



Soaring world  
cereal prices

## A boon for African farmers?

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The soaring world cereal prices in 2007/2008 and the subsequent riots in several sub-Saharan African cities reignited the debate on food security policy. Could rising world cereal prices actually be a blessing in terms of boosting food production by guaranteeing more attractive prices for farmers? This implies determining whether global price fluctuations are actually transmitted to national market prices. This was the objective of a study focusing on five countries in the region.

Between 1994 and 2009, the degree of transmission of world rice prices to domestic markets varied considerably from one country to another: low or even inexistent in Mali, Cameroon and Madagascar; high in Senegal and Niger. The 2007/2008 price increases made no structural changes to the types of transmission identified over the long term.

The segmentation of food markets between imported rice, local rice and other foodstuffs explains this imperfect transmission of global prices to sub-Saharan markets. This finding must be taken into consideration in food security strategies in sub-Saharan Africa.

The social unrest in several sub-Saharan African cities that accompanied the soaring world cereal prices in 2007/2008 drew the attention of the media and of international organisations to the vulnerability of food systems in the countries of the region in a globalised market. It rekindled the debate on the strategies the public authorities need to implement in order to ensure food security for their populations.

Some people believe that the price surge confirms that the international market is, by nature, uncertain, and that it cannot guarantee stable access to food resources for the poorest populations. They advocate restoring food sovereignty.

Others think the higher prices mark a shift in the historical downward trend in agricultural

perspective

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prices; they indicate that food products may be given higher value, which could motivate farmers to boost their production. To back up the policy debate, a study analysed to what extent the rise in global rice prices was transmitted to the price of local rice and to that of other staple foods in five sub-Saharan African countries: Cameroon, Madagascar, Mali, Niger and Senegal.

Rice was chosen as it is emblematic of debates about food, and of the risks facing consumers in countries dependent on the international market for their food supply. Furthermore, world prices for high quality rice rose from USD 340 to USD 1 000 per tonne between August 2007 and March 2009.

## Dependency on rice imports differs from one country to another

In sub-Saharan Africa, rice is becoming increasingly important in peoples' diets, especially in urban areas: average annual per capita consumption has risen from 11 kilos to more than 25 kilos over the last 40 years. The region depends on the global market for its supply: half of the volume consumed is imported; and the value of imports represented on average 16% of food imports between 2001 and 2008 (FAOSTAT).

Diets and dependence on the global market vary, however, as shown by the five countries studied.

In Cameroon, cereals account for less than half of the food intake (their consumption is higher in the north of the country); rice is a supplementary cereal (11 to 18 kilos per person per year) that is almost exclusively sourced from imports. In Madagascar, rice is the staple diet (118 kilos per person per year); supply is mostly local (85-95%). In Mali, local cereals (millet, sorghum, maize) form the staple diet; rice is a secondary cereal (60 kilos per person per year) and is mostly sourced locally (75-90%). In Niger, cereals are the staple diet; rice plays a marginal role (40 kilos per person per year) and is supplied by imports (60-80% depending on the year). Finally, in Senegal, rice is predominant in consumption, especially in urban areas (80-90 kilos per person per year); most of the supply is provided by imports (80-90%).

## Different types of transmission depending on the context

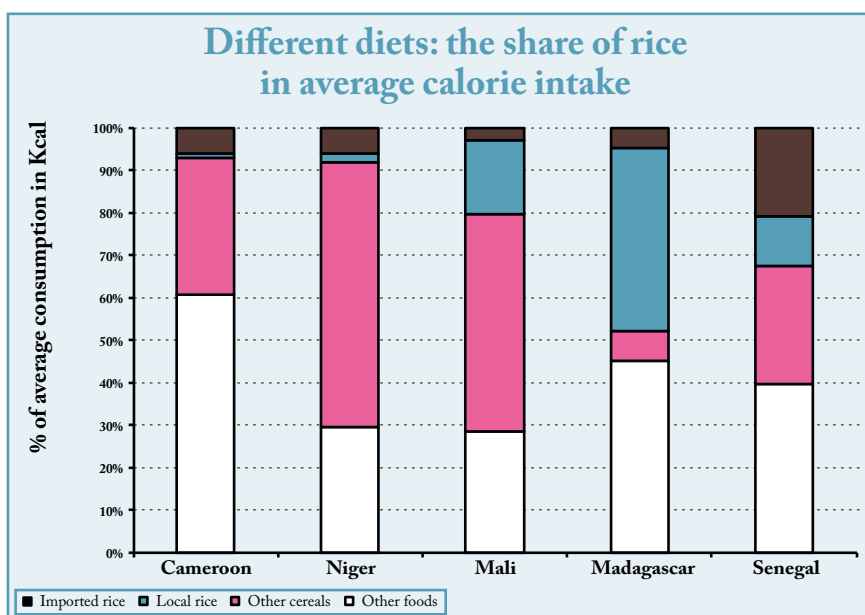
To what extent were world cereal price fluctuations transmitted to domestic food prices over the long term (1994-2009)? Did the soaring prices in 2007/2008 change the structural trends observed?

Price transmission was analysed using monthly price time series from 1994 to 2009 in order to characterise the types of relationship existing between global price fluctuations and domestic price movements over the long term. An analysis was also made over the short term, from 2007 to 2009, to determine whether the price hikes had altered the relationship observed over the long term.

The results obtained identified structural relationships: either global prices are not transmitted to domestic prices, or they are fully transmitted (cointegration relationship). Alongside these two extremes, some temporary relationships were also identified, with the soaring global prices causing a domestic price shock.

In the countries where rice is mainly sourced locally, and where it forms the staple diet, fluctuations in world rice prices are not transmitted, over the long term, to the price of locally-produced rice. The price of rice on the domestic market is primarily a result of supply and demand for local rice. The price of imported rice adjusts to seasonal variations in the price of local rice. Indeed, merchants favour

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the local market and turn to the international market to supplement local supply. This behaviour has been encouraged by the historically low global prices over the last few decades, which made it possible to import at lower cost. The high prices in 2007/2008 caused a temporary increase in the price of local rice, but this shock does not necessarily reflect a change in the nature of the relationships between global and domestic prices.

In the countries where rice plays a secondary role in consumption and where it is mainly provided by imports, two scenarios emerge over the long term and as prices surge. If the public authorities have the budgetary resources to intervene in the price of imported rice, as is the case in Cameroon, global market fluctuations have little impact on the price of rice sold locally. Otherwise, as in Niger, the global price determines the price of imported rice on the domestic market. For other food products (millet, plantains), over the long term, global prices have no influence on domestic prices; the shock caused by the price hikes nevertheless caused a slight, temporary disturbance.

In the countries where rice is a staple and where imports account for most of supply, as in Senegal, the world rice price determines, over the long term, the retail price of imported

rice and of rice produced locally. But it does not affect the prices of local cereals such as millet, the other major cereal. The 2007/2008 price hikes did not alter the type of transmission identified over the long term, although the price of local rice increased several months after the shock.

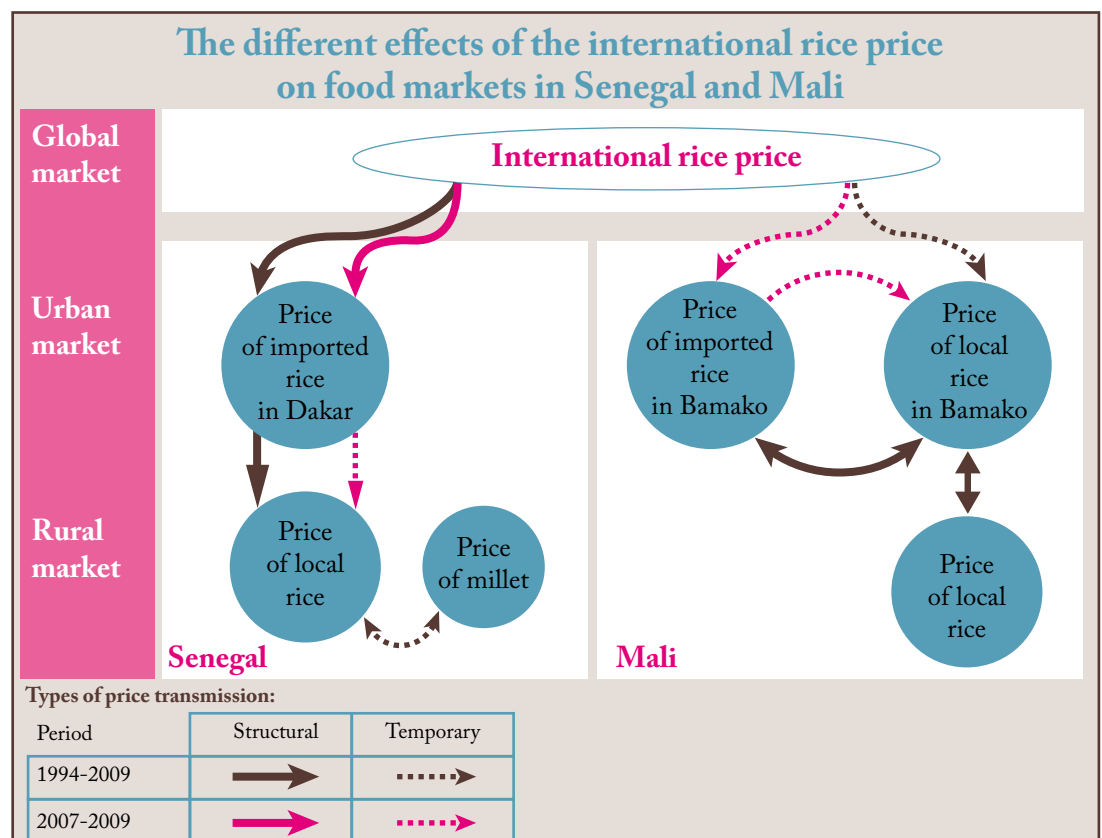
## Segmented markets

Despite the increasing opening of sub-Saharan food markets to global trade over the last 15 years, the rise in world rice prices has not been transmitted in a uniform and systematic manner to the food markets in the countries studied.

This segmentation between the global market and national markets is explained by the imperfect substitution between imported rice and locally-produced foodstuffs. First, consumers maintain a diversified diet; a person in Senegal will thus choose rice or millet according to the meal (lunch, dinner), the place (at home or elsewhere) or other practical or cultural considerations. Second, the national market for rice, which encompasses a broad range of products (25% broken rice, broken rice, par-boiled rice, aromatic rice) is also segmented.

Understanding the nature and dynamics of the food systems in each country, as well as the

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## A few words about...

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*The transformation of agricultural commodities into foodstuffs that are practical to use is a major challenge for restoring or consolidating food security.*

mechanisms for market segmentation, is therefore a prerequisite for developing any food security strategy and for selecting policy measures. The price is just one factor among others in decisions. Consumers take it into account if they can choose between two products offering comparable properties and services. If urban dwellers in sub-Saharan Africa have adopted rice, this is because it is easier to prepare than other cereals or tubers: the cooking time is shorter and it can be easily stored in a ready-to-cook form, etc. And if they prefer imported rice, even if it is more expensive than local rice, this is because of factors such as: the packaging, which guarantees the product is hygienic; homogeneity and drying, which reduce the preparation time and increase the volume of prepared rice; availability throughout the year on urban markets; payment facilities provided by suppliers, etc. Knowledge about the behaviour of consumers and of food system operators is still insufficient, and needs to be further investigated.

Market segmentation implies that local food systems are not systematically and fully exposed to international competition. Outlets for African farmers are thus preserved, which is an advantage in the short term. But in the longer term, local systems could be marginalised. Indeed, a low transmission of global price increases to domestic markets will not encourage local operators, especially farmers, to invest and innovate in order to adapt their supply to the preferences and constraints of urban consumers.

## Public policy to build domestic markets

The imperfect transmission of higher world cereal prices to domestic markets, due to market segmentation, limits the level of incentives expected of a price increase to boost food production in sub-Saharan Africa. This segmentation may also explain the limited impact expected on local production of an increase in customs tariffs on imported cereals if global prices fall.

A rise in the price of imported cereals will only have an incentive effect on local production if local systems are able to provide foodstuffs that can be substituted for the products sold on the global market. The transformation of agricultural commodities into foodstuffs that are practical to use is a major challenge for restoring or consolidating food security in sub-Saharan Africa.

To ensure African farmers benefit from the growth in demand for food, public policies must not be limited to action concerning production and prices. They must also propose support measures for the processing and marketing of food products. ■



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### perspective

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This *Perspective* is based on the findings of a study financed by the Foundation for world agriculture and rural life (FARM), which was conducted by three joint research units of which CIRAD is a member: MOISA (Markets, organisations, institutions and stakeholder strategies, <http://umr-moisa.cirad.fr/>); Innovation and Development in Agriculture and the Agrifoods Sector (<http://umr-innovation.cirad.fr/>); and ARTDEV (Actors, Resources and Territories in Development, <http://recherche.univ-montp3.fr/artdev/>).

This study has resulted in the following publications:

- David-Benz H., Diallo A., Lançon F., Meuriot V., Rasolofo P., Temple L., Wane A., 2010. L'imparfaite transmission des prix mondiaux aux marchés agricoles d'Afrique subsaharienne. Farm, Cirad, 28 p.

[http://www.fondation-farm.org/IMG/pdf/Rapport\\_FARM\\_2009\\_Transmission\\_et\\_volatilite\\_des\\_prix-final.pdf](http://www.fondation-farm.org/IMG/pdf/Rapport_FARM_2009_Transmission_et_volatilite_des_prix-final.pdf)

- Temple L., Meuriot V., Ali M., 2009. Déterminants de l'instabilité des prix alimentaires au Cameroun : une analyse institutionnelle de résultats économétriques. Farm, Cirad, 62 p. [http://www.fondation-farm.org/IMG/pdf/Rapport\\_FARM\\_2009\\_-\\_Transmission\\_et\\_volatilite\\_des\\_prix\\_-\\_Synthese\\_Cameroun.pdf](http://www.fondation-farm.org/IMG/pdf/Rapport_FARM_2009_-_Transmission_et_volatilite_des_prix_-_Synthese_Cameroun.pdf)

- Meuriot V., Temple L., Madi A., 2010. Faible transmission des prix internationaux aux marchés domestiques : le poids des habitudes alimentaires au Cameroun. Économies & Sociétés, série F (forthcoming), 19 p.