1. Record Nr. UNINA9910557105003321

Autore	McCarl Bruce A
Titolo	Climate Change in Complex Systems : Effects, Adaptations, and Policy Considerations for Agriculture and Ecosystems
Pubbl/distr/stampa	Basel, Switzerland, : MDPI - Multidisciplinary Digital Publishing Institute, 2020
Descrizione fisica	1 electronic resource (146 p.)
Soggetti	Research & information: general Biology, life sciences Technology, engineering, agriculture
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Sommario/riassunto	Climate change is altering agricultural production and ecosystems around the world. Future projections indicate that additional change is expected in the coming decades, forcing individuals and communities to respond and adapt. Frequently, agriculture and ecosystems are seen as separate entities, resulting in entity-specific solutions in response to threats. Anthropogenic climate change simultaneously stresses both agriculture and ecosystems (AE) along with their interactions, and current research efforts examining climate change effects and possible adaptations fail to integrate agriculture and ecosystems. Research has quantified many AE impacts of climate change, and yet greater impacts are anticipated as climate change proceeds. Thus, an understanding of the implications for changing AE systems is crucial. AE function, health and productivity depend heavily on climatic characteristics. Failure to jointly consider these systems and the associated externalities may underestimate the impacts of climate change or cause adaptation implementation surprises such as the worsening of the adaptation status of some groups or ecosystems. This collection of papers draws on specific studies to explain why ecosystem and agriculture adaptation requires an integrated analytical approach. A synthesis of current literature is used, as well as examples from around the world to

help explain concepts and current challenges. Researchers are encouraged to adopt integrated modeling as a means of avoiding implementation challenges and surprises when formulating and implementing adaptations. Failure to incorporate the overlapping effects of agriculture and ecosystems could lead to maladaptation and greater long-term damage under climate change. The papers in this volume address several aspects of these challenges.