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“Competing pathways for equitable food systems transformation:
Trade-offs and synergies”

Competing pathways for equitable food systems transformation: Trade-offs and synergies

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Abstract

Food security remains one of the main challenges within the UN 2030 agenda and global imbalances have been exacerbated by the COVID-19 pandemic and the recent energy crisis. Ensuring the functionality equitable food systems which leave no one behind whilst abiding to the climate targets set by the EU “Fit for 55” package and fulfilling national commitments enshrined in the EU Climate Law and the Greek Climate Law poses a pivotal policy and societal challenge for Greece in the coming years. Using an interdisciplinary approach to measure ecosystem services is instrumental in the calibration of shared socioeconomic pathways (SSPs) as their role in shaping natural capital directly affects land productivity and food produce both in terms of quantity as well as quality.

Having said that, we assess implications for food security considering the effect of improved ecosystem services on the quantity and quality of food production and the demand-side effect of a dietary shift to healthier standards in Greece. In doing so, we develop three scenarios, namely (i) business-as-usual until 2050, (ii) enhancement of ecosystem services and (iii) shift towards a Mediterranean diet. In addition, we evaluate the synergies and trade-offs among scenarios (ii) and (iii). For each scenario we model alternative specifications regarding population projections, caloric intake and crop productivity. We applied the FABLE calculator (Food, Agriculture, Biodiversity, Land use and Energy) to assess the evolution of the Greek food and land-use system from 2000 to 2050, as well as the impacts of these scenarios on GHG emissions, biodiversity targets and water footprints

Keywords: Ecosystem services, emissions, FABLE, food security