

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

Phoebe Koundouri [1], Maria Angeliki Chatzigiannakou [1], Konstantinos Dellis [1], George Halkos [2],
Alexandra Ioannou [2], Chrysi Laspidou [1, 2], George Papagiannis [1], Athanasios Yannacopoulos [1]

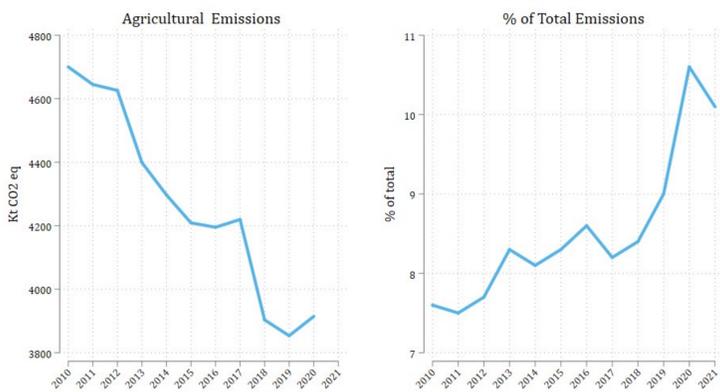
[1] Sustainable Development Unit, ATHENA RC & Research laboratory on Socio-Economic and Environmental Sustainability, AUEB
[2] Civil Engineering Department, University of Thessaly

FACTS FOR GREECE

Agriculture & Environment

- Declining GHG Emissions from Agriculture but at a slower pace compared to other sectors
- Above EU average in Agriculture VA and Employment %

Greece Agricultural Emissions

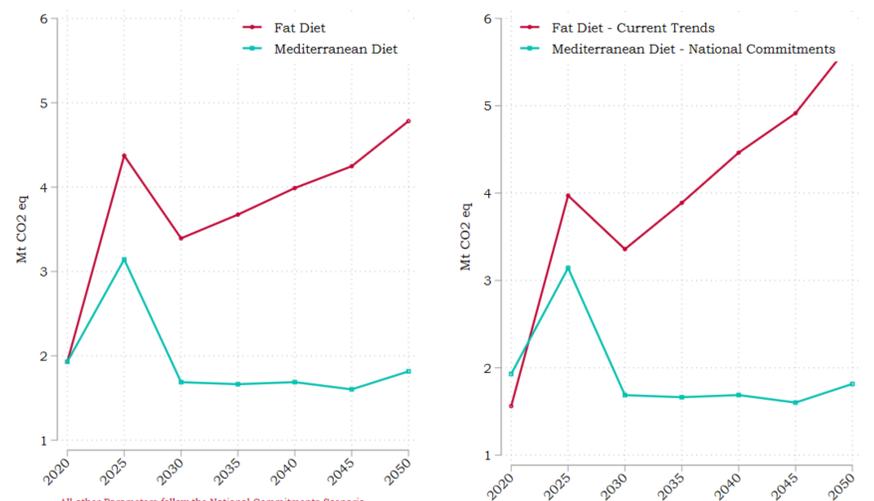


Source: World Bank and Authors' Calculations

IMPACTS using FABLE

- Embedding MD in Land-use & Energy Scenarios using FABLE Calculator
- Sharp decline in total Agricultural GHG Emissions driven mainly by Emissions from livestock – Even under common policy assumptions
- Further Improvement when MD embedded in total paradigm shift according to National Commitments
- 51% more GHG saving from LUC
- 44% drop in Pastureland

Total GHG Emissions Agriculture

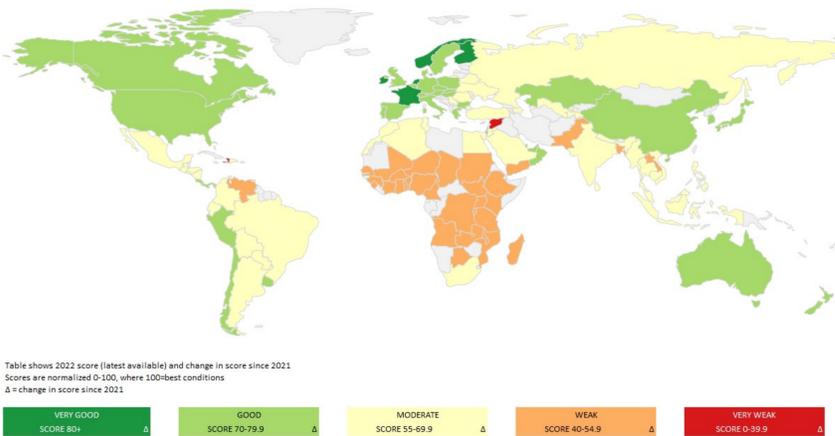


Source: FAO and Authors' Calculations

Food Security in Greece

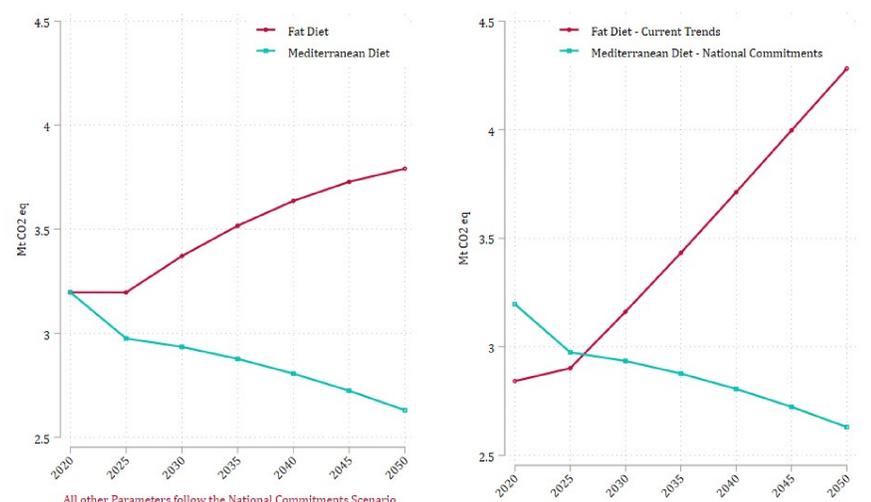
- Rank 31 out of 113 in Global Food Security Index
- 27.40% Obesity of Adult Population in 2022
- Absence of a Food Security Strategy
- Cost of healthy diet: 3.13 USD/ person/ day with expenditure on food per capita 2.49 USD (2020 - 2021)
- 0.3 Mil (3.20% of population) unable to afford healthy diet (2020)

FOOD SECURITY ENVIRONMENT
Map shows 2022 country scores classified by score



source: Global Food Security Index 2022

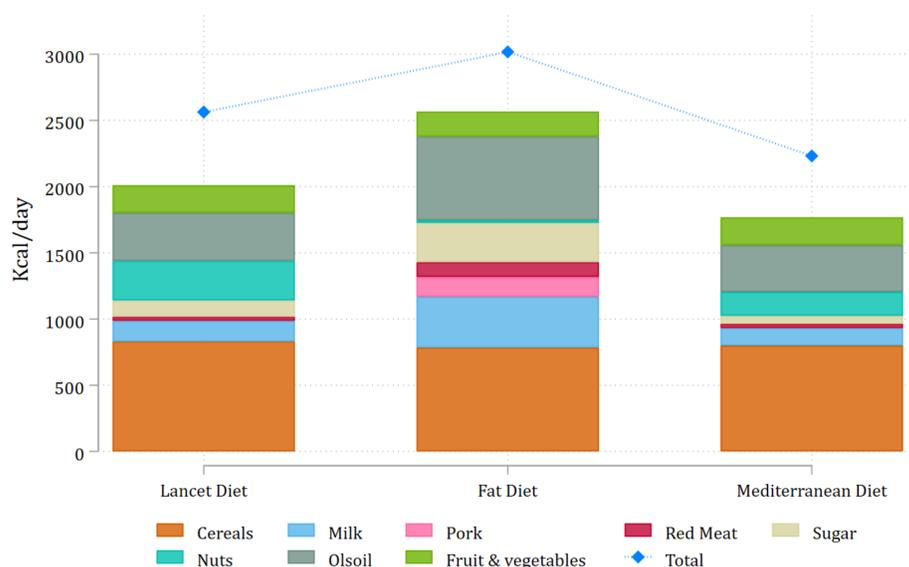
GHG Emissions Livestock



Source: FAO and Authors' Calculations

Mediterranean Diet (MD)

- Low in animal products, high in olive oil and plant-derived foods consumption
- Low environmental impact, biodiversity conservation, prevents chronic diseases, decreases public health costs, less pressure on natural resources
- Young Greek adults consume more meat, dairy, and alcohol, which are traditionally consumed at moderate-to-low levels in the MD while elderly Greeks adopt MD
- Greek FABLE team proposes an MD with a total of 2222Kcal/ day



Source: FAO and Authors' Calculations

MD and Food security

- Promotion of the MD will reduce food insecurity and provide the foundations of food security for prosperity
- MD is a tool to decrease obesity
- Lever to reduce Dependence on Food Imports
- MD at the epicenter of a coherent National Food Security Strategy
- Beyond Food Security: Human Security through taming GHG Emissions and fostering Biodiversity

Future Work

- How will MD affect the cost of living within trade patterns and EU strategy
- If MD prevails in Greece, will the locally produced and consumed food affect CO2 emissions from newly introduced "zero km" transport
- Potential effects of international adoption of MD on Greek agricultural trade balance