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Review

Climate and environmental change in arid Central Asia: Impacts, vulnerability, and adaptations

E. Lioubimtseva ^a ... G.M. Henebry ^b

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Abstract

Vulnerability to climate change and other hazards constitutes a critical set of interactions between society and environment. As transitional economies emerging from the collapse of the Soviet Union, the republics of Central Asia are particularly vulnerable due to (1) physical geography (which dominated by temperate deserts and semi-deserts), (2) relative underdevelopment resulting from an economic focus on monoculture agricultural exports before 1991, and (3) traumatic social, economic, institutional upheavals following independence. Aridity is expected to increase across the entire Central Asian region, but especially in the western parts of Turkmenistan, Uzbekistan, and Kazakhstan. Temperature increases are projected to be particularly high in summer and fall, accompanied by decreases in precipitation. We examine the concepts of

vulnerability, adaptation, and mitigation in the context of climate change in Central Asia. We explore three major aspects of human vulnerability—“food security, water stress, and human health”—and propose a set of indicators suitable for their assessment. Non-climatic stresses are likely to increase regional vulnerability to climate change and reduce adaptive capacity due to resource deployment to competing needs.



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Keywords

Climate change scenarios; Food security; Former USSR; Land use; Sustainability; Vector-borne diseases; Water resources

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The post-Soviet decline of Central Asia: sustainable development and comprehensive capital, evaporation, as it may seem paradoxical, scales the object.

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