Agriculture in a changing climate: impacts and adaptation

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Abstract
This chapter deals with sensitivities, adaptive capacity and vulnerability of agriculture to climate change. It covers: the direct and indirect effects of changes in climate and atmospheric constituents on crop yield, soils, agricultural pests, and livestock; estimates of yield and production changes for specific localities, countries, and the world; the conditions that determine vulnerability; and adaptation potential.

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What are the Agricultural Impacts and Tradeoffs? • The net effect of climate change on world agriculture is likely to be negative. Although some regions and crops will benefit, most will not. In agriculture, adaptation will require cost-effective investments in water infrastructure, emergency preparation for and response to extreme weather events, development of resilient crop varieties that tolerate temperature and precipitation stresses, and new or improved land use and management practices. Biographies of Speakers. Tools for Adaptation. Dr. Paul Gepts. • Crop breeding for development of new climate tolerant crop varieties is a key tool for adapting agriculture to a changing climate. Participatory research into climate change adaptation options can help agricultural decision makers realize that acting on the existing trends in climate now is likely to be to their advantage (e.g., ref. 18). For example, in northeast Australia, crop management that has continuously adjusted to the progressive reduction in frost risk experienced over the past several decades can almost double gross margins when compared with management based on either the long-term risk or management that does not consider frost risk (19). For example, in a modeling study for Modena, Italy (23), simple and feasible adaptations altered significant negative impacts on sorghum (−48% to −58%) to neutral to marginally positive ones (0 to +12%). Climate change adaptation and mitigation through urban agriculture. 114 Pages·2008·4.53 MB·0 Downloads·New! Urban agriculture can help cities address climate change at the local level and prepare urban Till Agricultural Innovation for Climate Change Mitigation and Adaptation. 150 Pages·2017·1.83 MB·0 Downloads·New! Niles, Meredith T., "Agricultural Innovation for Climate Change Mitigation and Adaptation. Climate Change Impacts, Adaptation and Mitigation in Tanzania. 103 Pages·2010·1.28 MB·4 Downloads. Adaptation and Mitigation Strategies and Participation in Climate Change Initiatives ..