

Improving Self-Sufficiency In Rice Production In Senegal: An Economy-Wide And Distributional Analysis

Topic: Economics of Food Systems - I

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Improving food security is a top priority for the Senegal government. The country highly depends on the imports of food crops, about 30%. Rice is one of the most consumed food staple in Senegal, of which, imported rice constitutes about 45% of the total domestic demand. Most of the rice production in Senegal is rainfed (70%) and only around 5% of the total irrigation in the country is used for the rice production. Although yield in rice has risen over the year from 2000, it seems to have stagnated in recent years (FAOSTAT). With the rapid demographic development, the level need for rice has been on the rise, both among rural and urban households. In view of supporting the food security, country has pursued the trade policies and improving trade efficiencies that help reduce the cost of imported food items. Increased access to imported rice is expected to push the food security in country. However, it may affect the regional self-sufficiency in domestic rice activities and hence farm income. Additional policies supports to rice production, e.g. increase in productivity in factors (irrigated and rain-fed land, labour and capital) and inputs as fertilizers or introduction of higher yield varieties, can enhance the self-sufficiency, farm income, and food security further.

This study uses a recursive dynamic computable general equilibrium (CGE) model, namely DEMETRA (Dynamic Equilibrium Model for Economic development Resources and Agriculture) (McDonald et al, 2016), and microsimulation approach to assess the impacts of reducing trade costs and improving rice productivity on growth, food security, and poverty. The model is calibrated based on the Social Accounting Matrix (SAM), which accounts for 14 regions, 61 activities, and 70 commodities, including nine non-marketable subsistence food crops.

The study uses a microsimulation approach to analyse the poverty and distributional impacts of the proposed scenarios. This is a top-down approach in which consumption changes of the representative households in the CGE model are linked to consumption of the households in the survey the microsimulation model. The household information is based on the Harmonized Survey on Households Living Standards 2018-2019. The results show that improving rice productivity can enhance growth, food security and reduce poverty at regional level.