



CLIMATE-CHANGE IMPACTS ON ISRAEL AND THE MIDDLE EAST

Climate-Change Forecasts for the Year 2100

- * Mean temperature increase of between 1.6° and 1.8° Celsius.
- * Reduction in precipitation between 4 and 8 percent; increased rain intensity; and changes in rainfall patterns.
- * Increase in evapotranspiration by nearly 10 percent.
- * Greater seasonal temperature variability.
- * More severe weather events, such as droughts and floods.
- * Mediterranean biomes expected to shift 300 to 500 km northward; if a 1.5° C warming were to occur, which could mean that Mediterranean ecosystems in Israel, the Palestinian Authority and Jordan would become more desert-like.
- * Some models predict as much as a 50 percent reduction in mean annual precipitation in the Jordan River Basin.

Environmental Effects of Climate Change on the Middle East

- * Severe water shortages.
- * More severe weather events, such as droughts and floods.
- * Desertification, loss of arable land.
- * Shifting of ecosystems, species loss.
- * Coral reef bleaching.
- * Increase in jellyfish population.

Socioeconomic Effects of Climate Change on Middle East

- * Severe water shortages.
- * Agricultural losses.
- * Migration in search of resources.



- * Refugees from inundated lands.
- * Economic crisis

Political Ramifications

- * Increased tension between countries sharing water resources.
- * Difficulties for governments to provide for their country's needs, leading to internal instability and a likelihood of failed states.
- * "Exacerbated marginal living conditions foster extremist and radical ideologies and conflicts." – U.S. Army Gen. Anthony Zinni

Security Implications

- * Fewer water resources available for existing peace agreements.
 - o More difficult to comply with Jordan River water sharing arrangement (50 mcm/pa).
 - o More difficult to comply with Yarmouk River water-sharing arrangements (27 mcm/pa).
 - o Palestinian future needs recognized as 70 to 80 mcm/pa. In a final agreement, Palestinian demands will be higher.
- * Fewer water resources available for future agreements.
 - o Lebanon will want to share water from the Jordan River tributaries.
 - o Syria will want to share water from the Jordan River and sources of the Sea of Galilee.
- * Less rainfall impacts the economy.
 - o Palestinian Authority economy heavily dependent on rain-fed agriculture for income and employment.
 - o Jordan Valley bread basket of Jordanian food production and rural support backbone of Kingdom's political stability.
 - o Israeli agricultural lobby powerful across political divide.
- * Rising sea levels will impact the coastal aquifer beneath Israel and the Palestinian Authority.
 - o Further increase salinity of drinking water for Gaza.
 - o Further contamination of the coastal aquifer.