind and provide their children with more copious meals.

The new scale approved by all stakeholders

50 to 55% at 90 UM/kg (~ US$ 0,30)
55 to 60% at 95 UM/kg (~ US$ 0,32)
60 to over 100 UM/kg (~ US$ 0,34)

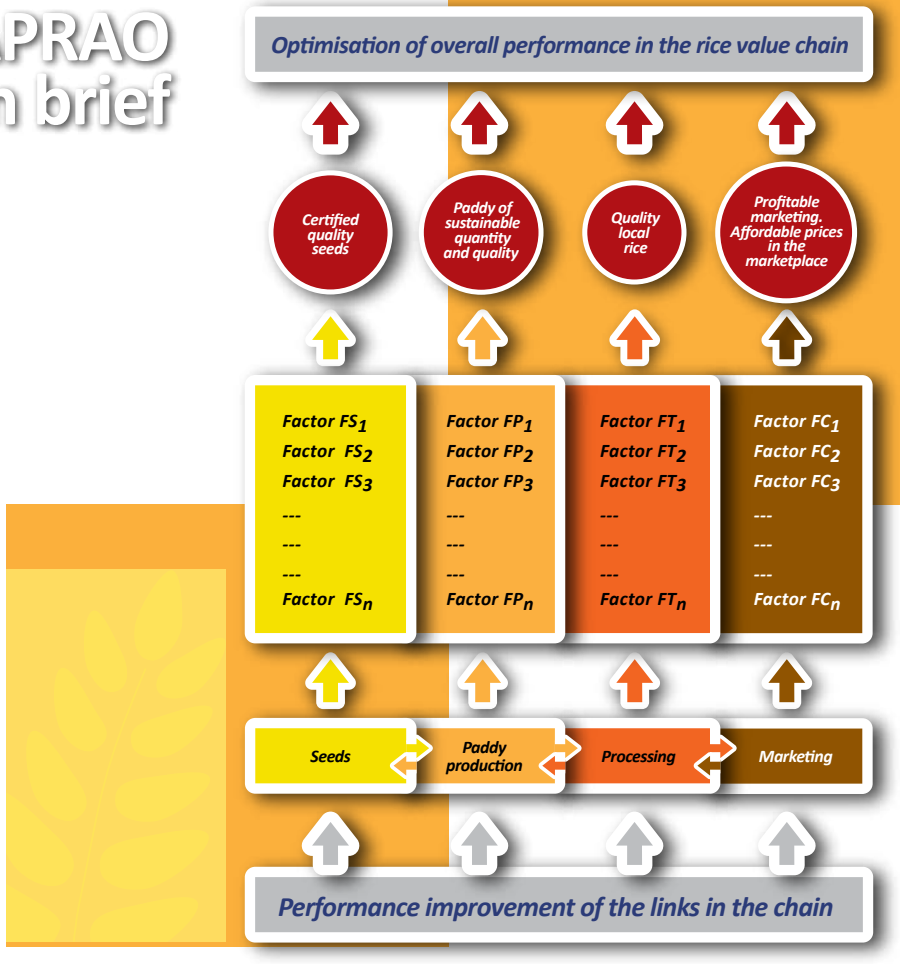


APRAO in brief

In 2010, the FAO, implemented the project known as "Improvement of rice production in West Africa in response to soaring food prices", known as APRAO and financed by the Kingdom of Spain with total funding of US$ 5.8 million. The project is designed to reduce the sub-region's dependence on imports, contributing to the increase in rice production in the five countries of the region, Côte d'Ivoire, Mali, Mauritania, Niger and Senegal.

More specifically, APRAO is targeting the sustainable improvement of these countries' domestic production by helping lay the foundations for the development of sustainable rice farming. The approach adopted is based on optimising the value chain by improving the performance of each link in the chain and building on past achievements and potential based on the guiding principle of capitalising on past achievements, consolidating the present and safeguarding the future'.

This optimization makes it possible to better target interventions, actors and beneficiaries, develop relevant partnerships and increase their profitability. The greater ensuing effectiveness is based on the concept of 'producing more with less' with a view to promoting sustainable development within the sector. The areas of intervention result from an environment conducive to development, the strengthening of capacities and the sharing of knowledge for four chains: seeds, production, processing and marketing. The beneficiaries are agricultural cooperatives, women's groups and small private growers.



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Graphic design: Yayamedia

For more information:
Kouamé Miézan
APRAO Regional Technical Coordinator
kwamemiezan@yahoo.fr
http://www.fao.org/ag/aprao/