



# Climate change impacts on the agricultural sector in the Arab region

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The Arab region is one of the most water scarce regions in the world with more than 80% of its surface covered by deserts. Climate change projections for the Arab region are predicting a significant rainfall decrease and an increase of temperatures, which will lead to profound, non-linear effects on productivity. In this region as well as in different parts of the world, agriculture is one of the most vulnerable of all human activities to weather and climate variability. Any change in temperature, precipitation, soil moisture, carbon dioxide levels, and disease and pests (themselves largely climate-dependent) will have negative impacts on agricultural production in the region.

The IPCC Special report on Global Warming of 1.5°C stated, "Human activities are estimated to have caused approximately 1.0°C of global warming above pre-industrial levels, with a likely range of 0.8°C to 1.2°C. Global warming is likely to reach 1.5°C between 2030 and 2052 if it continues to increase at the current rate (high confidence)" and that some regions have already crossed the warming threshold of 1.5°C. The Arab region is one of the areas where temperature has already increased by more than 1.5°C above pre-industrial levels. It emerges also as one of the hotspots for worsening extreme heat, drought and aridity conditions under climate change.

The agricultural sector in the Arab region, of which 70% is rain-fed, is highly exposed to changing climatic conditions. Impacts will be high in a 2°C world, as the annual water

discharge for example, already critically low, is projected to drop by another 15%–45% (75% in a 4°C world) and unusual heat extremes projected to affect about one-third of the land area with likely consequences for local food production. The climate conditions projected in the future under different scenarios are unfavorable to grow staple crops to ensure food for a projected increased population that may double by 2070 in the Arab region.

*Key messages:*

- Human activities have already caused approximately 1.0°C of global warming above pre-industrial levels.
- Temperature in the Arab region has already increased by more than 1.5°C and, as consequence of this regional warming, many sectors including agriculture have already been impacted negatively.
- Future increase in temperature and decrease in rainfall in the Arab region is expected to shorten the growing season and to decrease production of some staple crops including winter wheat and barley.
- Extreme events such as extreme heat and drought are also expected to have negative impacts on food production which will exacerbate the region's vulnerability and its dependence on import to secure food for a growing population.