



IMPACT OF CLIMATE CHANGE IN TURKEY: OBSERVATIONS AND PROJECTIONS

Dr. Öznur OĞUZ KUNTASAL

ENABLING ACTIVITIES FOR THE PREPARATION OF TURKEY'S SECOND NATIONAL COMMUNICATION TO THE UNFCCC

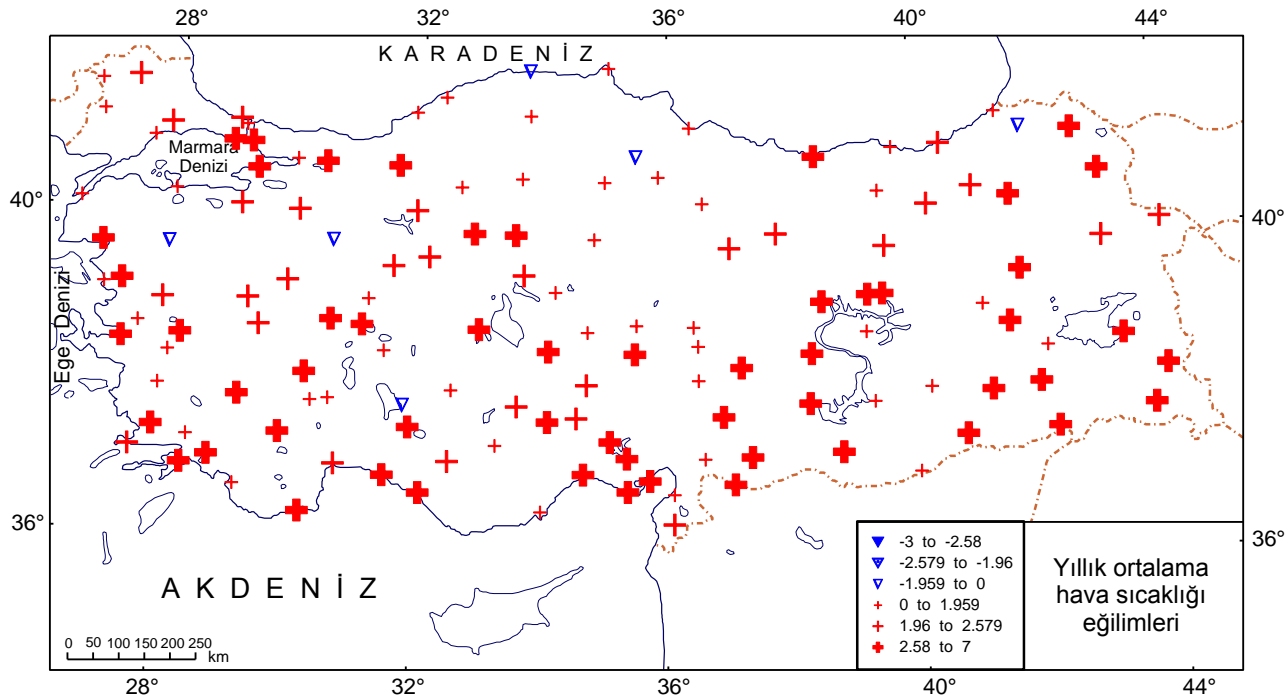


Impact, Vulnerability and Adaptation to Climate Change

- Climate Change Projections
- Water Resources
- Agriculture and Food Security
- Disasters
- Coastal Zones
- Ecosystem Services
- Health
- Settlements

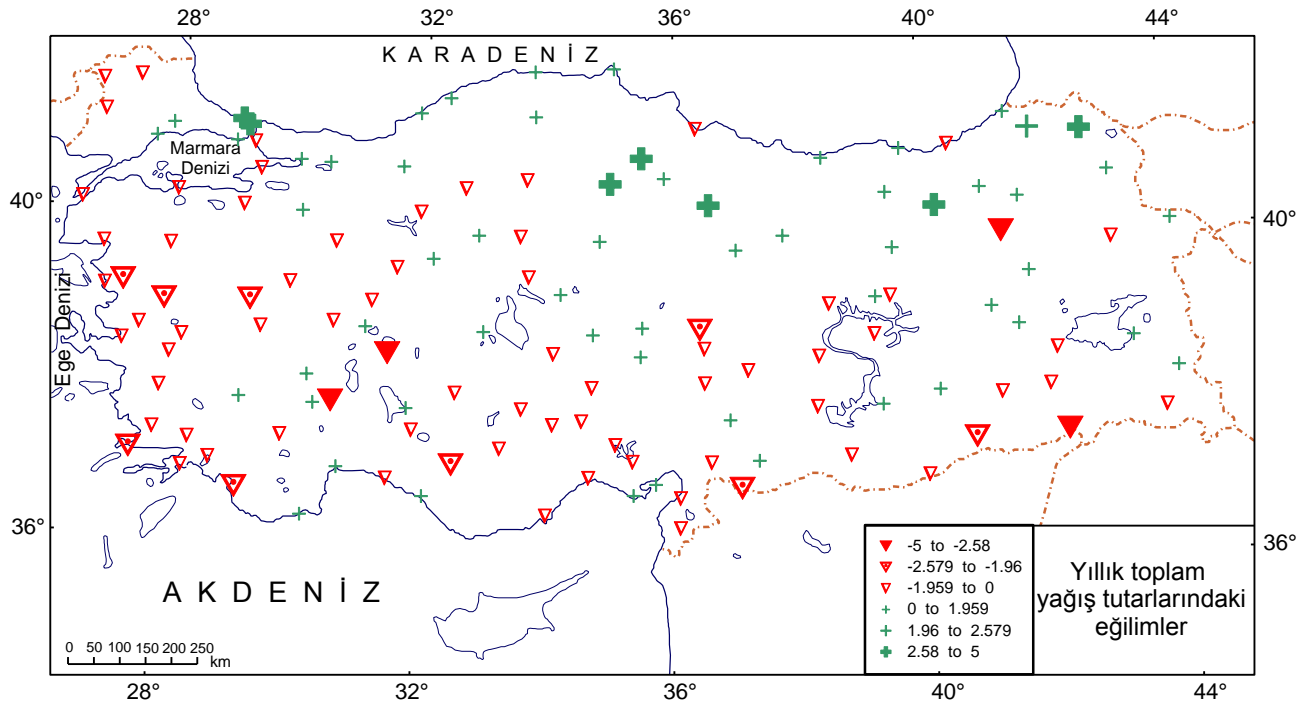
Observations

Temperature (1950-2010)



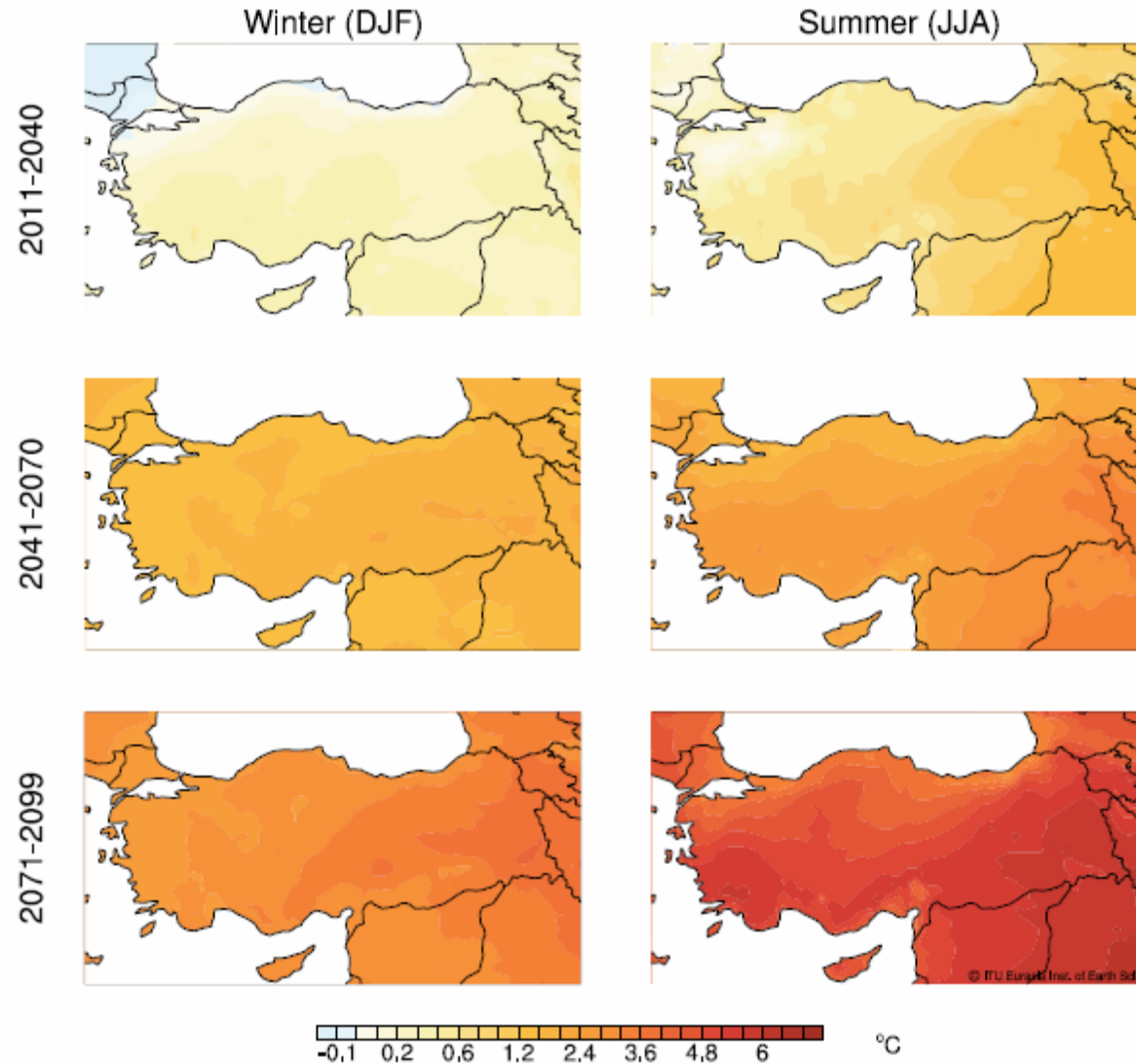
Observations

Precipitation (1950-2010)



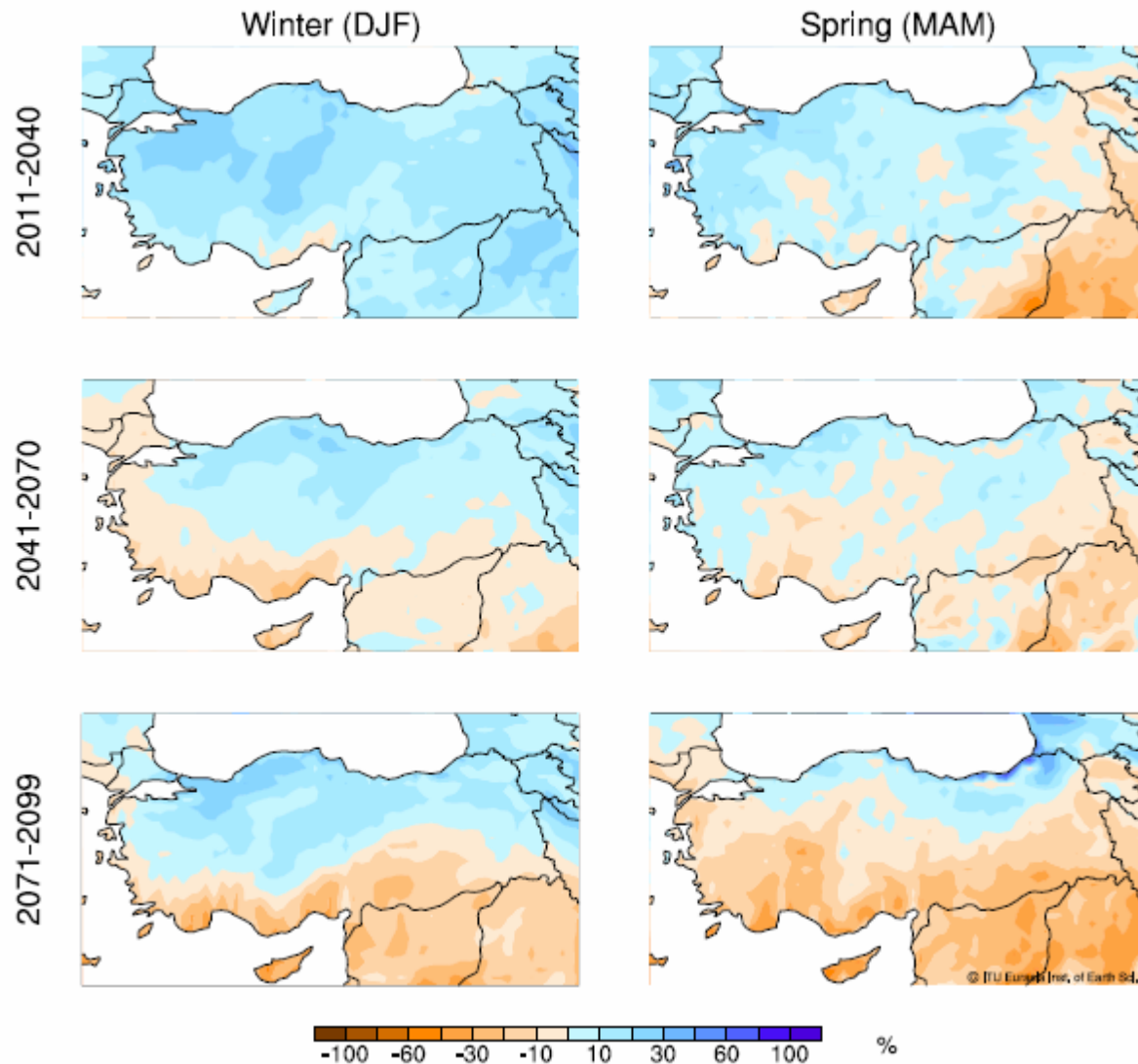
Projections

Temperature



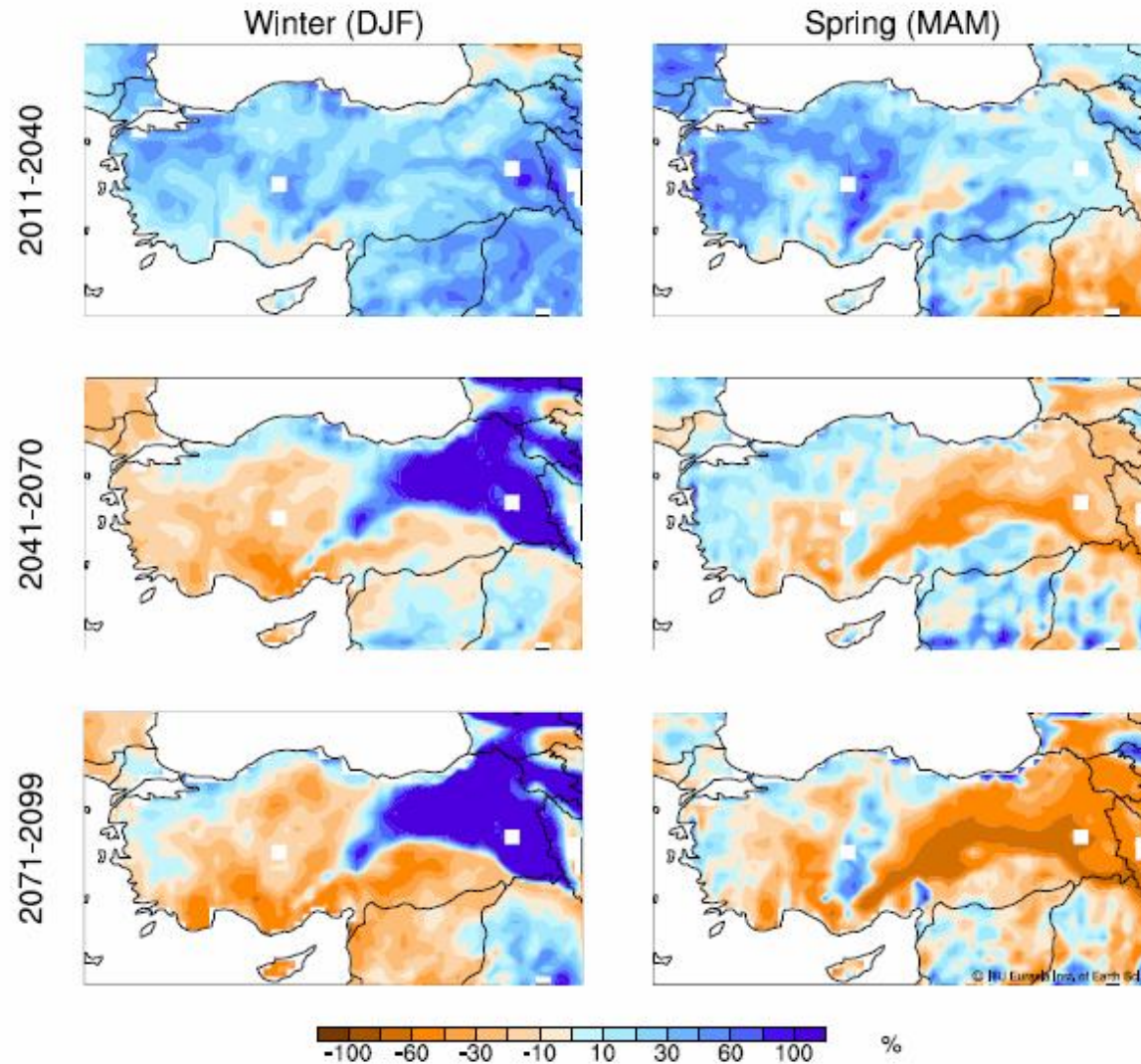
Projections

Precipitation



Projections

Surface Run-off



Impact on Water Resources

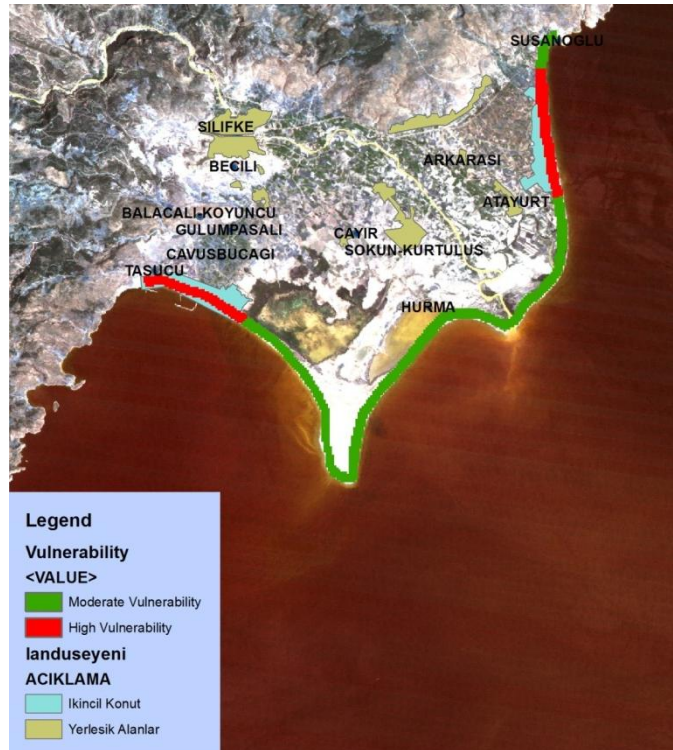


- Tahtalı and Gördes Dams: decrease in water amount is projected to be 0.7-1.0 million m³/month for Tahtalı and 1.1-1.4 million m³/month for Gordes Dams in the future. Total annual decrease in both dams is projected to be 28.8 million m³/year with the worst case scenario. (*Fistikoglu et al, 2011*)

Impact on Agriculture

- 34% of the population lives in rural areas
- Agriculture sector accounts for 9% of the GDP
- 80% of the cultivated land is non-irrigated
- Impacts on yield:
 - Shortened growth period
 - Short yield
 - Cultivation areas shift towards middle and northern areas
 - Change in production pattern
 - Decrease in yield
 - Decrease in production

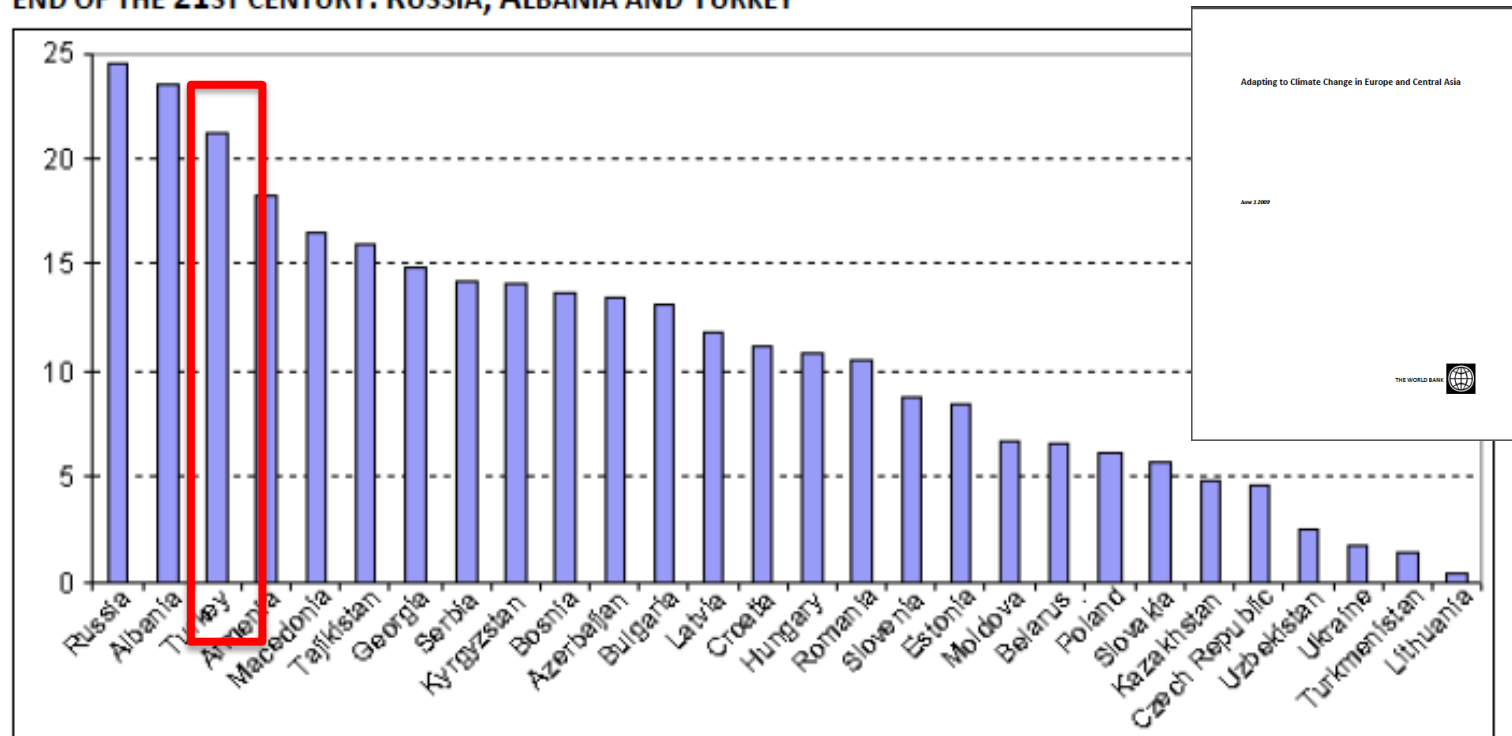
Impact on Coastal Zones



- Sea level rise
- Salt water intrusion
- Coastal erosion
- Socio-economic impacts

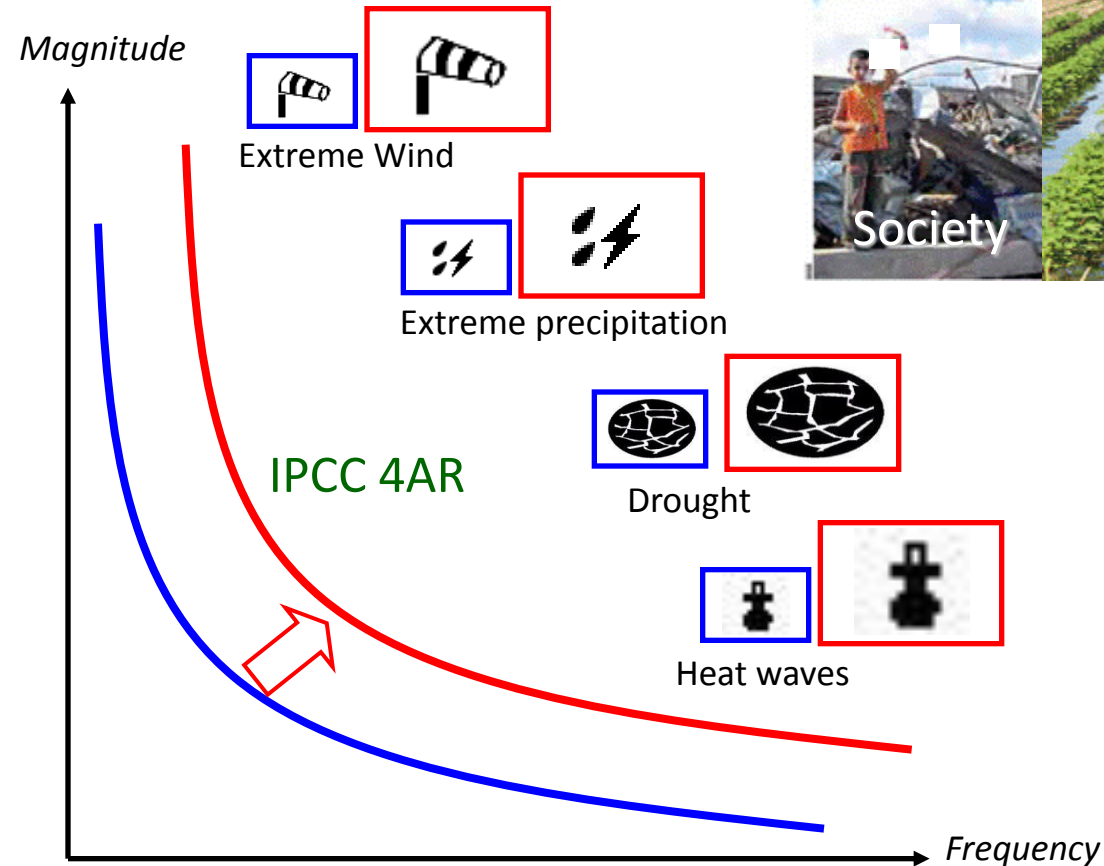
Impact on Disasters

FIGURE ES.1 ECA COUNTRIES LIKELY TO EXPERIENCE THE GREATEST INCREASES IN CLIMATE EXTREMES BY THE END OF THE 21ST CENTURY: RUSSIA, ALBANIA AND TURKEY



Source: Baettig et al. (2007). *Notes:* The index combines the number of additional hot, dry and wet years; hot, dry and wet summers; and hot, dry and wet winters projected over the 2070–2100 period relative to the 1961–1990 period. As such, countries already experiencing substantial variability and extremes are less likely to rank highly on this index (e.g., India and the Czech Republic have about the same score).

Impact on Disasters



Impact on Ecosystem Services

Inland Water
Marine Ecosystem
Forests

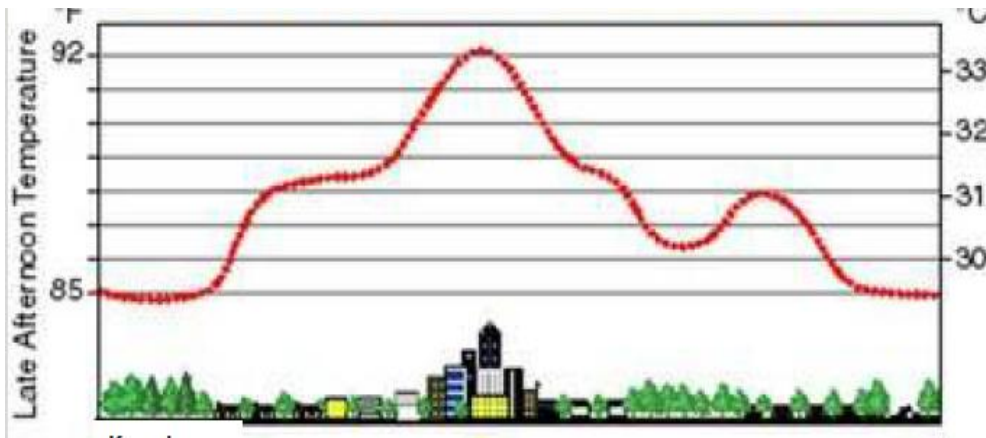


Impact on Health

- Turkey is a sensitive country against the health impacts of the climate change
- The most likely effects of climate change on human health are:
 - Death and disease from changes in extreme weather events
 - Cardio respiratory diseases (including allergies) emerging as a result of climate change and urban air pollution
 - Diseases originating from vectors and rodents (Malaria, Leishmaniasis, Dengue; flea borne diseases)
 - Water and food borne diseases
 - Health problems like skin cancers and cataract from the interaction between stratospheric ozone depletion and climate change

Impact on Settlements

- 76% of the population lives in urban areas
- Resilient, low carbon cities are needed



THANK YOU.

oznur.oguzkuntasal@undp.org