

RISK MANAGEMENT FOR KOSI RIVER SYSTEM FOR MITIGATING THE FLOOD AND UTILIZATION OF ITS WATER RESOURCES

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ABSTRACT

Bihar is India's most flood-prone State, with 76 percent of the population, in the north Bihar living under the recurring threat of flood devastation. About 68800 sq km out of total geographical area of 94160 sq km comprising 73.06 percent is flood affected.

The plains of Bihar, adjoining Nepal, are drained by a number of rivers that have their catchments in the steep and geologically nascent Himalayas. Kosi, Gandak, Burhi Gandak, Bagmati, Kamla Balan, Mahananda and Adhwara Group of rivers originates in Nepal, carry high discharge and very high sediment load and drops it down in the plains of Bihar. About 65% of catchments area of these rivers falls in Nepal/Tibet and only 35% of catchments area lies in Bihar. Among all these rivers, River Kosi and its tributaries (called as Kosi river System) creates havoc nad wide spread damage to lives and properties every year. That is the reason, Kosi River System is called sorrow of Bihar. In the years 1978, 1987, 1998, 2004 and 2007, Kosi River System witnessed very high magnitudes of flood. The total area affected by floods has also increased during these years. Flood of 2004 demonstrates the severity of flood problem when a vast area of 23490 sq km was badly affected by the floods of Kosi River System

causing loss of about 800 human lives, even when Ganga, the master drain was flowing low. The Kosi flood of the year 2008 is not only historic, it is beyond the scope of imagination causing widespread loss of lives and properties. Over three million people were affected by the devastating Kosi deluge after an embankment on river Kosi breached near Kusaha in Nepal in August 2008. The Prime Minister of India has described the Kosi flood of 2008 as a National Disaster.

No one can claim to possess a readymade solution to the perennial Kosi problem. The Kosi river, which changed its course and washed away the homes and livelihoods of nearly 15 million people in Bihar, reinforces the need for effective risk management for water resources of Kosi River System on a priority basis. In this paper variability of hydro-meteorological, socio-economical, agricultural data of the watershed of the river system with change of climate and political culture, variability of geomorphological and avulsion nature of the stream of the river system with change of climate and economic development, variability of administrative mechanism with change in socio-political changes have been analysed and a frame work for risk management for mitigating flood in the tributaries of the Kosi River System and have been suggested.