



Climate change and water scarcity effects on the rural income distribution in the Mediterranean

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This paper examines the effects of climate change and water scarcity on the agricultural outputs in the Mediterranean region. By now the effects of water scarcity as a response to climate change or policy restrictions has been analyzed with response functions considering the direct effects on crop productivity. Here we consider a complementary indirect effect on social distribution of incomes which is essential in the long term. We estimate crop production functions for a range of Mediterranean crops in Spain and we use a decomposition of the Gini coefficient to estimate the impact of climate change and water scarcity on yield disparities. This social aspect is important for climate change policies since it can be determinant for the public acceptance of certain adaptation measures in a context of water scarcity. We provide the empirical estimations for the marginal effects on the two considered direct and indirect impacts. In our estimates we consider both bio-physical and socio-economic aspects to conclude that there are long term implications on both competitiveness and social disparities. We find disparities in the adaptation strategies depending on the crop and the region analyzed.