

**PROJECT INFORMATION DOCUMENT (PID)  
APPRAISAL STAGE**

Report No.: PIDA191

<b>Project Name</b>	IN: BIHAR KOSI BASIN DEVELOPMENT PROJECT (P127725)
<b>Region</b>	SOUTH ASIA
<b>Country</b>	India
<b>Sector(s)</b>	General water, sanitation and flood protection sector (70%), General agriculture, fishing and forestry sector (30%)
<b>Theme(s)</b>	Natural disaster management (70%), Other rural development (30%)
<b>Lending Instrument</b>	Specific Investment Loan
<b>Project ID</b>	P127725
<b>Borrower(s)</b>	Department of Economic Affairs
<b>Implementing Agency</b>	Bihar Aapada Punarwas Evam Punarnirman Society (BAPEPS)
<b>Environmental Category</b>	A-Full Assessment
<b>Date PID Prepared/Updated</b>	01-May-2015
<b>Date PID Approved/Disclosed</b>	01-May-2015
<b>Estimated Date of Appraisal Completion</b>	24-Apr-2015
<b>Estimated Date of Board Approval</b>	05-Jun-2015
<b>Appraisal Review Decision (from Decision Note)</b>	

**I. Project Context**

**Country Context**

With a per capita income at a quarter of national average (US\$360, compared to US\$1,477 in India) and 103 million inhabitants, Bihar lags behind other Indian states in human and economic development. If Bihar were an independent country, it would have the 12th largest population in the world, but its GDP per capita would be the 9th lowest. The poverty rate is 56 percent among the rural population, one of the highest in the developing world. Literacy rates are at 73 percent among men and 53 percent among women, the lowest in India, compared to a national average of 82 percent and 65 percent, respectively.

The economy of Bihar is largely agrarian, with a significant agricultural base and a limited industrial sector. Agriculture and allied activities employ approximately 80 percent of Bihar's total labor force, but contribute only 20 percent of the State's GDP. The proportion of women working in agriculture is roughly 21 percent, one of the lowest rates in the country. Within India, Bihar is an important agricultural state: it accounts for 8-10 percent of national production, is the second largest

producer of vegetables, and is the third largest producer of fruits. However, agricultural productivity, cropping intensity, and access to markets are limited, evidenced by the fact that the average per worker income in Bihar's agriculture sector is one-half of the national average.

Bihar's weak economic and social performance is primarily due to a history of poor governance and a lack of investment in development. The population gradually diminished for decades due to out-migration, leaving a dearth of talent in the state. Insufficient government capacity and ineffective decision-making processes slowed infrastructure projects, leading to the erosion of the transport, power, health, and education sectors. Delivery of government services deteriorated, while crime and violence accelerated.

Governance has improved in recent years, which has led to an economic revival in the State. There has been increased investment in infrastructure, particularly in the transport network, and a reduction in crime and corruption. Whereas Bihar's growth rate in the 1990s was just over 2.5 percent (compared to 6 percent for India as a whole), growth since 2005 has increased at an estimated 11 percent, making it the fastest growing state in India during that period.

### **Sectoral and institutional Context**

Given its geography, Bihar is India's most flood-prone state, with 76 percent of the total population living under a recurring threat of floods. High discharge and sediment loads are carried downstream into Bihar along the Gandak and Kosi Rivers, and the area has recorded the highest number of floods in India during the last 30 years.

Floods occur across a number of basins, with the Kosi River Basin being one of the most active areas experiencing flooding. Compounding the flood hazard, the State government suffers from inadequate institutional capacity and technical expertise to effectively monitor the Kosi River and make investments in appropriate flood protection infrastructure, agricultural development programs, and improved road connectivity.

As a result of inadequate flood management systems in a hazard-prone area, the Kosi River breached a portion of the Kosi embankment system on August 18, 2008. It was not excessive rainfall that caused the breach; instead, lack of maintenance of the embankment system and inadequate monitoring of the River's behavior were the root causes of the embankment failure. The 2008 Kosi River Flood was declared a national calamity by the GoI and was then the worst flood disaster in the last 50 years in India. The breach affected over 3.3 million people and caused over US\$1.2 billion in damage. Floodwaters brought huge quantities of silt that settled across the Kosi River Basin, making agricultural recovery particularly challenging. According to the Post Disaster Needs Assessment, more than 330,000 houses, 1,800 km of paved and unpaved roads, and 1,100 bridges and culverts were damaged. Approximately 600,000 acres of crops were ruined, impacting close to 500,000 farmers.

Following the 2008 Kosi River Flood, the Government of Bihar (GoB) requested assistance from the Bank in two phases: (i) to address the short-term needs of the flood-affected population, and (ii) to tackle the longer-term challenges of enhancing capacity to manage floods and investing in economic development. As a result, the Bihar Kosi Flood Recovery Project (BKFRP, US\$170 million) was designed in consultation with the GoB and became effective in March 2011 to focus on the first phase. So far 25,000 out houses have been completed through owner driven construction;

and 62 out of 71 bridges, and 11 out of 37 roads have been completed to enhance connectivity. Kosi river flood management studies are also being undertaken along with restoration of flood channel works and embankment road improvement works by the line Departments and the Bihar Aapada Punarwas Evam Punarnirman Society (BAPEPS) responsible for implementing the BKFRP.

The proposed Bihar Kosi Basin Development Project (BKBDP) will focus on the second phase, tackling the longer-term challenges of enhancing capacity to manage floods and investing in economic development, through investments in flood management, agricultural productivity, and connectivity to improve farmer's access to markets, focusing on the flood affected districts of Araria, Madhepura, Purnea, Saharsa, and Supaul.

The agricultural sector in Bihar has suffered particularly from significant flood events, which have washed away standing crops across hundreds of thousands of hectares of land, destroyed livestock and deposited silt on fertile lands. The sector employs 82 percent of Bihar's population yet contributes only 22 percent of the state's GDP.

Bihar's vast stretches of fertile plains in northern India make it one of the country's most agriculturally abundant states. It is drained by the Ganges River, including the northern tributaries of the Gandak and Kosi Rivers that originate in the Nepali Himalayas and the Bagmati River, which originates in the Kathmandu Valley. Abundant water resources imply extremely high agricultural potential; however, output is low due to: (i) low access to and adoption of new farming and post-harvest technologies; (ii) poor seed and other input packages; (iii) antiquated land distribution regulations; (iv) low investment in irrigation; (v) deficient electricity generation and transmission; (vi) underdeveloped transportation facilities to bring crops to market, and (vii) poor implementation of state- and centrally-sponsored agricultural development programs. As a result, Bihar's annual agricultural GDP growth rate of 5.9 percent from 2006 to 2013 lagged the state's overall growth rate of 12 percent. The proposed project seeks to help the GoB address some of the long-term constraints to agriculture growth.

A series of parallel initiatives are also ongoing to improve GoB's technical capacity to manage floods and enhance agricultural output. These include the Ganges River Basin Project, the Ganges River Basin Study, the National Rural Livelihoods Project (Jeevika), and the Department for International Development (DfID)-funded Bihar Flood Management Implementation Support Project. Accompanying these efforts, the GoB has launched an Agricultural Road Map that outlines strategic investments in the agricultural sector over the next decade.

## **II. Proposed Development Objectives**

The project development objective is to enhance resilience to floods and increase agricultural production and productivity in the targeted districts in the Kosi River Basin, and to improve the Government of Bihar's capacity to respond promptly and effectively to an eligible crisis or emergency.

## **III. Project Description**

### **Component Name**

1. Improving Flood Risk Management

### **Comments (optional)**

Subcomponent 1.1 – Reinforcement of flood control infrastructure (US\$95 million with US\$63.33

million Bank Financing). That includes restoration/strengthening of Eastern and Western Kosi embankments, and strengthening existing spurs that are severely damaged, protecting critical erosion-prone river banks; and procurement of dredgers for management of silt deposits in the river system.

Subcomponent 1.2 – Support to strengthen institutional capacity to manage flood risk (US\$5 million with US\$ 3.33 million Bank Financing). Under this component the project will finance establishment of a Center of Excellence, procurement of Real Time Data Acquisition System (RTDAS) and institutional strengthening at Flood Management Information System (FMIS).

**Component Name**

2. Enhancing Agricultural Productivity and Competitiveness

**Comments (optional)**

Subcomponent 2.1 – Intensification and Diversification of Production Systems (Agricultural/Horticultural Crops) (US\$24 million, with US\$ 16 million Bank Financing)

Subcomponent 2.2 – Strengthening of Agricultural Value Chains (US\$15.0 million, with US\$10 million Bank Financing)

Subcomponent 2.3 – Institutional Development for Market-led Extension (US\$12 million, with US \$8.0 Bank Financing)

**Component Name**

3. Augmenting connectivity

**Comments (optional)**

Subcomponent 3.1 – Construction of roads (US\$80 million with US\$53.33 million Bank Financing). This subcomponent will finance the construction of linking roads to major roads and the upgrading of rural roads to provide small villages (population less than 500) greater access to local markets, about 400km.

Subcomponent 3.2 -Institutional strengthening activities at Rural Works Department will amount to US\$3.0 million (with US\$ 2.0 million Bank Financing) that will focus on the development of asset management and maintenance system, as well as a road maintenance strategy.

Subcomponent 3.3 – Construction of bridges (US\$90 million with US\$60.0 million Bank Financing). Subcomponent will finance the construction of around 58 small and medium bridges to provide greater access to local market.

**Component Name**

4. Contingency Emergency Response (US\$ 0 million)

**Comments (optional)**

Following an adverse natural event that causes a major natural disaster, the GoB may request the Bank to re-allocate project funds to support response and reconstruction. This component would draw resources from the unallocated expenditure category and/or allow the GoB to request the Bank to re-categorize and reallocate financing from other project components to partially cover emergency response and recovery costs.

**Component Name**

5. Implementation and Capacity Building support

**Comments (optional)**

This component (US\$27.0 million with US\$ 18.0 million Bank financing) would finance activities required for project implementation that would include incremental operating costs of BAPEPS and the Implementing Agencies(IA). These funds are available to BAPEPS and Project Implementations Units of the IAs to employ subject matter experts, consultants, safeguard and gender experts,

fiduciary agents, and support staff to be housed within each IA and assist with the preparation, implementation, and supervision of project activities.

#### IV. Financing (in USD Million)

Total Project Cost:	375.00	Total Bank Financing:	250.00
Financing Gap:	0.00		
<b>For Loans/Credits/Others</b>			<b>Amount</b>
BORROWER/RECIPIENT			125.00
International Development Association (IDA)			250.00
Total			375.00

#### V. Implementation

The GoB constituted BAPEPS to coordinate project implementation in BKFRP. BAPEPS will continue to act as the State Project Management Unit (PMU) with District level set ups as District Project Management Units (DPMU). Three DPMUs are providing implementation support for the ongoing BKFRP project. The proposed BKBDP will benefit from this existing arrangement. DPMUs needs to be further strengthened and expanded for the BKBDP for smooth coordination and implementation of BKBDP. The Society will act as the PMU for all the project components and will be primarily responsible for the coordination and implementation of the project. BAPEPS will have the overall responsibility for project implementation.

While BAPEPS is responsible for coordinating between the Implementing Agencies (IAs) and the Bank, the IAs themselves are responsible for the overall design and implementation of their respective components/activities, both at the State and the field level. IAs will coordinate and carry out their responsibilities by setting up / strengthening their respective State level Project Implementation Units (PIU) and set up adequate Field level set ups(District / Block / Gram Panchayat level Field Implementation Units such as DPIU, etc.). Each of the IAs, including Water Resources Department, Bihar Rajya Pul Nirman Nigam, Rural Works Department, Department of Agriculture, Department of Animal Husbandry, and Department of Minor Irrigation will set up dedicated PIUs/DPIUs to implement the project activities and work in coherence with the BAPEPS.

#### VI. Safeguard Policies (including public consultation)

Safeguard Policies Triggered by the Project	Yes	No
Environmental Assessment OP/BP 4.01	x	
Natural Habitats OP/BP 4.04	x	
Forests OP/BP 4.36		x
Pest Management OP 4.09	x	
Physical Cultural Resources OP/BP 4.11	x	
Indigenous Peoples OP/BP 4.10		x
Involuntary Resettlement OP/BP 4.12	x	
Safety of Dams OP/BP 4.37		x
Projects on International Waterways OP/BP 7.50	x	
Projects in Disputed Areas OP/BP 7.60		x

**Comments (optional)**

An Environmental and Social Management Framework (ESMF) has been prepared to assess safeguard issues and to mitigate them in line with Bank policies. The project is designated as Category A. On the whole, with proper management, the project interventions are not likely to cause large scale, significant or irreversible damage to natural, physical or social environment. The draft ESMF has been duly disclosed.

BAPEPS will be responsible for the implementation of ESMF with the support from its District / regional offices and the respective implementing agencies will be responsible for the preparation and implementation of safeguard management plans for the sub-projects. BAPEPS will review the safeguard management plans of each sub-project and ensure that the policies and procedures agreed in the ESMF are fully complied.

**VII. Contact point****World Bank**

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**Implementing Agencies**

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