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REVIEW ARTICLE

ROLE OF PROPOSED INTER-BASIN WATER TRANSFER PROJECTS IN DROUGHT  
AND FLOOD MANAGEMENT

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ABSTRACT

Monsoon is an annually recurring weather phenomenon due to variations in precipitation. Some regions in India receive very large monsoon precipitation causing floods and some parts are facing water scarcity problems due to low precipitation resulting in droughts condition. Almost half of the world's population lives in areas affected by the monsoons of Asia and most of these people are farmers, so the coming and goings of the monsoon are vital to their livelihood to grow food to feed them. Ministry of Water Resources and the Central Water Commission formulated a number of inter-basin water transfer links under a National Perspective Plan (NPP) in 1980, to overcome the problems of flood and drought. The purpose of the inter-basin water transfer links is to transfer surplus water from surplus regions to deficit regions which will help in minimizing the problem of flood and drought in India.

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INTRODUCTION

Lack of competent management of the available water resources resulting in water crises, which is effecting billions of people and deteriorating the environment. Monsoon is a seasonal change in atmospheric circulation and precipitation, which occurs when the temperature on land is significantly warmer or cooler than the temperature of the ocean. The major monsoon systems of the world consist of the West African and Asia-Australian monsoons. The Indian Monsoon Current refers to the seasonally varying ocean current found in the tropical regions of the Northern Ocean. Usually, the term monsoon is used to refer the rainy phase, but it is also a dry phase. The distribution of precipitation in India is characterized by a large regional variation WWC, (2000). Drought and Floods are two major water problems of the country. Flood and Drought condition generally happens due to low and high precipitation. It is an overflow of water that submerges land which is usually dry and one of the most destructive forces in nature. Flood and drought happens due to changing weather patterns. In India flood prone areas are West Bengal, Orissa, Andhra, Kerala, Assam, Bihar, Gujarat, Uttar Pradesh, Haryana and Punjab. Whereas drought is a deficiency in water supply that affects water availability and water quality. In India large parts of Haryana, Maharashtra, Andhra Pradesh,

Rajasthan, Gujarat, Madhya Pradesh, Karnataka and Tamil Nadu are not only deficit in rainfall but also subject to large variations, resulting in frequent droughts Rao, *et al.* (2010). Many researchers gave the concept of Inter-Basin water transfer to continuously meet the water requirements and future water demand. Primarily, Inter-Basin water transfer concept was given by Rao and Dastur in 1970s Bandyopadhyaya, and Perveen (2003). Ultimately as a consequence of variations in different river basins and to mitigate the major problems of flood and drought, a National Perspective Plan (NPP) was formulated by the Ministry of Water Resources in the year 1980 and The National Water Development Agency (NWDA) was set up in 1982, to carry out studies on water resource management. NWDA has proposed several inter-basin transfer schemes named "Interlinking of rivers (ILR)" which is referred to as 'inter-basin transfers'; and it means water transfer from 'surplus' areas to 'deficit' areas. The NWDA of India has identified 30 Himalayan and peninsular rivers for such inter-basin water transfers and proposed about 14 links for the Himalayan Rivers and 16 links for the peninsular rivers under the proposed ILR project. ILR is a welcome step for our nation, a good concept for increasing water availability, which will help in reducing the problem of water scarcity in different river basins. It is a very ambitious plan of GOI Government of India to meet the objectives of transferring surplus water from northern rivers to water deficit regions of southern and western part of India to tackle the twin problem of flood and drought to ensure Sustainable Flood plain Management. Inter-linking of rivers may solve the water related problems of the country like ways to conserve water such as rainwater harvesting, water

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reuse, watershed management and regulating the exploitation of underground water resources. Some other benefits may be agricultural benefits, generation of electricity and deforestation along river banks, ecological conservation and social acceptance.

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