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Are high-value agri-food supply chains participants better insulated from shocks? Evidence from Senegal

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Empirical studies in general show that the participation in high-value agri-food supply chains has positive impacts on households’ wealth, income and poverty reduction. Other, more qualitative studies, however, point out to potential adverse effects, such as increased vulnerability of participants. We propose an alternative and complementary framework to study the welfare implication of rural households participating in the high value agri-food supply chains in Senegal. We build on the literature on consumption insurance and go beyond the measure of income and poverty used by previous studies to analyse the welfare implication of rural households participating in the high value agri-food supply chains.

We ask whether households involved in the high-value supply chains are able to better insure their consumption against shocks defined as income fluctuations. The literature on vulnerability assessment underlines the household sense of wellbeing within the framework of poverty eradication and risky environment. Households face uncertainty about the future which stems from various sources of risks or shocks. This plays a central role in the dynamic and scale of poverty (Chaudhuri, 2003). Moreover diversification is found to be a way to reduce risk exposure (Murata and Miyazaki, 2014). Consequently, it seems desirable to analyze the welfare implications of the integration of rural households in the global market – through the high-value supply chains- by considering a measure of household welfare which takes into account both average outcomes and the risk households bear (Ligon and Schechter, 2003). The cross section data - one year - used by most of the previous literature that focused mainly on the income-based measure of welfare is thus limited to dealing with the issue of household’s vulnerability and the dynamic of the agri-food supply chains sector

We use two rounds of household surveys conducted in the region of “les Niayes” in Senegal, in July-August 2007 and in July-August 2010. The surveys collected data on 40 villages randomly selected in four rural communities. 455 households were initially randomly selected in the first round of the survey but some observations are dropped due to attrition between the two rounds and missing values in the variables of interest. The sample we use consists of a balanced panel of 439 households in the two years 2007 and 2010.

Data on household's demographic characteristics and on different types of household's activities that allow calculating household income were collected. We use detailed information on farm and off-farm activities to calculate total household income as well as its components i.e. farm and off-farm income. Total household income is income calculated over the twelve months prior to the survey from farming, from employment (agro-industrial or others), from other nonfarm business activities (self-employment), as well as remittances (non labor). Income from farming is calculated as revenue from sale of produce, plus the imputed value of unsold produce, less the costs of production

We found that there is a difference in the extent to which both types of participants in the supply chains insulate consumption from shocks. Households who are involved in the high-value supply chain as producers are not able to better insure their total and food consumption against income shocks than their non-participating counterparts. By contrast, households who are involved in the high-value supply chains as agro industry employees are effectively able to better insure themselves. In fact all the households are able to cope with shocks from the product market while only households involving in agro-industry employment are more likely to insure their consumption from shocks from the labor market. The conclusion from this study is that integration in international markets while having a positive impact on economic development and poverty reduction may not be sustainable enough to protect households – specifically contracting households – from vulnerability.

Our results suggest that policy makers should not focus only on poverty reduction issues when studying the welfare implication of rural households participating in the high value agri-food supply chains. Complementary safety net programmes should be combined with programmes intending to increase the participation of households into contract farming. In addition, initiatives creating conditions conducive to dealing with risks for contracting households should also direct effort on off-farm activities given that labor market is found to be more vulnerable for contracting households