

Impacts of Climate Change on Turkish Agriculture: A Sector Model Approach

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Abstract

Agriculture is still an important sector of the Turkish economy even though its share in total GDP has been declining overtime. In order to evaluate the possible impacts of a variety of climate change scenarios on Turkish agricultural sector, an economic modeling approach based on non-linear mathematical programming is appropriate. In this study, we use Turkish Agricultural Sector model ((TAGRIS model) to analyze the regional impacts of the climate change on Turkish agriculture. Our model (TAGRIS) represents the third generation of policy impact analysis using sector models, following TASM (Kasnakoğlu and Bauer, 1988) and TASM-EU (Çakmak and Kasnakoğlu, 2002) and further develops and improves their methodologies. The basic calibration approach undertaken involves Positive Mathematical Programming with Maximum Entropy following Paris and Howitt (1998), particularly Heckelevi and Britz (1999 and 2000). Foreign trade is allowed in raw and in raw equivalent form for processed products. Foreign trade is allowed in raw and in raw equivalent form for processed products and trade is differentiated for EU and the rest of the world (ROW). The base period of the model is the average from 2011 to 2013. Model has 12 regions (NUTS1 regions).

Keywords: Climate change, Turkey, Turkish Agriculture, Sector Models

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