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Climate Risk assessment and management in rainfed agriculture areas in Jordan

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Agricultural production is closely tied to climate, making agriculture one of the most climate-sensitive of all economic sectors. Figures and data from official resources and previous studies demonstrated that most of agricultural areas in Jordan were rainfed which made agriculture in the country more susceptible to climate change. The percentage of harvested to cultivated areas in those areas over the past ten years ranged from 45-55%, indicating a high risk associated with rainfed agriculture in Jordan.
The anticipated increase in temperature and decrease in precipitation would adversely affect crops and water availability, critically influencing the patterns of future agricultural production, threatens livelihoods and keeps vulnerable people insecure. The anticipated increase in temperature and decrease in precipitation would result in 15-20% yield reduction for major field crops and vegetable crops by 2050 and 2070.
This study was conducted to help in formulating action plans to adapt to climate change by assessing the risk from climate change on rainfed agriculture.
The scenarios of climate change were used to assess the impact of climate change on rainfed agriculture. The overall risk level was based on possible land use shifts and crop yield under the most probable climate change scenarios. Accordingly, adaptive measures were proposed to reduce the impacts of climate change on agriculture in Jordan.
The adaptation measures included the improvement of soil water storage to maximize plant water availability, the management of crop residue and tillage to conserve soil and water, the selection of drought-tolerant crop varieties, the expansion of water harvesting schemes through encouraging the farmers to adopt and apply the in-situ water harvesting systems (micro-catchment).
Finally, the study emphasized the need for capacity building and awareness creation at the levels of farmers and extension staff. This would require the formulation of plans and strategies to support services that would promote adoption and adaptation. The empowerment of farmer service centers to provide technical advice and information on viable adaptation options would be needed. This also would require the development of micro-credit/revolving grants to farmers to apply the developed adaptation systems.