

Testing adaptation measures to reduce impact of climate change on agriculture production in Jordan

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Global climate change will affect crop production worldwide, especially in arid areas with scarce water resources. Jordan is a vulnerable country in terms of climate change impact. Jordan will suffer from reduced agricultural productivity due to more erratic rainfall patterns, reduced freshwater resources and increased temperatures. The Third National Communication (TNC) to the United Nations Framework Convention to Climate Change (UNFCCC) foresees that over the next three decades, Jordan will witness a rise in temperature, drop in rainfall, reduced ground cover, reduced water availability, heat-waves, and more frequent dust storms.

The most probable scenario would be an increased air temperature of 1.5° C and 16% decrease in precipitation by 2050. The trends of decreased rainfall and increased temperature are expected to reduce crop yield and thus increase the vulnerability. The anticipated increase in temperature and decrease in precipitation would adversely affect crops and water availability, critically influencing the patterns of future agricultural production. The anticipated increase in temperature and decrease in precipitation in 2030 and 2050 would result in yield reduction for major field crops and vegetable crops.

This increase in temperature will decrease the yield by 15-20% and decrease the planted area by 25%. Some of the tested adaptation measures included the improvement of soil water harvesting techniques; the implementation of sustainable soil and land management; crop residues management; the selection of drought-tolerant crop varieties and changing sowing dates. Those measures helped in reducing the impact of climate change on the crop productivity by 35% for field and vegetable crops.