

The **System adaptation for OneHealth under Climate change for Vulnerable groups and Ecosystems (SOLVE)** project is a transdisciplinary initiative under the **Belmont Forum** and the **FABLE Consortium**.

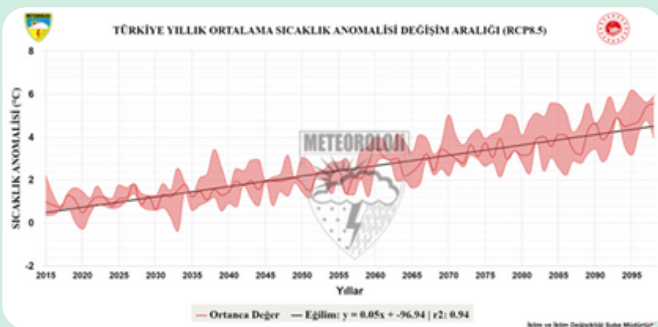
SOLVE co-develops local adaptation roadmaps with societal partners to build resilient, healthy, equitable, and prosperous food and land systems. Using a suite of models, SOLVE integrates future climate extreme risks into long-term planning and promotes a OneHealth approach to better understand and address the complex interactions between people and nature.

THE CHALLENGE

Climate change is putting Türkiye's agricultural system under growing stress. Shifts in rainfall patterns are disrupting key stages of the agricultural calendar, delaying transplanting and harvesting, reducing grain filling, and resulting in shriveled grains and lower yields. The impact is particularly severe on wheat, which poses a serious risk to national food security as wheat is the primary raw material for Türkiye's staple foods.

Agribusinesses face mounting challenges, including declining yields, rising logistics costs, and a shrinking rural workforce as outmigration accelerates. These factors reduce productivity and resilience across the supply chain.

In urban areas, rising food prices and deepening inequality are undermining nutrition security for vulnerable populations.



According to the RCP8.5 scenario, annual average temperatures in Türkiye are expected to increase between -0.4 and 3.8 °C in the first half of the century, with an average annual increase of 1.7 °C.

FOCUS AREAS

This case study focuses on İstanbul. Its growing vulnerable population reflects the intersection of global challenges, such as climate change, and local challenges, such as urban poverty and a rising refugee population.

Climate-related supply shocks are contributing to rising food prices, undermining the affordability and availability of nutritious foods in urban areas.

Low-income households, especially refugees, are particularly vulnerable. Food insecurity is higher among these groups due to limited employment opportunities, language barriers, and larger family sizes with a high number of dependents.



STAKEHOLDERS & PROCESS

Through this case study, Bahçeşehir University's Research Center for Sustainable Food Systems (BAU-SÜGAM) will build local knowledge on climate change impacts on agri-business, raising awareness on new crop patterns, technologies, and climate-smart agriculture adaptation.

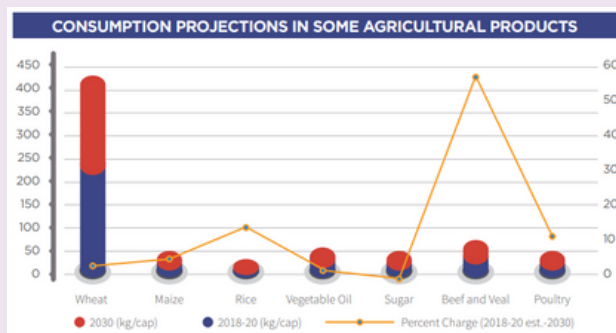
The team will also build local knowledge on nutrition security, focusing on the refugee population, one of the most vulnerable groups in Istanbul.

Methods in this case study

- Conduct interviews with agri-business actors.
- Use the collected data to explore scenarios on the climate impact through the FABLE Calculator.
- Develop pilot scenarios against the possible impacts of climate change
- Determine food system sustainability indicators.
- Collect data on food habits, barriers, needs, food prices, and dietary patterns
- Document traditional food consumption patterns of vulnerable groups.

Stakeholder groups

- İstanbul Metropolitan Municipality.
- NGOs and civil society groups.
- International Organizations.
- The Ministry of Agriculture and Forestry.
- The General Directorate of Meteorology.
- TARSİM (Agricultural Insurance Pool).
- The Ministry of Environment, Urbanization, and Climate Change.
- The Turkish Statistical Institute (TÜİK).



Source: OECD/FAO, 2021

IMPACT

1. Policymakers and public institutions

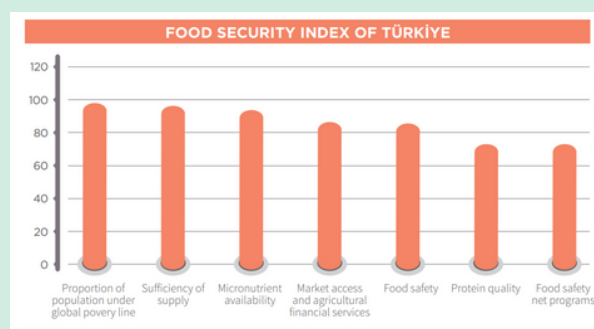
- Inform cross-sectoral policy design and demonstrate the need to connect climate-resilient agriculture with social protection and urban food systems.
- Support targeted investments, helping to prioritize where and how to invest in climate-smart agriculture and food access for the vulnerable.
- Improve preparedness by providing a framework for anticipating how rural climate shocks affect urban food security.

2. Farmers and agri-business

- Highlight their role in national food and nutrition security, beyond just production.
- Advocate for supportive climate adaptation programs that consider downstream urban impacts—strengthening their case for subsidies, water rights, or insurance.
- Encourage partnerships with urban actors for direct food access programs.

3. Low-income groups & refugees

- Integrates their needs into national climate and food planning, highlighting their vulnerabilities to shape inclusive policies, enhance food access, and inform subsidies and social protection measures.



Source: Türkiye's Ministry of Agriculture and Forestry (2021).

The Türkiye case study is led by BAU-SÜGAM. To get involved, contact Dr. Müge KESİCİ BAYSOY <muge.kesici@bau.edu.tr>.

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