

**INTERBASE TRANSFER OF WATER:  
ISSUES RELATED TO POLICY AND ECOLOGY**

**by**

**ASHWANI KUMAR PRADHAN**

**Department of Civil Engineering**

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## CERTIFICATE

This is to certify that the thesis entitled Interbasin Transfer of Water: Issues Related to Policy and Ecology being submitted by Ashwani Kumar Pradhan for the award of the Degree of Philosophy, is a record of bonafide research work carried out by him. Mr. Ashwani Kumar Pradhan has worked under my guidance and supervision for submission of this thesis, which to my knowledge, has reached the requisite standard. This thesis, or any part thereof, has not been submitted to any other University or Institute for the award of any degree or diploma.

*Rema devi*

Dr. (Mrs.) REMA DEVI

Professor

Department of Civil Engineering  
Indian Institute of Technology Delhi  
New Delhi

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(A.K. Pradhan)

## ABSTRACT

Water, an essential requirement for all life on this planet also serves as a socioeconomic good for human kind. Societal demands on water are functions of the requirements under various user sectors, sovereignty, political and administrative status and setup, the level of socioeconomic progress and most importantly, of the then perception of the directly involved society. All these factors keep changing and from time to time there is a need to review and modify the vision/policies/ guidelines/ operational and management policies and practices.

Unevenness in the distribution of water by nature may be offset to a great extent by interbasin transfer. One of the major issues related to such transfers is ecology related, but it is yet to find a formal place in the scheme of things. However, in some of the cases, it may have been considered.

The study is focussed on two aspects of interbasin/ interstate water transfer: the drawbacks in general in view of the changing social perceptions and a case study to assess the extent of risk to the likely abiotic character of a wetland of national significance.

Provisions in a number of interbasin transfer projects have been critically analysed and also international guidelines on interbasin transfer of water have

been examined - The cases so studied include Helsinki Treaty, Indus Commission Report, Godavari Award, Krishna Award, Cauvery Dispute and also constitutional provisions on sharing of water.

Based on some of the drawbacks of the present provisions and policies as identified in the present study, a case of inter basin transfer has been analysed to assess some of the impacts of the drawbacks in the context of environmental hydrology.

The case study taken up in this context is that of the Narmada project in the context of Nalsarovar, a protected wetland of national significance. The Narmada, Project, to which four states of India, namely, Madhya Pradesh, Rajasthan, Gujarat and Maharashtra are parties, has been in the eye of many a storm, economic, environmental and political.

Remote sensing techniques are used to assess the areal extent of the wetland in the three significant seasons of the year. Multispectral and PAN images have been merged to obtain better spatial and spectral resolution. Primary data has been collected on some of the significant chemical parameters of water quality, to understand the nutrient dynamics of the wetland. Also, a sample social survey has been conducted to decipher the impact, if any, of landuse on the water quality.

The ecological survey done by GEER (1998) has been extensively used to understand the community in the wetland ecosystem and to link the primary data on water quality to the basic characteristics of the wetland.

In short, the present study analyses the case of a wetland in the context of interbasin transfer and a practically translatable methodology has been worked out through a case study.

The results of the study indicate that the ecology of the wetland may get affected in case of a breach/ pump failure in the linking unit namely the Saurashtra Branch Canal of the interbasin water transfer project. An important point that has wider ramifications is that to maintain the prevailing ecosystem of a wetland, the nutrient dynamics of the wetland has to be understood. Further, in some cases addition of water may disturb the existing equilibrium and set in stages of succession in the wetland community.

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