



Adaptation to climate change to reduce the intensity of transboundary river disputes in the Indian subcontinent

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Changing climate and rising water demands make management of transboundary river basins that cover 90% of India a challenging issue. Water disputes have halted development activities for decades, affecting the national economy, food security and life of the millions depending on agriculture. Though India faces problems both at the domestic and international levels, the domestic disputes are more difficult to solve because of social and political reasons. International disputes on Indus, Ganges and Brahmaputra rivers have led to better bilateral cooperation. However, tension is mounting over new development activities in the basins. Claims of the upper riparians and falling availability of reliable water due to changes in climate and anthropogenic activities lead to disputes over allocation. Disputes also arise due to environmental and safety issues and over rehabilitation. Increasing rainfall seasonality reduces pre-monsoon runoff in rivers and groundwater recharge. High seasonality and intensity of rainfall in the Western Ghats mountain region cause erosion of already degraded soil. Sedimentation affects river flow. Some of the major disputes are in this region. Retreat of the Himalayan glaciers, increasing demands of fast rising population, industrial development, rapid urbanisation, birth of new states and administrative divisions and the ongoing river linking project are likely to worsen the existing disputes and ignite new issues. Changing climate is always reflected on the disputes. The Cauvery river dispute, one among the oldest and most serious disputes in the world worsens when the monsoons fail. Constitutional limitations, vested political interests and weak and corrupt administration are hurdles in resolving disputes. Water-rich states always oppose constitutional amendments to bring all rivers under the control of Central Government. Opposition parties in states try to make political gains by creating an impression that ruling party is incapable of protecting state interests. National policies do not provide an amicable solution. To solve the issues, states should approach the problem with a positive attitude. There are options like joint investments in projects for agriculture and power generation so that changes in climate can be beneficially utilised. Wise and timely political decisions, better environmental protection measures, community management of water, self-regulation and recharge of groundwater etc can solve most of the issues. Better weather prediction and early warning system may help adaptation measures and reduce the intensity of disputes when the monsoons fail. This study analyses the major national and international issues associated with water in the transboundary basins of India. Current policies, treaties and strategies have been critically reviewed. Trends in disputes under an altered climate and change in water availability predicted by climate models have also been analysed. Existing policies and strategies are inefficient and their implementation often fails due to various socio-economic, political and environmental factors. Guidelines for a better water diplomacy and for the modification of existing policies and adaptation strategy have been provided.