

Quality doesn't speak for itself: Evidence from the Senegalese onion market ^[1]

Authors: Tanguy Bernard, Alain De Janvry, Samba Mbaye, Elisabeth Sadoulet

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Net food imports have been increasing rapidly in sub-Saharan Africa, exacerbated by the demand for higher quality foods associated with urbanisation, rising incomes, and changes in consumption habits. This is creating a huge problem for domestic producers that increasingly find themselves marginalised from their own domestic consumers because they do not produce the right quality to compete with imports. With many employed in agriculture, and with most of the poor dependent on agriculture for their livelihoods, the social cost of rising dependency on food imports could be enormous, requiring the attention of governments to remedy the situation.

Lack of quality recognition

Various studies have recognised the fact that markets fail to sufficiently remunerate quality when it is not fully observable. This is the case for the market for lactating cows in India (Anagol et al. 2018), the corn market in Kenya (Hoffman and Jones 2018), and the market for horticultural products in India (Fafchamps and Hill 2008). Saenger et al. (2014) show that milk producers under contract with a processing plant in Vietnam increased quality after an independent milk quality measurement system was introduced.

Onions in Senegal are another case in point. Some 40% of domestic consumption is imported from Holland. Domestic production is protected at a high social cost through a seven-month import ban and a 35% import tariff. Protection could be reduced if domestic production were more competitive with imports, which would require quality improvement. For this, markets need to better recognise quality and, in accordance, offer price incentives to farmers. This could induce farmers to invest in higher quality production and to engage in marketing practices that sort onions on the basis of quality.

Field experiment: Making quality more observable on onion markets

To test whether domestic producers are responsive to better quality recognition on onion markets, we ran a field experiment introducing scales and quality labelling of onions on the Podor market in the Senegal River Valley (Bernard et al. 2017). The Senegal River Valley is an important onion-producing region. It is far removed from the main urban markets, but well connected by major highways. It is also well served by a regional development agency that is actively engaged in fostering regional development and facilitating the adoption of technological and institutional innovations. In this distant market, onions have typically been sold by volume (presumed 40kg bags) as opposed to weight and quality. This induces farmers to produce onions with high water content to fill more bags. High water content implies high perishability and low storability, making these onions an inferior product compared to imported onions from Holland.

We conducted a randomised control trial as follows:

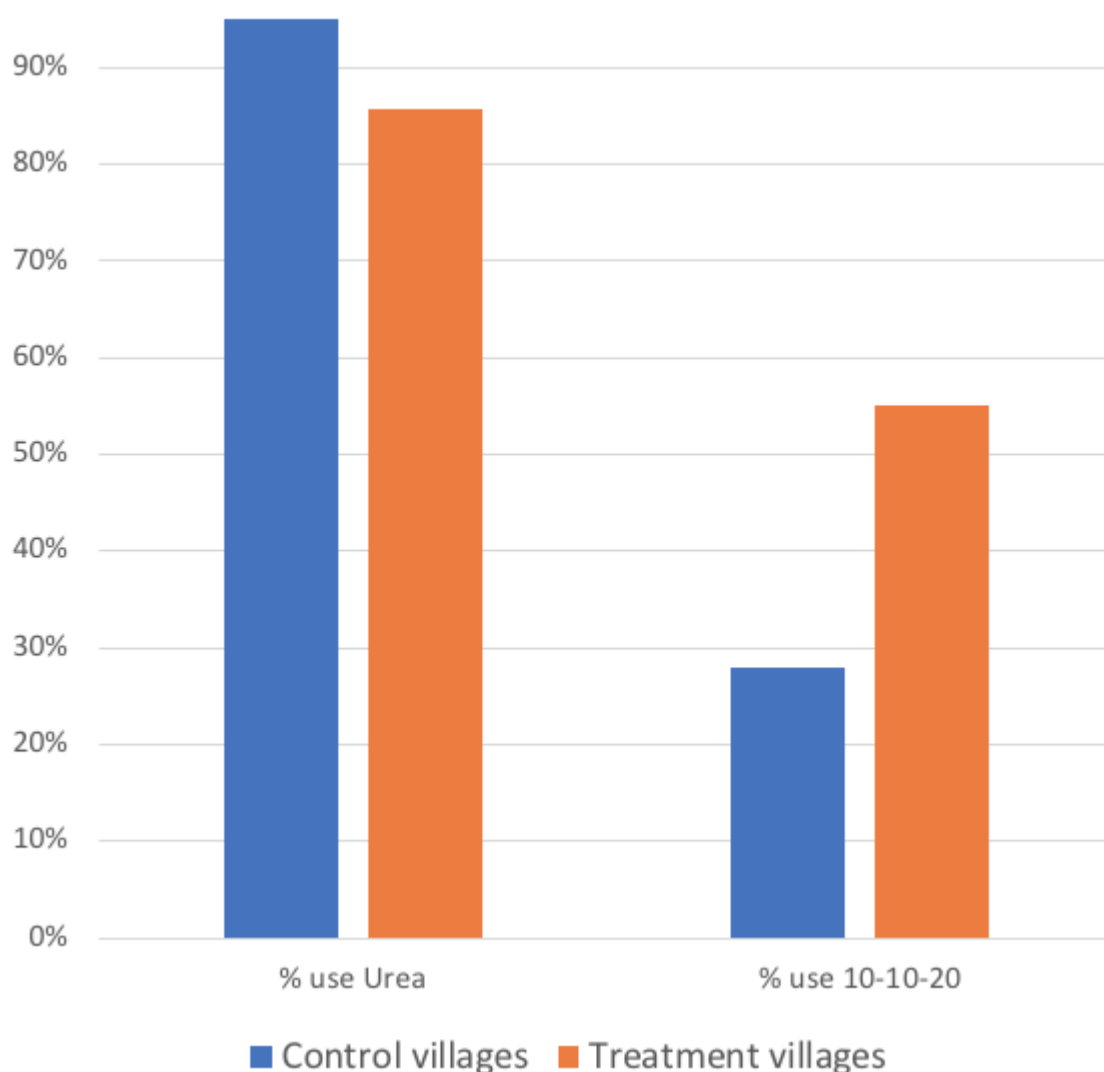
1. Producers in all 34 villages of the Podor region were trained in quality-enhancing technologies and practices. This taught them that higher quality can be achieved by switching from urea to an NPK-based fertiliser and sorting onions by quality before bagging.

2. In a randomly drawn half of the villages, farmers were informed that scales and quality labelling would be present at markets. All farmers, previously informed or not, could sort their onions by quality when arriving at the market upon witnessing the presence of scales and quality labelling, but only those that had been informed before planting could adjust their production practices to achieve higher quality.
3. Information on prices, weight, and quality was collected on all transactions in markets before and after the official use of scales and labels. We measured the price effect of this reform by calculating the difference in the prices of onions sold by informed farmers before and after the weighing and labelling became officially sanctioned by market regulation authorities.

Results: An 11% increase in net income per hectare

Our results show that information on market reforms induced a change in producer behaviour. As shown in Figure 1, there was a 9% decline in the use of urea (from a 95% base) and a 27% increase in the use of NPK (from a base of 28%). The quality of onions improved, with a 16 percentage point increase in the likelihood of onions being of good quality (from a base of 8%). For informed farmers, there was a 6% to 9% increase in the price received. For them, the estimated increase in net income per hectare was 11%.

Figure 1 Technological response to quality recognition



We thus conclude that a market reform to enable quality recognition led to gains for producers both through a direct effect on the price received and an indirect effect via a behavioural response with increased adoption of quality enhancing technology in production and increased sorting by quality in marketing. In this particular case, the reform was discontinued under pressure from the long-distance middlemen who gain from the lack of transparency on markets. However, in recognition of the importance of the issue, the government appointed a special commission that is addressing the issue of quality improvement of Senegalese onions with technical assistance from the FAO-MAFAP.

Concluding remarks

Simple market reforms, typically consisting of the introduction of an independent quality certification system, can thus have large impacts on market performance and producer behaviour. They can contribute to addressing the huge problem of increasing food dependency in sub-Saharan Africa and threats to the livelihoods of millions of smallholder farmers.

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