**An Analysis of Regional Climate Change and Future Impacts**

**on the Eastern Mediterranean**

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The global average temperature reached an increase about 1.1° C above the pre-industrial (1850-1900) level. Extreme climate events such as droughts, floods, and number of heat waves have been increasing particularly in the Northern Hemisphere due to having larger land size compared to Southern Hemisphere. These extreme events increase concerns on safety and well being of the citizens in turn increasing the demand by policy makers, and the public for realistic projections of regional impacts of future climate change.

This study presents specific future climate scenarios for the region from the Caspian Sea to Italy in east-west direction and from Egypt to Ukraine in south-north direction, centered in the eastern Mediterranean Sea. The Mediterranean Region is one of most vulnerable regions than rest of the World, especially the eastern parts. According to worst case scenarios, climate simulations project a 3-5° C increase, almost a 30 percent decrease in total precipitation, and 10 to 30 cm increase in sea-level in this region. In coastal areas of the region, highly affected land types are permanent wetlands, croplands and grassland. All countries in the region are under water stress due to fluctuations in the amount of available water which varies between 1000 to 2000 m³ a year. This is projected to be reduced to less than 1000 m³ by the end of this century in most of the affected countries. In addition to these, number of hydrometeorological disasters will increase in their magnitude and frequency. This will affect drastically regional economy such as tourism and agriculture, and other vital sectors in the eastern Mediterranean. Most pronounced dry summers will be predicted in the second part of this century. This means that the region will suffer even worse water supply shortages in future.