

## Role and Challenges of Institutional Mechanisms for Flood Control in Transboundary Rivers: A Case of Koshi River in Nepal and India

○Suchana ACHARYA, Tomoharu HORI

Flood management in a transboundary river is a challenging task as it is influenced by the geopolitical and socio-economic scenario of the member states. This study aims to investigate the various aspects of the flood management process in the transboundary Koshi River between India and Nepal focusing on the institutional framework. Existing policies and institutional mechanism between Nepal and India on the management of Koshi River are analyzed. In reference to such policies and institutional mechanism, lack of proper co-ordination and complex organizational structure was identified as one of the major element that has hindered the effective flood management along with other few elements. Finally, based on the experiences of the transboundary river flood management around the world as well as considering the unique nature of Koshi, different key elements that might be helpful in improving the management of flood are discussed.

### 1. INTRODUCTION

Management of a transboundary River and its flood-related issues are one of the challenging tasks as it is influenced by geopolitical and socio-economic situation and hence demands a higher level of co-operation between the associated countries. In this regard, the Koshi River which is shared by India and Nepal is one of the unique cases of a trans-boundary river which hasn't gained so much attention internationally. The livelihood of millions of people in Nepal and India depend on the Koshi River. However, in lack of proper management, people have suffered repeatedly due to several disasters in the past. In this context, this study aims to analyze the different institutional aspects of Koshi River management, analyze the technical and managerial cause of recent flood event, analyze Koshi treaty and current institutional mechanism and their shortcomings and finally propose the new institutional mechanisms to comprehend the unique and dynamic nature of Koshi River.

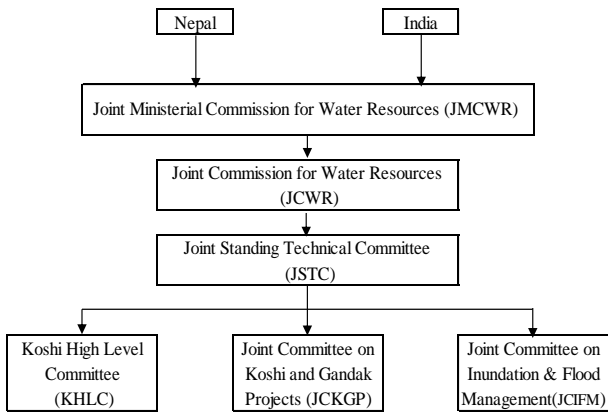
### 2. STUDY AREA

The Koshi River, which originates in the Tibet region of China, traverses Nepalese territory, crosses India and after flowing in the Indian Territory for about 200 km meets the Ganga River at the confluence of Kurusela in the state of Bihar, India.

### 3. EXISTING POLICIES AND ORGANIZATIONAL ARRANGEMENT

The Koshi treaty signed between India and Nepal in 1954 (and revised in 1966) forms a base for the setting up of a bilateral mechanism for overall management of Koshi River flood. The treaty on Koshi consigns the overall management (including the maintenance and repair) of the barrage and embankment (including in Nepalese territory) to the Government of India (GOI). Current policies and gaps are discussed below;

#### a) **Indo-Nepal Mechanisms for Bilateral Cooperation on the Koshi River**



**Fig.1:** Current Institutional framework between Nepal and India for the management of Koshi River

The governments of Nepal and India have set-up a three-tier bilateral mechanism to manage, discuss and coordinate on water sharing issues as illustrated in **Fig.1**. The management of the Koshi River is executed in accordance with the Koshi treaty under these mechanisms.

**b) Gaps in the current institutional mechanisms**

The major gaps in the current institutional mechanism are the lack of designation of clear roles and responsibilities as well as lack of proper co-ordination and timely communication. In addition to these gaps, the absence of common data sharing mechanism, regular joint monitoring, lack of flood management action plan, etc. are some of the other factors which might be responsible for the ineffective functioning of the current institutional mechanism.

**4. REVISITING INSTITUTIONAL MECHANISM**



**Fig.2:** Proposed mechanism for management of Koshi

Based on the gap in the organizational structure at present for the Koshi River, we highlight the need of improvement in some key elements that lie within the broader institutional framework of a transboundary river and flood management.

- i. Institutional Restructuring as shown in **Fig.2**
- ii. Data and Information Sharing
- iii. Integrated Flood Management Action Plan
- iv. Public Participation and Awareness

**5. CONCLUSIONS**

Of the many aspects on the management of Koshi River, the institutional mechanism is the pivotal one as it dictates all other direct and indirect actions that will be taken. It is evident, that the current provisions of the Koshi agreement and the complicated institutional set-up have hindered the proper management. In this regard, as a part of the broader institutional framework, various key components need to be reconsidered for the smooth and effective management of Koshi River floods. Thus it is recommended to restructure existing institutions with clearly defined roles and responsibilities and make the inter-linkage between them smooth and simple. Similarly, improvement in the data collection and sharing mechanism is sought for better understanding the river basin characteristics and conducting research work for formulating a future management plan. Development of integrated flood management action plan which considers the short-term and long-term actions for the reduction of flood risk should be immediately formulated. Involvement of local people and local authorities in the flood management process is a most for ensuring the ownership as well as the sustainability of the plan. Finally, awareness building and information sharing with the local level can also prove to be vital in the minimizing the risk of the flood disaster in the future.