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Assessing the vulnerability of Egyptian agriculture to climate change

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Egypt is one of the most vulnerable countries to the potential impacts and risks of climate change. Climate change may play an even more prominent role in the coming decades. Poor farmers are especially vulnerable to these impacts of climate change because of their geographic exposure, low incomes and greater reliance on agriculture as well as their limited capacity to seek alternative livelihoods. The vulnerability and impacts may arise from the anticipated climate change are diverse. However, we will concentrate on the most important ones as follows: (1) Crop productivity: Reduction in the productivity of major crops in Egypt from 1.53 to 47% by 2050; (2) Crop-water requirements: Crop-water stress and crop water requirements of the important strategic crops in Egypt are expected to increase by a range of 6% to 16% by 2100; and (3) Sea level rise and soil degradation: The inundation and salinization of the most fertile arable land in the Nile delta as a result of sea level rise and salt water intrusion; the effects of extreme weather events on agriculture, looking at examples from the recent past and to future projections. Extreme weather events include spells of very high temperature, torrential rains and droughts. Extreme weather events, which occur in every agricultural region, cause severe crop reduction of wheat production by 12% in year 2010, recent climate trends and extreme weather events may be directly and indirectly contributing to the increased pest damage. Adaptation is a key factor that will shape the future severity of climate change impacts on food production.

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