

IMPACT OF ROGUN DAM ON DOWNSTREAM UZBEKISTAN AGRICULTURE

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ABSTRACT

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Impact of Rogun Dam on Downstream Uzbekistan Agriculture. Major Professor:
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Strains among the states of Central Asia caused by overuse of the region's scarce water resources have been increasing in recent years. This is especially true for the relations between Tajikistan, upstream, and Uzbekistan, downstream, on the Amudarya River. Major controversy exists over constructing Rogun Dam on the Vakhsh River, a tributary of the Amudarya River. Construction of Rogun Dam, with a planned height of 335 m (1099 ft), began in 1976 but was stopped in 1991 with the breakup of the former Soviet Union. The intent of this dam is to supply Tajikistan with energy, but a side effect will be the changed flow regime of the Amudarya River to downstream states (especially Uzbekistan). The major impact will be on the agricultural sector of Uzbekistan. The objectives of this study are to estimate the monetary impacts of Rogun Dam and propose mitigation measures to minimize impacts. The study investigates the nature and extent of those impacts and indicates policy implications to mitigate negative consequences of the possible water shortage in summer by assessing the baseline situation and comparing that situation with future status-quo (no changes) level of water. Future water shortage could cost Uzbekistan annually over US \$609 million economic loss in agriculture, reduce the country's GDP by 2.2%, and result in 336,000 unemployed people. If Uzbekistan changes its present water use practice and increases water use efficiency, the future water shortage during irrigation periods will not as seriously affect the country's economy, as adaptive management measures could cut the losses by 40%.