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Report No: 55671 - IN

EMERGENCY PROJECT PAPER

ON A

PROPOSED EMERGENCY RECOVERY CREDIT

IN THE AMOUNT OF SDR 148.80 MILLION  
(US\$220 MILLION EQUIVALENT)

TO THE

REPUBLIC OF INDIA

FOR A

BIHAR KOSI FLOOD RECOVERY PROJECT

August 12, 2010

Sustainable Development Unit  
India Country Management Unit  
South Asia Region

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**CURRENCY EQUIVALENTS**  
(Exchange Rate Effective June 30, 2010)

Currency Unit = Indian Rupees (INR)  
INR 46.13 = US\$ 1  
US\$ 1.48 = SDR 1

FISCAL YEAR  
April 1 – March 31

**ABBREVIATIONS AND ACRONYMS**

|        |  |
|--------|--|
| ARCS   | Audit Reports Compliance System                          |
| AWP    | Annual Work Plans  |
| BDO    | Block Development Officers                               |
| BAPEPS | Bihar Aapada Punarwas Evam Punarnirman Society           |
| BME    | Benefit Monitoring and Evaluation                        |
| BPCU   | Block Project Coordination Unit                          |
| BPIU   | Block Project Implementation Unit                        |
| BPL    | Below Poverty Line                                       |
| BRRDA  | Bihar Rural Road Development Agency                      |
| BRLP   | Bihar Rural Livelihoods Project                          |
| BRLS   | Bihar Rural Livelihood Promotion Society                 |
| BRPNN  | Bihar Rajya Pul Nirman Nigam                             |
| CAA&A  | Controller of Aid, Accounts and Audit                    |
| CAS    | Country Strategy   |
| CBO    | Community Based Organization                             |
| CCA    | Cultivable Command Area                                  |
| CGI    | Corrugated Galvanized Iron                               |
| CID    | Community Institution Development                        |
| CIF    | Community Institution Fund                               |
| COM    | Community Operations Manual                              |
| CPRs   | Common Property Resources                                |
| CTMIS  | Computerized Treasury Management and Information Systems |
| DA     | District Administration                                  |
| DEA    | Department of Economic Affairs                           |
| DEM    | Digital Elevation Model                                  |
| DGS&D  | Director General of Supplies and Disposal                |
| DPCU   | District Project Coordination Unit                       |
| EA     | Environmental Assessment                                 |
| EMP    | Environment Management Plan                              |
| ESMF   | Environment and Social Management Framework              |
| FM     | Financial Management                                     |
| FMIS   | Flood Management Information System                      |
| FMM    | Financial Management Manual                              |
| FMTSC  | Financial Management and Technical Support Consultants   |
| FRBM   | Fiscal Responsibility and Budget Management              |

|       |   |
|-------|---|
| GAAP  | Governance and Accountability Action Plan             |
| GFDRR | Global Facility for Disaster Reduction and Recovery   |
| GIS   | Geographic Information System                         |
| GoB   | Government of Bihar                                   |
| GoI   | Government of India                                   |
| IAs   | Implementing Agencies                                 |
| IAY   | Indira Awas Yojana                                    |
| IBRD  | International Bank for Reconstruction and Development |
| ICB   | International Competitive Bidding                     |
| IDA   | International Development Association                 |
| IUFRs | Interim Unaudited Financial Reports                   |
| LD    | Liquidated Damages                                    |
| LIDAR | Light Detection and Ranging                           |
| M&E   | Monitoring and Evaluation                             |
| MDRs  | Major District Roads                                  |
| MIS   | Management Information System                         |
| NCB   | National Competitive Bidding                          |
| NDMA  | National Disaster Management Authority                |
| NDRF  | National Disaster Response Force                      |
| NGO   | Non Governmental Organization                         |
| NRSA  | National Remote Sensing Agency                        |
| ODRC  | Owner Driven Reconstruction Collaborative             |
| PD    | Project Director                                      |
| PIU   | Project Implementation Unit                           |
| PFS   | Project Financial Statements                          |
| PFMC  | Procurement and Financial Management Consultants      |
| PM    | Project Management                                    |
| PMU   | Project Management Unit                               |
| RAP   | Resettlement Action Plans                             |
| RCD   | Road Construction Department                          |
| RWD   | Rural Works Department                                |
| SBDs  | Standard Bidding Documents                            |
| SHG   | Self Help Group                                       |
| SRM   | Supervision Reporting and Monitoring                  |
| TAF   | Technical Assistance                                  |
| TOR   | Terms of Reference                                    |
| TSC   | Total Sanitation Campaign                             |
| VO    | Village Organization                                  |
| WRD   | Water Resources Department                            |

|                        |                                |
|------------------------|--------------------------------|
| Vice President:        | Isabel M. Guerrero             |
| Country Director:      | Roberto Zagha                  |
| Sector Director:       | John H. Stein                  |
| Acting Sector Manager: | William Kingdom                |
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**INDIA**  
**BIHAR KOSI FLOOD RECOVERY PROJECT**

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**INDIA**  
**BIHAR KOSI FLOOD RECOVERY PROJECT**  
**EMERGENCY PROJECT PAPER**  
**SOUTH ASIA**  
**SASDU**

|   |  |
|---|--|
| Date: August 12, 2010                         | Team Leaders: Christoph Pusch/Mandakini Kaul |
| Country Director: Roberto Zagher              | Sectors: General water, sanitation and flood |
| Acting Sector Manager/Sector Director:        | protection sector (100%)                     |
| William Kingdom/John H. Stein                 | Themes: Natural disaster management (100%)   |
| Project ID: P122096                           | Environmental category: Partial Assessment   |
| Lending Instrument: Emergency Recovery Credit |  |

**Project Financing Data**

Loan    Credit    Grant    Guarantee    Other:

For Loans/Credits/Others:

Total IDA financing (US\$m.): SDR 148.80 Million (US\$ 220 million equivalent)

Proposed terms: Standard IDA terms, with a maturity of 35 years, including a grace period 10 years.

**Financing Plan (US\$m)**

| Source                                      | Local         | Foreign      | Total         |
|---|---------------|--------------|---------------|
| BORROWER/RECIPIENT                          | 39.00         | 0.00         | 39.00         |
| International Development Association (IDA) | 210.00        | 10.00        | 220.00        |
| <b>Total:</b>                               | <b>249.00</b> | <b>10.00</b> | <b>259.00</b> |

**Borrower:**

Government of India

Department of Economic Affairs

Ministry of Finance, North Block, New Delhi, India – 110001

Tel: 23094913 Fax: 23092345

**Responsible Agency:**

Bihar Aapada Punarwas Evam Punarnirman Society (BAPEPS)

**Estimated disbursements (Bank FY/US\$m)**

| FY         | 2011 | 2012 | 2013 | 2014 | 2015 |  |  |  |  |
|------------|------|------|------|------|------|--|--|--|--|
| Annual     | 30   | 60   | 60   | 50   | 20   |  |  |  |  |
| Cumulative | 30   | 90   | 150  | 200  | 220  |  |  |  |  |

Project implementation period: Start - September 15, 2010; End - February 14, 2014

Expected effectiveness date: September 15, 2010

Expected closing date: September 14, 2014

Does the project require any exceptions from Bank policies?

*Ref. Section Appraisal of Project Activities*

Yes  No

Have these been approved by Bank management?

Yes  No

Does the project include any critical risks rated “substantial” or “high”?

*Ref. Section Project Risks and Mitigating Measures*

Yes  No

Project development objective *Ref. Section Bank Response*

The Project Development Objective is to support the flood recovery as well as future oriented risk reduction efforts of GoB through (i) reconstruction of damaged houses and road infrastructure (ii) strengthening the flood management capacity in Kosi Basin, (iii) enhancing livelihood opportunities of the affected people, and (iv) improving the emergency response capacity for future disasters.

Project description *Ref. Section Bank Response*

The project has the following components:

- A. Owner driven housing reconstruction of about 100,000 houses.
- B. Construction of about 90 bridges and culverts and reconstruction of 290 km of rural roads.
- C. Strengthening Flood Management Capacity focusing on building capacity on flood forecasting and flood erosion management and limited structural measures.
- D. Livelihood restoration and enhancement of affected population.
- E. Improving emergency response capacity for future emergencies by providing a Contingency Fund.
- E. Project Management and Technical Assistance.

Which safeguard policies are triggered, if any? *Ref. Section Appraisal of Project Activities*

- OP 4.01 Environmental Assessment
- OP 4.11 Physical Cultural Resources
- OP 4.12 Involuntary Resettlement
- OP 7.50 Projects on International Waterways

## **A. Introduction**

1. The Kosi river rises in China and drains the Everest massif, flowing off the Himalayas, across the Nepal plains into India to flow across Bihar. On August 18, 2008, the Kosi river burst through its eastern embankment 11 km upstream of the Kosi Barrage in Nepal, 8 km north of the Indian border. This created major flooding in Nepal and Bihar with about 3.3 million people affected in Bihar alone.

2. The 2008 Kosi floods are considered the worst flood disaster in the last 50 years in India and were declared a national calamity by the Government of India (GoI). A large scale emergency rescue operation was immediately launched with the help of the Indian Army, Air Force, Navy, National Disaster Response Force (NDRF), and non-government organizations. About 1 million people were evacuated, and 460,000 people were provided temporary shelter in 360 relief camps with medical and maternity facilities. The floods had a devastating impact on people and their livelihood: more than 500 people lost their lives, thousands of families dependent on farming lost land due to siltation, and standing wheat, paddy and other crops were destroyed. Massive damage occurred to housing and infrastructure in the five most affected districts of Supaul, Saharsa, Madhepura, Araria and Purnea.

3. The floods have greatly increased the vulnerability of the population in the affected districts, in particular for those living below the poverty line (BPL) including the landless population. Temporary and permanent migration, already prevalent prior to the floods, has reportedly become a key livelihood strategy following the floods. This has been compounded by public infrastructure, public services and fiscal resources being stretched beyond limits by reconstruction challenges.

4. This Project Paper seeks the approval of the Executive Directors to provide a credit in the amount of *US\$220 million* to the Government of India (GoI) for the proposed Bihar Kosi Flood Recovery Project.

## **B. Recovery Strategy and Rationale for the Project**

5. The floods occurred in August 2008 and reconstruction and recovery needs are still enormous. The Government of Bihar (GoB) was very proactive in relief operations in the immediate aftermath of the flood and also received support from GoI. However, for reconstruction of infrastructure and rehabilitation of livelihoods, resources have been inadequate and as a result, reconstruction and rehabilitation needs have remained largely unfulfilled. In the absence of adequate government support, temporary structures erected by affected households add to their vulnerability. There is an urgent need to restore the livelihoods of those affected and to mitigate the risk of future floods.

6. According to official estimates, and as confirmed by the Needs Assessment<sup>1</sup>, housing damage is estimated in the order of 330,000 units. Significant damage to infrastructure including rural roads, culverts and bridges is reported in 412 Panchayats covering almost 1,000 villages. The Department of Agriculture estimates suggest that coarse sediment was deposited on an area

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<sup>1</sup> Needs Assessment conducted by the World Bank and GFDRR in close cooperation with GoB in May-June 2010.

of 284,000 ha in 1063 villages in 35 blocks of the five affected districts. Generally, the deposits of sediment are deep, continuous and widespread in the northern districts (especially Supaul) and relatively shallow and patchy in the other districts. The floods also caused severe damage to the East Kosi Main Canal and lower-order irrigation infrastructure in the Kosi Cultivable Command Area (CCA) Scheme. The damage included serious siltation of the main canal and distributaries, breaches and siltation of smaller canals and water courses, and destruction of hydraulic and other structures. The East Kosi Main Canal has not been in operation since the disaster due to damages and heavy siltation.

7. After considering various possibilities, the Bank's scoping mission<sup>2</sup> proposed a phased approach for assistance which was discussed and agreed with GoB and GoI. The objectives of this approach are to provide timely and focused support to Bihar's reconstruction efforts in the short-term while further developing a comprehensive long-term program of support for the state. Accordingly, it is proposed that the first phase address the immediate needs of the state for recovery from the Kosi flood disaster while the successive phases provide a comprehensive program of support for the state's longer term needs on overall disaster management, in particular for flood risk management and sustainable interventions in the areas of agricultural productivity and roads.

### **C. Bank Response: The Project**

#### **Bank's strategy of emergency support**

8. As an immediate response to the flood, the Bank offered assistance for short-term relief measures and longer-term reconstruction and recovery. In addition, the Bank's Global Facility for Disaster Reduction and Recovery (GFDRR) mobilized funding to purchase 10 evacuation boats, airlifted to Bihar on September 3, 2008. This intervention was carried out in close coordination and cooperation with the India National Disaster Management Authority (NDMA). Furthermore, funds were provided from the ongoing Bihar Rural Livelihood Project for additional relief items and medium-term livelihood restoration.

9. The proposed project constitutes Phase One of a larger multi-sector engagement on risk and vulnerability reduction, improved flood management capacity, increased agricultural productivity and connectivity. The design considerations behind this approach include:

- Fast delivery of reconstruction assistance which is particularly important as considerable time has elapsed since the Kosi floods.
- Setting up an effective implementation structure during the first phase that will be responsible for both the implementation of this operation as well for longer-term future engagements.
- Key technical assistance programs in the first phase that will help build capacities and programs for the successive phases.
- Not restricting the successive phases to the Kosi affected areas only but focusing on initiatives for a state-wide impact, wherever applicable, in order to comprehensively

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<sup>2</sup> Scoping Mission, April 19-22, 2010.

address targeted sectors such as flood management, agricultural productivity, infrastructure gaps, and contributes to the overall economic development of the state.

### **Project Development Objective:**

10. The Project Development Objective is to support flood recovery as well as future oriented risk reduction efforts of the GoB through: (i) reconstruction of damaged houses and road infrastructure; (ii) strengthening the flood management capacity in Kosi Basin; (iii) enhancing livelihood opportunities of the affected people; and, (iv) improving the emergency response capacity for future disasters.

### **Project Components**

11. The project has six components which are described below:

12. **Component A: Owner Driven Housing Reconstruction** - The objective of this component is to reconstruct damaged houses and reduce vulnerability of the affected population. The component outcome will result in reduced vulnerability for about 100,000 households whose houses will be reconstructed under the project. Using an owner driven reconstruction model, houses will be built with a brick and concrete plinth, bamboo superstructure and corrugated galvanized iron (CGI) sheeting roofing. The cost per house will be Rs. 55,000 (\$1,200) with a currently estimated cost of Rs. 2,300 (\$50), for a toilet and Rs. 5,000 (\$110) for solar powered lighting. In cases where beneficiaries do not own land, GoB will provide additional assistance of Rs. 5,000 (\$110) for the beneficiaries to purchase the land. The majority of reconstruction will take place at the original location. However, for those who purchase land at a new location, houses will be reconstructed at the new location which is generally in the same village area.

13. **Component B: Reconstruction of Roads and Bridges** - The objective of this component is to restore the connectivity lost due to the Kosi flood by reconstruction of damaged roads and bridges/culverts, including construction of some new bridges that are required to restore the breaches due to creation of new streams by the floods and earlier missing bridges. The project is expected to construct about 90 bridges and culverts on the State Highway and Major District Roads and reconstruct about 290 km of rural roads, which would benefit around 2.2 million people. All paved and unpaved rural roads will be constructed as black top roads and will be built to the latest rural road standards followed under GoI financed Rural Roads Program. New cross drainage structures will be provided where new streams have formed and where these were missing earlier. Bridges and culverts will be designed to withstand earthquake forces as per the latest Bureau of Indian Standards guidelines with due regard to topography and hydrology as per guidelines of the Indian Roads Congress and the Ministry of Road Transport and Highways, and projected demographic changes.

14. **Component C: Strengthening Flood Management Capacity** - The objective of this component is to strengthen the overall flood forecasting and flood and sediment management capacity in Bihar by enhancing knowledge, understanding, and capacity of flood and sediment management. This will be achieved by implementing both structural and non-structural measures, mainly focusing on the Kosi River Basin, but with several activities benefiting flood management in the state as a whole. This component has three subcomponents: (i) knowledge

management and capacity building; (ii) flood forecasting and early warning; and (iii) structural investments.

15. The main tasks include: (a) conducting a series of technical studies, mathematical and physical modeling, geotechnical and other investigations, and setting up a center of excellence for water resources and flood management research and development; (b) establishing an embankment asset management system, including training on inspection of embankments; (c) development of a flood and sediment management master plan that will provide an overall framework for flood management in the state; (d) enhancing the flood forecasting and early warning capacity in the state, including development of a digital elevation model (DEM) for the Kosi River Basin to prepare hazard and risk maps and assessments, development of an automatic hydro-meteorological monitoring system, development of rainfall-runoff models, and development of a flood early warning and emergency system as well as community-based flood preparedness measures; and (e) strengthening of eight kms of the Kosi western embankment and piloting of river training, erosion and sediment control, and strengthening of sections of embankments using more adaptable and suitable materials and construction techniques.

16. **Component D: Livelihood Restoration and Enhancement** - The objective of this component is to build social and financial capital and expand the livelihood opportunities of the affected people. The implementing agency for the ongoing Bihar Rural Livelihood Project (BRLP), will be the implementing agency for this component and will use the existing models for expansion of their activities into 13 blocks<sup>3</sup> in the districts of Madhepura, Supaul and Saharsa. Similar to BRLP that is implemented by Bihar Rural Livelihood Promotion Society (BRLPS), this component will have four subcomponents: (i) Community Institution Development; (ii) Community Investment Fund; (iii) Technical Assistance Fund; and (iv) Project Management. The project incorporates lessons from the experience of working in other flood prone areas of Bihar and in the two Kosi flood affected blocks<sup>4</sup>, where the micro planning process so far has led to development of flood adaptive livelihood plans at the household level. The project would also build in community preparedness to disasters into the working of community-based institutions like the Self Help Groups (SHGs) and Village Organizations.

17. **Component E: Improving Emergency Response Capacity** – The objective of this component is making contingency funding available for civil works, consultant services and goods required to respond in case of future emergencies. The detailed investments will depend on the nature, location, and priority needs of the specific emergency. In addition, the component allows the financing of public and private sector expenditures directly related to the emergency recovery program. A list of goods, both domestic and imported, that fall under this category is included in the Operational Manual.

18. **Component F: Project Management and Implementation Support** – The objective of this component is to support project implementation through the provision of necessary offices including equipment and the financing of the associated incremental cost of project management teams with BAPEPS at the state level and representative offices in the districts, support units for housing reconstruction, their training and exposure visits. It includes similar incremental

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<sup>3</sup> **Madhepura:** Muraliganj, Madhepura, Biharganj, Gwalpara, Udakishanganj, Kumarkhand; **Supaul:** Basantpur, Pratapganj, Tribeniganj, Chathapur; **Saharsa:** Saurbajar, Patharghat, Sonebaser.

<sup>4</sup> Chathapur in Supaul district and Kumarkhand in Madhepura district

operating cost of other implementing agencies (other than BAPEPS and BRLPS) excluding salaries of government staff but including salaries of contractual staff within a ceiling of three percent of the concerned implementing agency's component cost. This component would also finance the cost of related consulting services for design, planning and implementation support; management; quality, procurement, financial and third party audits; evaluation and monitoring etc. In addition, technical studies, pilot initiatives, and other project preparation expenses including those required for the preparation of the successive phases of the project are included.

### **Eligibility for Processing under OP/BP 8.0**

19. The Government of Bihar (GoB) was highly proactive in relief operations in the immediate aftermath of the flood and also received support from GoI for this. However, the absence of adequate resources has significantly delayed the reconstruction and recovery process. The World Bank received an official request for assistance from the Department of Economic Affairs, Ministry of Finance, GoI, on December 9, 2009. In response to this request, the Bank carried out a field mission and assessed the need for rapid response as urgent. Affected families, many of whom are living below the poverty line, in addition to losing their houses, also lost their livelihoods in many cases due to siltation of farm lands. Collapsed bridges and culverts are limiting access to schools and health facilities. In the absence of adequate government support, temporary structures put up by affected households have added to their vulnerability. It is urgent to restore the livelihoods of those affected and to mitigate the risk of future floods. Therefore, though the request was delayed, the need for urgent support from the Bank requires the use of post-disaster emergency operation procedures. As a result, the rationale to apply emergency procedures is still valid.

### **Consistency with Country Strategy (CAS)**

20. The Bank's India Country Strategy (CAS) for FY09-12 was discussed by the Board on December 11, 2008. At the request of GoI, the Bank committed to intensifying its engagement in India's low-income states (of which Bihar is one) during the CAS period. The Bank has a long-standing engagement in Bihar through national and state investment operations and technical assistance programs. A Development Policy Loan has recently closed. Floods are an annual phenomenon in Bihar and this project is an important part of the Bank's strategy to assist the state in integrating disaster risk mitigation into the state's longer-term development process.

21. The project is solidly anchored within Pillar II of the India CAS - Ensuring Development is Sustainable – which states that “World Bank Group's assistance will help to increase the resilience of people and the economy to nature-related and man-made shocks”; and aims among other to “support India's comprehensive efforts to reduce the country's vulnerability to floods, cyclones, earthquakes and other natural perils”.

### **Expected Outcomes**

22. The expected outcomes from the project are: (i) recovery of affected families through provision of reconstructed houses; (ii) enhanced connectivity of affected communities by building and repairing roads and bridges infrastructure; (iii) strengthened overall flood

management capacity of the state; (iv) higher social and financial capital and expanding livelihoods opportunities; and (v) improved emergency response capacity for future disasters.

23. The outputs expected to be produced through the project activities corresponding to each of the project outcomes are:

- (i) 100,000 owner-driven reconstructed houses;
- (ii) 290 km of roads and 90 bridges constructed;
- (iii) 8 km of embankments strengthened; and flood risk management, sediment management and asset management plans prepared; and,
- (iv) 50,000 households with increased livelihoods opportunities and reduced debt.

24. The monitoring indicators for each of the expected outcomes are discussed in detail in Annex 2.

#### **D. Appraisal of Project Activities**

25. Project activities were appraised by a multi-sectoral Bank mission team during the period June 24 to July 1, 2010. The appraisal covered: a) the component-specific investment portfolio; b) detailed arrangements for implementation, procurement, financial management, monitoring and evaluation; c) applicable Environmental and Social Management Framework (ESMF); d) risk assessment and mitigation measures; e) mechanisms for quality assurance, grievance redress, complaint handling, and disclosure; and f) readiness of implementation. In addition, a Needs Assessment was carried out prior to appraisal to understand the overall reconstruction needs and to verify the priority intervention for this operation.

26. The Bank team was impressed by the ownership and commitment demonstrated by the various GoB counterparts during the intense preparation period. Within weeks, the GoB established a dedicated society, BAPEPS, to serve as Project Management Unit and appointed an experienced senior Government officer as Project Director.

27. **Policy on Projects on International Waterways:** The Kosi river is an international river, therefore OP 7.50 - Projects on International Waterways is triggered. However, the project qualifies for an exception to the notification requirement under paragraph 7(a) and (b) of OP 7.50 (rehabilitation of an ongoing scheme). Under component C, the project will strengthen the ability of the Water Resources Department to rehabilitate and modernize existing embankments. In addition, the project will provide funding of about US\$12 million for the strengthening of existing sections of flood embankments along the Kosi River within Bihar. The project will not involve any works or activities that significantly alter or expand the embankments' scope and extent to make it appear a new or different structure. Furthermore, the project interventions will in no way adversely affect the quality or quantity of water flows downstream in Bihar or upstream in Nepal. Therefore, this qualifies for an exception to the notification requirement. This has been confirmed by regional management.

## **Environmental Safeguards and Management**

28. While the general thrust and broad project interventions are known at the time of project appraisal, the specific details pertaining to planning and design of multiple sub-projects that the project envisages to support, will be known only later as the project has been prepared under Emergency Recovery Assistance Procedures. In a situation, where multiple sub-projects will be located across the five flood affected districts (Supaul, Madhepura, Saharsa, Araria and Purnia), an Environment and Social Management Framework (ESMF) approach has been adopted for the project.

29. The implementation of project components will include a substantial amount of reconstruction work, including some new construction which has the potential to create adverse environmental impacts in the process. Potential key adverse environmental impacts that may result on account of the project implementation could include: (a) issues related to poor selection (such as in the case of the housing component), planning and design of sub-projects, particularly affecting drainage (such as the case of roads/bridges/embankments); (b) impacts related to availability and extraction of resources such as bamboo, stone, earth, water and sand that will be required for reconstruction works; (c) inappropriate storage and handling of chemicals and hazardous materials; and (d) occupational health and safety issues related to various construction operations and improper disposal of waste materials. However, if the reconstruction efforts are planned and managed well in line with the approach provided in the ESMF, most of the environmental impacts are likely to be minor and would be short-term or temporary in nature. While the project itself is designed to benefit the flood hit communities, the management of unwarranted/adverse impacts is proposed to be managed through the application and implementation of the said ESMF.

30. The ESMF addresses issues that could arise on account of project implementation and supports the integration of environmental aspects within the decision making process of various sub-projects as they will be identified, prepared and implemented. The systematic application and implementation of the ESMF will also assist in achieving compliance with the applicable laws and regulations of GoI and the GoB apart from meeting the requirements of the relevant Bank's Operational Policies on environment safeguards.

31. An Environmental and Social Manager/Specialist in the BAPEPS will provide the required support to line agencies for ESMF implementation. The Nodal Officer designated in the line department will also oversee and coordinate with the field staff for effective ESMF implementation. More details are in Annex 8.

## **Social Safeguards and Management**

32. Adverse social impacts and land acquisitions are expected to be minimal in this project as most of the sub projects are rebuilding and restoring damaged existing infrastructure. However, there is a possibility of the requirement of small strips of private land for reconstruction of roads, bridges, and flood management infrastructure (Components B and C) to accommodate embankment slopes and approaches in some cases. Measures such as screening, consultations, preparation of Resettlement Action Plans (RAPs) and extension of entitlements are included in project design to ensure early evaluation of the impacts of land purchases and the integration of

suitable mitigation measures into subproject planning and implementation. An Environment and Social Management Framework (ESMF) has been prepared to mitigate adverse impacts and improve benefits to the affected population. In principle, the ESMF prescribes the use of vacant government lands as the first option. Where this is not possible, private land can be acquired through: (a) voluntary donations; (b) private negotiations/direct purchase; or (c) using the land acquisition process. The District Collector is empowered to purchase land through private negotiations up to a maximum of 150 percent of the guideline value without any monetary ceiling or at any higher percentage as prescribed by any Government of Bihar's acts/directives.

33. The land and structures, if any, required for the project will be compensated at replacement cost along with shifting allowance. The titleholders belonging to vulnerable groups losing complete residential structures will be assisted with the option of a free house. A subsistence allowance equivalent to 20 days minimum agricultural wages per month for a period of six months will be extended for income losses.

34. All disputes on compensation will be resolved by tehsildar<sup>5</sup>/Sub Divisional Magistrate involving the: (a) affected party; (b) the incharge of line department; and (c) Pradhan<sup>6</sup> of the village. However, in case of non-satisfactory solution, the matter will be brought to the notice of the District Collector and he/she will have the final authority to decide the case. In the case of housing, Owner Driven Reconstruction Collaborative (ODRC) will ensure grievance redress through Gram Sabhas<sup>7</sup> and District Collectors.

35. The project's Environmental and Social Safeguards Manager will oversee and implement the ESMF and RAPs through the designated Social and Environmental officers from the line departments. The following safeguard policies are triggered:

OP 4.01 Environmental Assessment

OP 4.11 Physical Cultural Resources

OP 4.12 Involuntary Resettlement

OP 7.50 Projects on International Waterways

## **E. Implementation Arrangement and Financing Plan**

### **Implementation Arrangements**

36. GoB has constituted 'Bihar Aapada Punarwas Evam Punarnirman Society (BAPEPS), which will be headed by a Project Director. This society will act as the PMU for all components, except for Component 'D' and will be primarily responsible for the implementation of the project. Ex-Officio Chairperson of the Society will be the Development Commissioner, GoB. BAPEPS will have the overall responsibility for the project implementation including, but not limited to, reporting, monitoring and evaluation, procurement control, financial management,

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<sup>5</sup> Official in charge of revenue and taxation at the block level

<sup>6</sup> Head of the elected village council

<sup>7</sup> Local Government at village level

audit and disbursements, compliance with the ESMF, and coordination with the line agencies and the World Bank.

37. In addition to the PMU, there are five departments/agencies that will be involved in implementing the specific project components:

- i. The District Administration led by the District Magistrate for implementation and monitoring of the Housing Reconstruction component. This will be supported by the Owner Driven Reconstruction Collaborative (ODRC) and Multi Level Support and Monitoring including the district/block level office of the BAPEPS;
- ii. The ‘Bihar Rajya Pul Nirman Nigam Limited (BRPNN)’ which will construct the bridges on state highways and major district roads;
- iii. The ‘Bihar Rural Road Development Agency (BRRDA) that will construct the rural roads;
- iv. The Water Resources Department (WRD) which will implement the flood management and capacity building initiatives for flood management; and
- v. The Project Management Unit for the BRLP, the Bihar Rural Livelihood Promotion Society (BRLPS) that will be responsible for implementation of component ‘D’: Livelihood Support and Enhancement.

### **Financing Plan**

38. The following table gives a snapshot of the project cost in USD million including financing plan.

| <b>Component</b>                                       | <b>Total</b> | <b>IDA Financing</b> | <b>Government Financing</b> |
|--|--------------|----------------------|-----------------------------|
| A. Housing Reconstruction (Madhepura, Supaul, Saharsa) | 74.8         | 60.0                 | 14.8                        |
| B. Roads and Bridges                                   | 82.3         | 70.0                 | 12.3                        |
| C. Strengthening Flood Management Capacity             | 35.3         | 30.0                 | 5.3                         |
| D. Livelihood Support and Enhancement                  | 35.3         | 30.0                 | 5.3                         |
| E. Contingency Fund                                    | 20.0         | 20.0                 | 0.0                         |
| F. Project Management and Implementation Support       | 11.7         | 10.0                 | 1.7                         |
| <b>Total</b>   | <b>259</b>   | <b>220</b>           | <b>39</b>                   |

Note: (i) All figures in USD million, (ii) Totals may not match due to rounding off.

### **Procurement Arrangements**

39. Procurement of goods, works and services will be carried out in accordance with the World Bank’s “Guidelines: Procurement under IBRD Loans and IDA Credits” (dated May 2004, revised in October 2006 and May 2010); “Guidelines: Selection and Employment of Consultants by World Bank Borrowers” (dated May 2004, revised in October 2006 and May 2010); and the provisions stipulated in the Project Agreement. The Bank’s Standard Bidding Documents, Requests for Proposals, and Forms of Consultant Contract will be used. Majority of the procurements will be carried out by the respective implementing agencies but with approvals

from the BAPEPS. The summary of the procurement capacity assessment of the implementing agencies and precise arrangements are presented in Annex 5.

### **Financial Management Arrangements**

40. The project has an adequate system of accounting and reporting for expenditures under the project.

41. The involvement of multiple executing agencies poses significant risks from a financial management perspective. This has been mitigated to a considerable extent through specific measures in the project design which includes the setting up of BAPEPS, centralizing payments at BAPEPS, implementing the Livelihood component through the Bihar Rural Livelihoods Project Society (BRLPS) and implementing ongoing Bank-financed Livelihood project. Only the Housing component (implemented adopting a home owner driven model) will have funds flowing to beneficiaries through the Block level offices of BAPEPS. FM arrangements for BDRSS have been agreed and documented in a Financial Management Manual (FMM) for components implemented by BAPEPS. The Finance function in BAPEPS will be under a Deputy Director – Finance, on deputation who will be assisted by a Finance and Accounts Officer and supported by Procurement & Financial Management Consultants. BAPEPS will be the only accounting centre for all components other than Livelihoods component for which accounting will be done at the same accounting centers currently set up for the Jeevika project. Financial reporting will be through quarterly Interim Unaudited Financial Reports (IUFs) and annual Project Financial Statements (PFS), formats have been agreed and included in the FMM. BRLPS is implementing the World Bank financed Jeevika project and FM arrangements are documented in a FMM which are in place, and are considered moderately satisfactory. Finance and Accounts staffing in BRLPS is already in place and is vested in a Chief Finance Officer (on deputation) supported by FMTSC.

42. **Funds Flow:** The funds requirement for the project will be budgeted in the annual budget of the Planning Department and drawn by the implementing agencies (BRLPS and BAPEPS), based on their annual work plan, as grant in aid. For the roads, bridges and flood management components, no funds are expected to flow to the sub-implementing agencies (namely BRPNN, BAPEPS and WRD) and payments will be made directly to the contractors by BAPEPS based on certified bills submitted by these agencies and by way of reimbursement of operating costs of sub implementing agencies. For the Housing component, funds will be passed on to the block level offices of BAPEPS for further transfers to the beneficiaries in tranches and based on achievement and certification of milestones. The tranches will be released directly to the bank account of beneficiaries by way of payment advices. This process has been already established under the existing Owner Driven Reconstruction Collaborative (ODRC) model as described in OM. Funds to the district/block offices of BAPEPS for operating costs will be provided by way of imprest and adjusted/ replenished on a periodic basis. Funds under the Livelihoods component will follow the system already established in BRLPS under the Jeevika project.

43. **Disbursements:** An initial advance would be deposited into the segregated Designated Account maintained in USD with RBI by GoI. Withdrawals from the designated account will be on the basis of withdrawal applications to the extent of reported expenditure in quarterly IUFs by the project, i.e. by BAPEPS for components other than livelihood and by BRLPS (for the

Livelihood Component). As per standard Centre - State mechanism of Additional Central Assistance, GoI will transfer the funds from the Bank to GoB on a back-to-back basis. Advances into the designated account would be processed by Controller of Aid, Account and Audit (CAA&A).

44. **Audit arrangements** – External Audit of BRLPS’s financial statements is done by a firm of Chartered Accountants on TOR agreed with the Bank and is already in place. The same auditors will also cover the Livelihoods component under the project and audit the project expenditure reported in a separate schedule in the entity financial statements. The existing internal audit scope will also be extended to cover this project districts. External audit of BAPEPS including the PFS will be done by an independent firm of Chartered Accountants acceptable to the Bank on TOR agreed and included in the FMM. The external auditors will also carry out quarterly reviews covering the BAPEPS and a sample of sub-implementing agencies on a rotational basis with a certification of the annual financial statements for year ending March 31. While the annual audit report for year ending March 31 each year will be submitted to the Bank, the quarterly reports will be reviewed during the implementation support missions. The annual audit reports will be submitted within six months of close of the financial year and monitored in ARCS. The audited financial statements will be made publically available.

## F. Project Risks and Mitigating Measures

45. The following critical risk factors and mitigation measures have been identified by the Bank team:

| Risk  | Risk Mitigation Measure  | Rating with Mitigation |
|---|--|------------------------|
| <b>Governance and Controls</b>  |  |                        |
| Change in political leadership and policy environment can lead to change in priorities.         | <ul style="list-style-type: none"> <li>• The project will assist the GoB on basic reconstruction and recovery activities. Priority for these investments is unlikely to be dependent on the political environment.</li> <li>• Project activities are embedded in GoB established reconstruction strategy.</li> <li>• Bank financing will only assist in fulfilling part of the total reconstruction requirements.</li> </ul>                     | Low                    |
| Participation of multiple implementing agencies leading to lack of controls and accountability. | <ul style="list-style-type: none"> <li>• GoB created BAPEPS that will singularly be responsible for coordination, payments, procurement control and ensure follow-up of agreed procedures.</li> <li>• The majority works will be implemented through three major agencies: BRPNN, BRRDA and WRD, that will report to the BAPEPS on project matters.</li> <li>• BRLPS will implement the Livelihood support and enhancement component.</li> </ul> | Moderate               |
| Inadequate beneficiary participation in decision making   | <ul style="list-style-type: none"> <li>• Beneficiary participation in housing reconstruction through owner driven</li> </ul>   | Low                    |

| <b>Risk</b>  | <b>Risk Mitigation Measure</b>  | <b>Rating with Mitigation</b> |
|--|---|-------------------------------|
| and exclusion from project benefits.   | <p>reconstruction.</p> <ul style="list-style-type: none"> <li>Beneficiary list re-verification by district administration with involvement of ODRC that also helps in ensuring grievance redress.</li> <li>Beneficiary list to be endorsed by Gram Sabha.</li> </ul>  |                               |
| Uniformity of approach in implementation.  | <ul style="list-style-type: none"> <li>BAPEPS is taking a lead role in creating various manuals: Operation, Procurement, and Financial Management Manual that will be adopted for project activities by all implementing agencies.</li> </ul>   | Moderate                      |
| <b>Procurement</b>   |   |                               |
| Low Transparency in bidding process, lack of competition in contracts, unethical practices in procurement.                       | <ul style="list-style-type: none"> <li>Procurement is decentralized to ensure competition.</li> <li>Procurement control: contract award decision to be made by BAPEPS on recommendation from nodal officer in each Implementing Agency (IA) to ensure adequate level of check and control.</li> <li>National competitive bidding with specific disclosure requirements to address transparency requirements.</li> <li>Post-reviews by the Bank to review the transparency of bidding processes, range of competition, variations between estimated and bid prices, number of re-bids, etc. to ensure compliance.</li> <li>Procurement and Financial Management Support consultants will be appointed in BAPEPS to augment the capacities in the PMU and the implementing agencies.</li> </ul> | Substantial                   |
| <b>Financial Management</b>  |   |                               |
| Project Accounting standards are untested, staff not familiar with reporting requirements leading to delays and non compliances. | <ul style="list-style-type: none"> <li>Centralized payment mechanism, leading to better management and control on finances.</li> <li>Financial management manual of BAPEPS's implemented components has been developed and adopted.</li> <li>Procurement and Financial Management Support consultants will be appointed in PMU.</li> <li>Qualified chartered accountant/officer of central financial services will be hired in the state PMU. To oversee and coordinate financial management.</li> <li>FM arrangements in BRLPS are already in place.</li> </ul>  | Substantial                   |
| <b>Monitoring and Evaluation</b>   |   |                               |
| Inadequate monitoring, evaluation and reporting system particularly with the involvement of multiple implementing                | <ul style="list-style-type: none"> <li>BAPEPS will submit a quarterly progress report to the Bank which will be a compilation of the monthly reports comprising of updates on progress of works sub-component wise,</li> </ul>  | Moderate                      |

| Risk                                       | Risk Mitigation Measure   | Rating with Mitigation |
|--|---|------------------------|
| departments.                               | <p>procurements, finance, expenditure claims submitted for replenishment, status of applications for statutory clearances /permissions, environment &amp; social compliance reports as required in the ESMF, etc.</p> <ul style="list-style-type: none"> <li>• BAPEPS will also have district and block level offices for adequate monitoring and reporting therefore M&amp;E system is not dependent on the IA alone.</li> <li>• Third party quality audit consultants will be deployed who will provide feedback on quality issues and monitor compliances.</li> <li>• Benefit Monitoring and Evaluation (BME) Consultants will be engaged for assessing and reporting the impacts of the project on the lives of the beneficiaries.</li> <li>• Use of ODRC in the housing reconstruction process for technical and social support and monitoring.</li> </ul> |                        |
| Significant adverse impact on environment. | <ul style="list-style-type: none"> <li>• Integration of ESMF provisions including outputs from public consultation process in (a) project planning; (b) engineering design and; (c) sub-project implementation and operation.</li> <li>• Preparation of Environmental Assessment (EA) and sub-project specific Environmental Management Plans (EMPs) for projects with a potential for significant adverse impacts.</li> <li>• Dedicated staffing; capacity building and training for effective ESMF implementation; robust supervision arrangements; regular and systematic monitoring and evaluation.</li> </ul>  | Moderate               |

46. Overall residual risk rating is Moderate to Substantial.

47. **Governance and Accountability Action Plan (GAAP)** - A detailed GAAP has been developed and is incorporated in the Operations Manual.

**G. Terms and Conditions for Project Financing**

48. There are no additional terms and conditions for project financing except as indicated below:

- Retroactive financing of eligible expenditures subject to a maximum of USD 40 million: after January 01, 2010 for component A, B C and F; and after July 01, 2010 for Component D.
- Financing from Component E is subject to the declaration of the “Calamity” in whole or part of Bihar, either by the Government of India or Government of Bihar.

## **Annex 1: Detailed Description of Project Components**

### **INDIA: Bihar Kosi Flood Recovery Project**

1. The project has six components: (A) Owner driven housing reconstruction; (B) Reconstruction of Roads and Bridges; (C) Strengthening Flood Management; (D) Livelihood Restoration and Enhancement; (E) Improving Emergency Response Capacity; and (F) Project Management, Implementation Support and Technical Assistance.

#### **(A) Owner driven housing reconstruction (IDA financing US\$60 million)**

##### **Background**

2. A very large population in the affected districts lived in mud or thatched houses prior to the disaster. As per government estimates, a total of about 330,000 houses of different categories: Pucca, Kucha and Huts were fully or partially damaged. As per their housing reconstruction policy, the Government of Bihar (GoB) has made a decision to reconstruct about 150,000 houses to replace all completely destroyed kucha houses and huts in the worst affected districts of Supaul, Madhepura and Saharsa. The project would support reconstruction of about 100,000 houses. The majority of reconstruction will take place at the original location. However, for those who have to purchase land, houses could be reconstructed at new location, generally in the same village area.

##### **Objective**

3. The objective of this component is to reconstruct damaged houses and reduce the vulnerability of the affected population.

##### **Housing Reconstruction Strategy**

4. *Owner Driven Reconstruction* - The GoB has adopted an Owner Driven Reconstruction approach and has issued a policy directive to this effect and that would be applicable to this project.

5. *NGO Support* - Owner Driven Reconstruction Collaborative (ODRC), a collaborative of professionals and NGO's has been providing technical and social mobilization support. The mandate to ODRC has been formalized through a MoU signed between the GoB and ODRC. If required, further organizations could be considered for implementation support.

6. *Multi Level Support and Monitoring Mechanism* – GoB together with ODRC has put up a multi-layered support and monitoring mechanism by deploying resources at state level (State Coordinator), district level (District Coordinator), hub level (Kosi Setu Kendra for every 3000-4000 houses), and at panchayat level (every 1000 houses).

7. *Hazard Resistant Design* – A construction design has been proposed for a 215 sq. ft. house by the Owner-Driven Reconstruction Consortium (ODRC). These structures, designed using a brick and cement plinth and bamboo superstructure were reviewed and approved by a technical committee appointed by GoB.

8. *Unit Cost* - The basic cost of the proposed house is estimated at Rs. 55,000 and together with solar power lighting arrangements (Rs. 5,000), that total cost will cost Rs. 60,000 per unit. In addition, the GoB will provide Rs. 2,300 from the GoI assisted Total Sanitation Campaign (TSC) to the housing beneficiaries for construction of toilets.

9. *Direct Cash Transfer in Installments* - Money will be provided to owners in three tranches through direct credit to the accounts of the beneficiaries. The first tranche of Rs. 35,000 would be used by home-owners to construct the plinth and foundation. Once completed and certified by an Engineer at the Panchayat level, the second tranche of Rs. 20,000 would be released. The third tranche of Rs. 5,000 primarily meant for installation of solar panel and lighting arrangements will be released upon certification of completion of the house.

10. *Houses for Landless* – GoB, through their resources, would provide an additional Rs. 5,000 to landless families in order for them to purchase the required land for housing construction. Reconstruction location in these cases may be different from original sites depending on the location of land purchased but generally they will be within the same village area.

11. *Dovetailing with other Schemes* – GoB would use centrally sponsored schemes to strengthen the housing reconstruction component.

- (i) Indira Awas Yojana (IAY): Families identified as Below Poverty Line (BPL) are eligible to receive assistance of Rs. 45,000 for construction of houses.
- (ii) Total Sanitation Campaign: All reconstructed houses will be provided toilets through TSC which has a provision of providing Rs. 2,300/household to those who do not have their own toilet.

12. *Beneficiary Re-verification* – The lists are being re-verified by the Block Development Officers for both exclusions and inclusions into the program. The District Magistrate's office along with the Block Development Officer and Sub-divisional Officer will ensure grievance redress in the process of re-verification.

13. The approximate number of houses that can be constructed using Bank funds with dovetailing from the other schemes are as follows but will ultimately depend on the exact number of eligible beneficiaries belonging to the following categories:

- About 20,000 HRC<sup>8</sup>-1: Beneficiaries belonging to Above Poverty Line - Project financing - Rs. 60,000 per house.
- About 20,000 HRC-2: Beneficiaries belonging to Below Poverty Line that constructed their houses with assistance from IAY and whose houses were subsequently destroyed in the floods - Project financing - Rs. 60,000 per house.
- About 60,000 HRC-3: Beneficiaries belonging to Below Poverty Line, whose houses were destroyed and who have not availed assistance under the IAY scheme - Project financing - Rs. 15,000 per house (balance Rs. 45,000 coming from IAY).

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<sup>8</sup> HRC – Housing Reconstruction Category

14. *GoB contribution* - In all of the above, GoB contribution would be 20 percent of the financing requirement from the project. In addition, contribution from IAY and TSC (grants from GoI) and that for purchase of land (Rs. 5000 per land less beneficiary) will be from GoB.

### **Investment Portfolio**

15. The investment portfolio under this component will include cash transfers to beneficiaries as indicated in paragraph 13 above.

### **Expected Outcome**

16. The component will result in reduced flood and earthquake related vulnerability for about 100,000 households whose houses will be reconstructed under the project.

### **(B) Reconstruction of Roads and Bridges (IDA financing US\$70 million)**

#### **Background**

17. As per GoB estimates, the three most affected districts were Madhepura, Supaul and Saharsa. Construction of Bridges and Culverts and reconstruction of Rural Roads have been proposed in these priority districts. All paved and unpaved rural roads will be constructed as black top roads and will be built to the latest rural road standards followed under GoI financed Rural Roads Program. New cross-drainage structures will be provided where new streams have formed and where these were missing earlier. Bridges and culverts will be designed to withstand earthquake forces as per the latest Bureau of Indian Standards guidelines with due regard to topography and hydrology as per guidelines by the Indian Roads Congress and the Ministry of Road Transport and Highways, and projected demographic changes.

18. The following Agencies have been identified to implement the roads and bridges component of the project:

- 'Bihar Rajya Pul Nirman Nigam Limited (BRPNN)' for bridge construction
- 'Bihar Rural Road Development Agency (BRRDA)' for construction of rural roads.

#### **Objective**

19. The objective of this component is to restore the connectivity lost due to the Kosi flood by reconstruction of damaged roads and bridges/culverts, including construction of some new bridges that are required to restore the breaches due to creation of new streams by the floods and earlier missing bridges.

### **Investment Portfolio**

20. Identified investment portfolio under the project for this component is indicated in the following:

- Reconstruction of fully and partly damaged bridges and culverts including construction of new bridges on Major District Roads and State Highways in Madhepura, Supaul and Saharsa Districts – about 90 structures.
- Reconstruction of damaged paved and unpaved rural roads in Madhepura and Supaul District – about 290 km.

21. It has been agreed that the roads, bridges and culverts will be constructed to the requirements of usual rainfall and flood in the areas taking into account the permanent changes in the ground conditions caused by the August 2008 flood, and the designs need not to satisfy the exceptional flood flow of August 2008

### **Expected Outcome**

22. The project is expected to restore and improve connectivity by reconstructing 90 bridges and culverts on the State Highway and Major District Roads and by reconstructing about 290 km of rural roads and would benefit about 2.2 million persons.

### **Implementation Arrangements**

23. The investments will be concentrated in three districts of the State. These investments will be in addition to the normal work load of BRPNN and BRRDA in those districts. It has been agreed that the implementation capacity of BRPNN and BRRDA in the districts will be strengthened by deputing additional staff in the districts as required. BRPNN and BRRDA will require dedicated staff at their headquarters at Patna for coordination, quality assurance and monitoring of the project activities as well as for coordination with the BAPEPS. Each of the two agencies will nominate a Nodal Officer for the subject project activities.

### **(C) Strengthening Flood Management Capacity (IDA Financing US\$30 million)**

#### **Background**

24. On August 18, 2008 the Eastern Afflux Bund of the Kosi Barrage breached at about 11 km upstream of the Bhimnagar Barrage. Following the floods, the Water Resources Department (WRD) with support from GoI started a program of embankment raising and strengthening with a Rs. 339 crores or a US\$74 million allocation and a program of rehabilitation of the Eastern Kosi Canal System started with a total cost estimate of Rs. 750 crores (US\$163 million). The current requirement for physical investments for flood and irrigation infrastructure is minimal.

#### **Objective**

25. The objective of the component is to strengthen the overall flood forecasting and flood and sediment management capacity in Bihar by enhancing the knowledge, understanding, and capacity of flood and sediment management.

#### **Investment Portfolio**

26. The investment portfolio under this component includes three subcomponents and will be implemented by the Water Resources Department of the Government of Bihar.

#### **Subcomponent (i): Knowledge Management and Capacity Building (IDA financing US\$10 million)**

27. A series of technical studies (e.g. embankment breaching, use of alternative construction and embankment protection methods and materials), mathematical and physical models, and geotechnical and other investigations of existing embankments will be carried out. Government intends to establish a Center of Excellence for Water Resources and Flood and Sediment Management Research and Development in Birpur. The project will support the initial

expenditures of such a center, focusing on acquisition of the necessary software and equipment. Among the first tasks of the center will be to get involved in the above mentioned studies, modeling, and investigations. The project will finance a physical model of the section of the Kosi River upstream of the barrage mainly for demonstration purposes to illustrate how a river course between embankments and dikes aggrades and has to be shifted to a new course in a carefully managed manner. Mathematical models to describe the morpho-dynamic behavior of the Kosi River will be developed to increase the understanding of the river dynamics, to predict river behavior under different events, and to determine the impact of interventions. Finally, researchers at the Center and engineers from the Water Resources Department will have opportunities to participate in courses and other training events at specialized international technology centers and universities. Study tours will be conducted to study successful flood management and erosion control measures in river systems such as the Yellow River (China) and Mississippi River (USA). An embankment asset management system will be developed, including training on inspection of embankments. The project will finance the consulting services for the preparation of a comprehensive integrated flood and sediment management master plan. The master plan will include five main key elements - namely the institutional foundation; managing flood hazards; managing exposure to flood hazards; managing vulnerability to the residual flood risks; and, developing a sustainable sediment management plan. GoB requested purchase of nine dredgers for sediment management. This would, however, be considered in subsequent phases of the program depending on the outcomes of the sediment management plan.

**Subcomponent (ii): Flood Forecasting and Early Warning** (IDA financing US\$ 8 million)

28. Flood forecasting significantly enhances the accuracy and increases the lead time of forecasts leading to better flood warning systems. The project will build on completed and ongoing activities under the Bank-funded Flood Management Information System (FMIS) Cell within WRD. GoB will finance using its own resources the preparation of a digital elevation model (DEM), using Light Detection and Ranging (LIDAR) technology for the Kosi River Basin to enable preparation of hazard and risk maps and assessments. The project will also finance the setting up of a flood forecasting and early warning system including: (i) setting up and automatic hydro-meteorological monitoring system; (ii) development of rainfall-runoff and flood routing models including data collection; (iii) development of a flood risk forecasting system and the related institutional development for its operation including monitoring efficiency and effectiveness of early warnings at community, local government and state government levels; and (iv) development of flood warning and emergency management capacity, including community preparedness measures.

**Subcomponent (iii): Structural Investments** (IDA financing US\$12 million)

29. Eight km, starting at the border between Nepal and India, of the Western Kosi downstream flood embankment will be strengthening and paved with a 3.5 m wide asphalt surface. Piloting of river training, localized erosion control, and strengthening of sections of embankments using more adaptable and suitable materials and construction techniques will be carried out. This piloting will take into account the results of several of the activities under subcomponent (i). In addition, renovation of several *dhars* (small stream) that currently affect the East Kosi Irrigation Main Canal may be included under the investments. Adequate construction

supervision and quality control arrangements will be put in place and portable testing kits for quality control testing may also be procured for WRD’s quality assurance units.

| No. | Sub-Component & Activities   | Cost (USD Million) |
|-----|--|--------------------|
| 1.0 | <b>Knowledge Management &amp; Capacity Building</b> <ul style="list-style-type: none"> <li>• Technical studies, modeling, geotechnical &amp; other investigations</li> <li>• Center of excellence for research and development on water resources and flood and sediment management including field station at Birpur</li> <li>• Embankment Asset Management System</li> <li>• Master Plan for Flood and Sedimentation Management</li> </ul> | 10.0               |
| 2.0 | <b>Flood Forecasting and Early Warning</b> <ul style="list-style-type: none"> <li>• LIDAR Survey, Contour and Hazard Risk Mapping<sup>9</sup></li> <li>• Flood forecasting, early warning system, community preparedness</li> </ul>  | 8.0                |
| 3.0 | <b>Structural Investments</b> <ul style="list-style-type: none"> <li>• Road development on Western Kosi Embankment</li> <li>• Piloting embankment strengthening</li> </ul>   | 12.0               |
|     | <b>Total</b>   | 30.0               |

### Expected Outcomes

30. The expected outcomes of this component are to enhance the capacity of the Government of Bihar to better operate and maintain existing flood management infrastructure in the Kosi Basin, better understand Kosi river morphology, set priorities for future activities, improve usage of the Kosi Basin and assist affected communities in the Kosi Basin to reduce vulnerability to floods and thereby protect their life, property, and livelihoods.

### (D) Livelihood Restoration and Enhancement (IDA Financing US\$30 million)

#### Background

31. The region has a significant work force dependent on agriculture. The floods caused significant damages to agriculture and livestock with an adverse impact on the livelihoods of the small and marginal famers, landless laborers being the most affected. The floods have also affected those households deriving their income from nonfarm sources due to the loss of their productive assets. There is an ongoing Bihar Rural Livelihood Project (BRLP – “Jeevika”) (US\$70 million, IDA financing US\$63 million). It is, therefore proposed to use the BRLP implementation arrangements, procurement and financial arrangements, and other agreed procedures for implementation of this component. Jeevika will be the implementing agency for this component and use the existing models for expansion of their activities into 13 Blocks<sup>10</sup> in the districts of Madhepura, Supaul and Saharsa.

<sup>9</sup> To be financed through GoB resources

<sup>10</sup> **Madhepura:** Muraliganj, Madhepura, Biharganj, Gwalpara, Udakishanganj, Kumarkhand; **Supaul:** Basantpur, Pratapganj, Tribeniganj, Chathapur; **Saharsa:** Saurbajar, Patharghat, Sonebaser.

## Objective

32. The objective of the component is to build social and financial capital and expand the livelihood opportunities of affected population.

## Investment Portfolio

33. As in Jeevika, the component will have four subcomponents: (i) Community Institution Development; (ii) Community Investment Fund; (iii) Technical Assistance Fund; and (iv) Project Management. Details are indicated in the following table and the complete details on each of the components are available in Project Appraisal Document of BRLPS.

| Subcomponents                           | Costs (Million Rs.) | Cost components  |
|---|---------------------|--|
| Community Institution Development (CID) | 240                 | Training costs of Self Help Groups, Village Organizations, exposure costs, and salaries of staff of BPIU, Operational costs all put together     |
| Community Institution Fund (CIF)        | 1225                | Costs towards promoting income generation, livelihood improvements, food security intervention, health related interventions, skill development. |
| Technical Assistance Fund (TAF)         | 85                  | Costs for technical support partners in agriculture, livestock and Non -Farm Sectors   |
| Project Management (PM)                 | 90                  | Salaries of District Project Coordination Unit staff and other operational costs for 3 years   |
| Total                                   | 1640                |  |

## Expected Outcome

34. Component outcome includes: expanded livelihood options, enhanced incomes and reduced debt levels for at least 80 percent of the targeted households (160,000).

### (E) Improving Emergency Response Capacity (IDA financing US\$20 million)

## Objective

35. The objective of this component is making contingency funding available for civil works, consultant services and goods required by GoB to respond in a case of future emergencies.

## Investment Portfolio

36. The detailed investments will depend on the nature, location, and priority needs of the specific disaster by allowing fast disbursement against positive list of goods. The trigger for disbursement and list of goods is detailed in the Operations Manual. In addition, the component will also allow the financing of public and private sector expenditures directly related to the emergency recovery program.

### (F) Project Management and Implementation Support (IDA financing US\$10 million)

37. This Component's objective is to support project implementation through:
- Provision of necessary offices including equipment and financing of associated incremental cost of project management teams with PMU at the state level and its

representative offices in the districts, Implementing Agencies, their training and exposure visits, etc.

- Finance the cost of related consulting services for design, planning and implementation support; management; quality, financial and third party audits; evaluation and monitoring, pilot initiatives, etc.
- Finance technical studies and other project preparation expenses that may be required for the preparation of the subsequent phases of the project.

## **Annex 2: Results Framework and Monitoring**

### **INDIA: Bihar Kosi Flood Recovery Project**

#### **A.) Overall Project Supervision, Reporting and Monitoring (SRM) Framework**

1. The multi-tier implementation arrangements under the project include supervision and monitoring roles and responsibilities of the various players involved in implementation. Monitoring will occur as a periodic function, and will include process reviews/audits/social audits, reporting of outputs, and maintaining progressive records. Broad thematic areas that will be supervised and monitored include the following:

- Social and Environmental Monitoring
- Regular Quality Supervision & Independent Quality Monitoring
- Periodic Physical and Financial Progress Monitoring
- Benefit Monitoring and Evaluation

2. *Social and Environmental Monitoring* - This will comprise the following sets of activities:

- (i) Monitoring compliance with environmental regulations, social safeguards and ESMF provisions.
- (ii) Continuous Social Impact Monitoring at the Community Levels and oversight at state/project level.

3. *Regular Quality Supervision and Independent Quality Monitoring* - This will be carried out by the respective Implementing Agencies (IAs) and BAPEPS. ODRC staff shall be deployed to provide technical assistance, quality supervision, and grievance redress for the housing component. Third party quality monitoring by BAPEPS and independent certification of goods procured under the project shall form the Quality Management System. Detailed quality management guidelines would be evolved by the BAPEPS and adopted by all IAs and other stake holders.

4. *Periodic Physical and Financial Progress Monitoring* - Physical progress monitoring will be carried out by the implementing agencies on a monthly basis and reported to the BAPEPS which will in turn share the reports on a quarterly basis with the concerned line agencies and the World Bank. IAs will be the nodal agencies for reporting to BAPEPS. Financial progress will be reported by the IAs through the quarterly FMRs. BAPEPS will create a detailed MIS for management of the information database which will be an online tool for gathering updates by the IAs. A portion of this database will also be uploaded on the project websites as part of regular information sharing with the public.

5. *Benefit Monitoring and Evaluation* A three-stage Benefit Monitoring and Evaluation (BME) study would be carried out by the BAPEPS in the project area. The study will be outsourced and will have three clear-cut stages. Stage I will setup the baseline data, Stage II will conduct midterm evaluations and Stage III will be the end of the project evaluation. The study will incorporate both qualitative and quantitative analysis and will also be used as a tool for mid-course corrections if necessary.

### Major Outcomes Expected from the Project

6. The expected outcomes from the project are: (i) recovery of affected families through provision of reconstructed houses; (ii) enhanced connectivity of affected communities by building and repairing roads and bridges infrastructure; (iii) strengthened overall flood management capacity of the state; (iv) building social and financial capital and expanding livelihood opportunities; and (v) improving the emergency response capacity for future disasters.

**Table 1: Results Framework for Project Components**

|  | <b>Key Performance Indicator(s):</b>  | <b>Means of Verification</b>  |
|--|---|---|
| <b>Outcome Level:</b>  |   |   |
| Recovery of affected families through provision of reconstructed houses, infrastructure, and new employment opportunities. | 1. Number of flood affected households having new houses in project area.<br>2. Number of villages having access to restored linkages.<br>3. Percent of households with increased access to finance through SHGs and improved employment opportunities in farm and non- farm sectors.   | - Regular progress reports from BAPEPS<br><br>- End-project Quantitative and Qualitative Survey |
| Improved knowledge and capacity for future oriented risk mitigation.   | 4. Effective disbursement (within 3 days after trigger) of contingent emergency response financing in case of future disasters.<br>5. Completion of technical studies and establishment of center of excellence to better understand the flood and sediment management.<br>6. Completion of structural investments to strengthening existing embankments. | - Regular progress reports from BAPEPS<br><br>- End-project Quantitative and Qualitative Survey |
| <b>Output Level:</b>   |   |   |
| Reconstruction of damaged houses.  | 7. Number of homes constructed.   | SRM Framework   |
| Enhancing connectivity by building and repairing roads and bridges infrastructure.   | 8. Km of roads constructed.<br>9. Number of bridges constructed.  | SRM Framework   |
| Expanding livelihoods opportunities.   | 10. Increased income by at least 30% of the baseline.   | End-project Quantitative and Qualitative Survey   |

|   | <b>Key Performance Indicator(s):</b>  | <b>Means of Verification</b> |
|---|---|------------------------------|
|   | 11. Reduced high cost debts of SHG members.   | comparison with base line    |
| Strengthening overall knowledge and capacity for flood and emergency management | 12. Km of embankments strengthened.<br>13. Number of precipitation and river flow gauge stations set up.<br>14. Flood Risk Management Plan prepared.<br>15. Asset Management Plan prepared<br>16. Amount of funds disbursed in a future emergency (if triggered). | SRM Framework                |

## **B.) Arrangements for results monitoring**

7. *Institutional issues:* The project monitoring and evaluation system will consist of a three tier system at BAPEPS, IAs, field level, and supplemented with consultants. The regular reporting of these agencies and updating of implementation progress data drawn from the duly completed questionnaires of all the stakeholders in the project at different levels/activities will assist BAPEPS in providing timely interventions at appropriate levels to remove impediments in project implementation and building capacity of stakeholders who are involved and benefiting from the project.

8. *Data collection:* Primary data relating to population, demography and other scientific and technical studies will be drawn from national accredited institutions and local administration to develop project plans. During implementation, project progress and impact data will be collected from various sources such as beneficiary communities, non-governmental organizations, community-based organizations, IAs, consultants, implementation progress reports. The costs towards supplementary support and impact assessment reports are financed under the Project Management and Implementation Support component of the project including costs of establishment of Management Information Systems (MIS) which is expected to generate reports based on the inputs drawn from all stakeholders in the project consolidated by the BAPEPS, IAs, and field level data on a monthly and quarterly basis.

9. *Capacity:* Institutions engaged in the project have capacities to avail necessary information/data. To ensure timely completion of envisaged activities under the project, the institutions will also be supplemented by consultants, and other community level stakeholders proposed to be engaged in the project. The costs towards supplementary support will be drawn from the Project Management and Implementation Support component under the project.

### Arrangements for results monitoring

| Project Outcome Indicators   | Baseline | Target Values (%) |     |     |     |     | Data Collection and Reporting |                             |                                    |
|--|----------|-------------------|-----|-----|-----|-----|-------------------------------|-----------------------------|------------------------------------|
|  |          | YR1               | YR2 | YR3 | YR4 | YR5 | Frequency and Reports         | Data Collection Instruments | Responsibility for Data Collection |
| Number of flood affected households having new houses in project area  | N/A      | 30                | 60  | 80  | 100 |     | Quarterly Progress Reports    | MIS                         | IA (DM); ODRC                      |
| Communities having access to restored linkages via new roads and bridges.  | N/A      | 10                | 60  | 90  | 100 |     | Quarterly Progress Reports    | MIS                         | BRPNN & BRRDA                      |
| Communities with increased access to finance through SHGs and improved employment opportunities in farm and non-farm sectors | N/A      | 30                | 60  | 90  | 100 |     | Quarterly Progress Reports    | MIS                         | JEEVIKA                            |
| <b>Results Indicators for Each Component</b>   |          |                   |     |     |     |     |                               |                             |                                    |
| <b>Component A: Housing Reconstruction</b>   |          |                   |     |     |     |     |                               |                             |                                    |
| 100,000 houses constructed   |          | 30                | 60  | 80  | 100 |     | Quarterly Progress Reports    | MIS                         | IA (DM); ODRC                      |
| <b>Component B: Reconstruction of Roads &amp; Bridges</b>  |          |                   |     |     |     |     |                               |                             |                                    |
| 290 Km of roads reconstructed<br>constructed<br>90 Km of bridges constructed   |          |                   | 50  | 80  | 100 |     | Quarterly Progress Reports    | MIS                         | BRPNN & BRRDA                      |
| <b>Component C: Knowledge and Capacity Building for Flood Risk Management</b>  |          |                   |     |     |     |     |                               |                             |                                    |
| 8 Km of embankments strengthened   |          | 0                 | 80  | 100 |     |     |                               |                             | WRD                                |

| Project Outcome Indicators                             | Baseline | Target Values (%) |     |     |     |     | Data Collection and Reporting |                             |                                    |
|--|----------|-------------------|-----|-----|-----|-----|-------------------------------|-----------------------------|------------------------------------|
|  |          | YR1               | YR2 | YR3 | YR4 | YR5 | Frequency and Reports         | Data Collection Instruments | Responsibility for Data Collection |
| Digital elevation model prepared.                      |          | 0                 | 60  | 100 |     |     | Quarterly Progress Reports    | MIS                         |                                    |
| Flood Risk Management Plan prepared                    |          | 0                 | 60  | 100 |     |     |                               |                             |                                    |
| Asset Management Plan prepared                         |          | 0                 | 60  | 100 |     |     |                               |                             |                                    |
| <b>Component D: Expanding Livelihood Opportunities</b> |          |                   |     |     |     |     |                               |                             |                                    |
| Increased income by at least 30% of the baseline.      |          | 0                 | 60  | 90  | 100 |     |                               |                             | JEEVIKA                            |

### Annex 3: Summary of Estimated Project Costs

#### INDIA: Bihar Kosi Flood Recovery Project

| Component  | Total       | IDA Financing | Government Financing |
|--|-------------|---------------|----------------------|
| <b>A. Housing Reconstruction (Madhepura, Supaul, Saharsa)</b>                        | <b>74.8</b> | <b>60.0</b>   | <b>14.8</b>          |
| A.1 APL Houses (20,000 houses @ Rs. 60,000/house)                                    | 25.8        | 20.7          | 5.2                  |
| A.2 BPL Houses (16,000 houses @ Rs. 60,000/house)                                    | 25.8        | 20.7          | 5.2                  |
| A.3 BPL Houses (64,000 houses @ Rs. 15,000/house - balance from IAY)                 | 19.4        | 15.5          | 3.9                  |
| A.4 Technical Assistance in Implementation (ODRC and Others)                         | 3.7         | 3.1           | 0.6                  |
| <b>B. Roads and Bridges</b>  | <b>82.3</b> | <b>70.0</b>   | <b>12.3</b>          |
| B.1 Bridges and Culverts on SH and MDR (Madhepura, Supaul, Saharsa)                  | 35.6        | 30.3          | 5.3                  |
| B.2. Rural Roads (Madhepura and Saharsa)   | 46.7        | 39.7          | 7.0                  |
| <b>C. Strengthening Flood Management Capacity</b>                                    | <b>35.3</b> | <b>30.0</b>   | <b>5.3</b>           |
| C.1 Knowledge Management and Capacity Building                                       | 11.8        | 10.0          | 1.8                  |
| C.2 Flood Forecasting and Early Warning  | 9.4         | 8.0           | 1.4                  |
| C.3 Structural Investments (Civil Works)   | 14.1        | 12.0          | 2.1                  |
| <b>D. Livelihood Support and Enhancement</b>   | <b>35.3</b> | <b>30.0</b>   | <b>5.3</b>           |
| D. 1 Community Inst. Development   | 5.2         | 4.4           | 0.8                  |
| D.2 Community Investment Fund  | 26.4        | 22.4          | 4.0                  |
| D.3 Technical Assistance Fund  | 1.8         | 1.6           | 0.3                  |
| D.4. Project Management  | 1.9         | 1.6           | 0.3                  |
| <b>E. Contingency Fund</b>   | <b>20.0</b> | <b>20.0</b>   | <b>0.0</b>           |
| <b>F. Project Management and Implementation Support</b>                              | <b>11.7</b> | <b>10.0</b>   | <b>1.7</b>           |
| E.1 PMU and other IAs  | 4.3         | 3.7           | 0.6                  |
| E.2 Multi Level Support and Monitoring for Housing Reconstruction (BAPEPS Component) | 3.2         | 2.7           | 0.5                  |
| E.3 Support Consultancies  | 4.2         | 3.6           | 0.6                  |
| <b>Total</b>   | <b>259</b>  | <b>220</b>    | <b>39</b>            |

Note: (i) All figures in USD million, (ii) Totals may not match due to rounding off.

## Annex 4: Financial Management and Disbursement Arrangements

### INDIA: Bihar Kosi Flood Recovery Project

1. The Financial Management (FM) arrangements for the project are considered to be adequate to account for and report on the project expenditure as well as satisfying the fiduciary requirements of IDA.

#### *Proposed Activities and Implementation Arrangements*

2. Bihar Aapada Punarwas Evam Punarnirman Society (BAPEPS) is a special purpose vehicle (Society) registered under the Bihar Societies Registration Act, 1860 under the administrative control of the State Planning and Development Department. BAPEPS is the designated primary entity responsible for planning, co-ordination, implementation and monitoring of the project, other than the Livelihood component which will be implemented by the Bihar Rural Livelihood Promotion Society (BRLPS)<sup>11</sup>. The State Development Commissioner is the Chairperson of BAPEPS and the overall administration is under a Project Director, an officer of the Indian Administrative Services. The Society has a General Body and an Executive Committee.

3. The project has six components viz:(A) Owner Driven House Construction; (B) Reconstruction of Roads and Bridges; (C) Strengthening Flood Management Capacity; (D) Livelihood Restoration & Enhancement; (E) Improving Emergency Response Capacity; and (E) Project Management and Implementation Support. The execution of the various components will be as follows:

| No | Component  | Executing/Implementing Agency   |
|----|--|---|
| 1  | Reconstruction of Bridges.                                       | Bihar State Bridge Construction Corporation (BRPNN)                             |
| 2  | Reconstruction of Rural Roads.                                   | Bihar Rural Roads Development Agency (BRRDA)                                    |
| 3  | Strengthening of Flood Management and Capacity.                  | Water Resources Department  |
| 4  | Housing reconstruction using owner driven construction approach. | District Administration (DA) with support of respective Block Development Units |
| 5  | Livelihood intervention.   | Bihar Rural Livelihood Promotion Society (BRLS)                                 |
| 6  | Improving Emergency Response Capacity.                           | BAPEPS  |
| 7  | Project Management and Implementation.                           | BAPEPS  |

4. BAPEPS will not be responsible for execution, which will be done through the specialized state agencies and their field formations (sub-implementing agencies). BRRDA, BRPNN, WRD and the District Administration will be the sub-implementing agencies for BAPEPS. The financial management arrangements under the project for components 1 to 3 in the above table will be centralized in BAPEPS by way of centralization of all payments based on certified bills and for component 4 payments will be made through the District/Block offices of BAPEPS. For the Livelihoods component, the BRLPS will be the implementing agency who will follow the FM systems implemented under the Jeevika project (there are no outstanding issues

<sup>11</sup> BRLPS is implementing the Bank financed Bihar Rural Livelihoods (Jeevika) Project (Loan No. 4323 IN).

regarding submission of audited financial statements, ineligible expenditure and quarterly financial reporting).

### **PFMA in Bihar**

5. The Bank had carried out Public Financial Management & Accountability Study in 2007<sup>12</sup> as part of the Developmental Policy Lending program. This study also included agency review of state owned agencies such as BRPNN and BRRDA. The conclusions of the study were that the PFMA in the state are weak and need considerable modernization. Public expenditure in Bihar was characterized by low spending and low budget utilization. This was a consequence of: (i) delayed approval of budget; (ii) centralization of decision making, i.e. approval for spending and (iii) opaque and outdated finance and procurement rules which acted as a barrier to decision making by the executive even after approval for spending.

6. Over the past three years, GoB has made notable strides in revitalizing the foundations for an effective public financial management system. The passage of the Bihar Fiscal Responsibility & Budget Management Act (FRBM) (2006), Bihar Panchayati Raj Act (2006) and the Bihar Municipal Act (2007) introduced improvements in overall fiscal governance and at the same time provided a policy framework for public financial management reforms. Legal enactments were complemented by new practices designed to improve the effectiveness of spending and transparency. These included the passage of the state budget on time<sup>13</sup> and delegations for approval of spending have been raised. In addition, the Treasury Code and Financial Rules have been re-written<sup>14</sup>, rationalizing the number of codes used in the budget<sup>15</sup>, aligning budget codes with accounting codes and reducing the number of officers authorized to draw money (now reduced to 10,000 from 50,000). The Computerized Treasury Management & Information Systems (CTMIS) which involved upgrading and networking of the treasuries (59 treasuries and sub treasuries) has been completed resulting in 'real time' information on budgets and its utilization being available to departmental heads.<sup>16</sup> This is a significant achievement in a short period of time.

### **Project FM arrangements**

7. **Budgeting:** The funds requirement for the project activities (Bank share and counterpart funding) will be budgeted under the Planning and Development Department (demand no. 35) for all components as Grant in Aid. This will facilitate transfer of funds to BAPEPS and BRLPS as grants which shall not lapse at the end of the budget year. Each sub-implementing agency will submit their Annual Work Plans (AWP) and projected funds requirement to BAPEPS who will review & consolidate them and after approval from its General Body, will submit it to the Finance Department, through the Administrative Department, for necessary budget provision in the state budget. BRLPS will likewise prepare the AWP/budget for the Livelihood component.

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<sup>12</sup> Report dated June 2008

<sup>13</sup> In February/March of previous financial year

<sup>14</sup> The treasury rules (one fourth the size of the old) are awaiting cabinet approval, while the finance rules (half the size of the old) developed by the consultants are being reviewed by the Finance dept.

<sup>15</sup> The number of object heads (including sub-object heads) has been reduced from over 600 to 68. This will not only make the budget process more efficient, but also the execution, accounting and financial reporting. In 2009-10 all budget lines in the plan budget have assigned object heads as against only 67% in the 2007-08 plan budget. The number of operational budget sub-heads has been reduced by half in the 2009-10 Budget. This impacts the efficiency by significantly reducing the need for re-appropriations, more accurate and timely accounting and financial reporting.

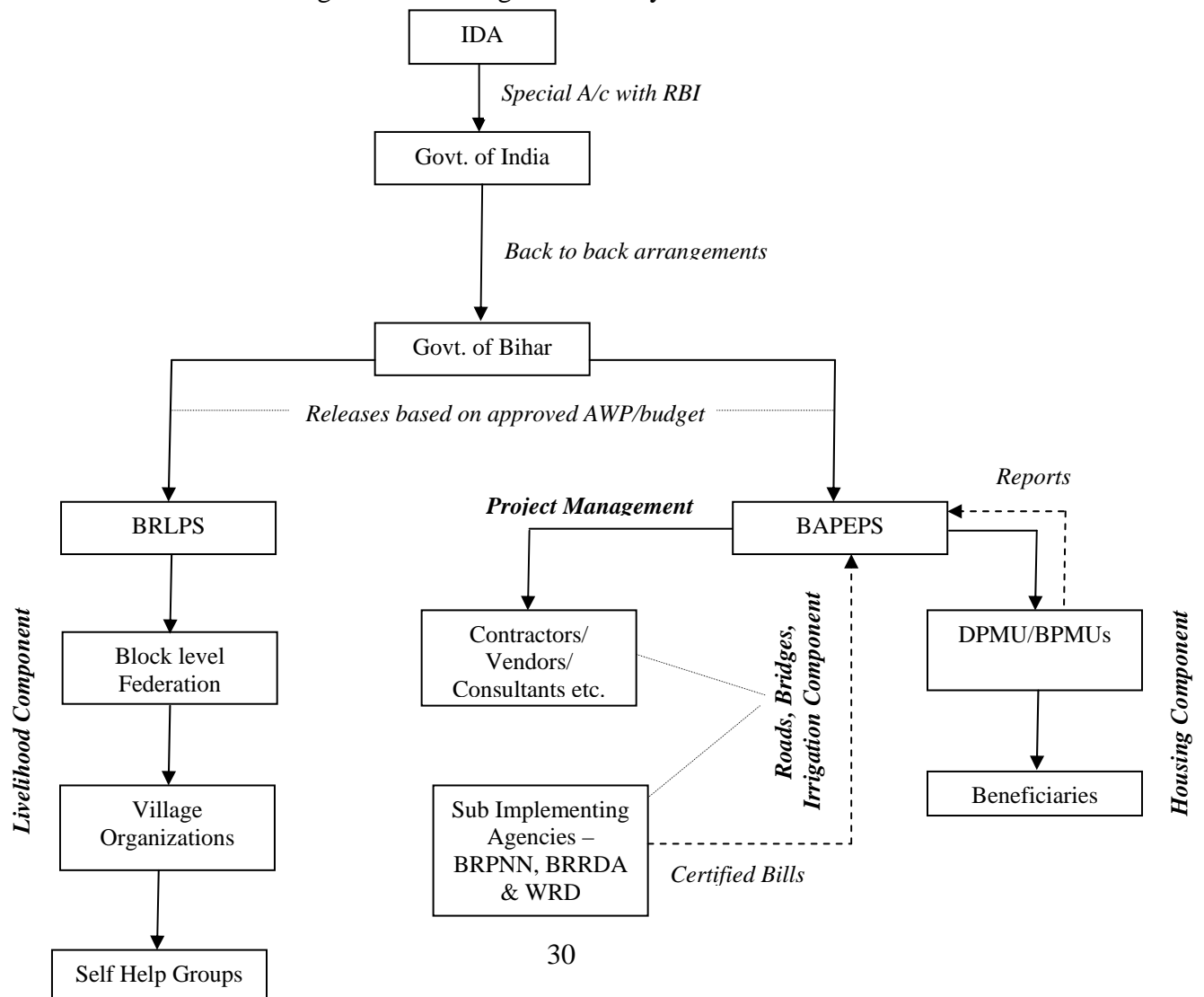
<sup>16</sup> This is however currently for all the civil departments, while the works department accounting is directly to the state AG albeit with considerable delays.

This process will follow the budget cycle of GoB. The proposed budget lines for the project have been approved by the state AG and process of budget provision has been initiated by the Planning Department

8. **Flow of Funds:** BAPEPS and BRLPS will draw need based funds based on their approved AWP from the state budget through the Treasury as Grant in Aid and deposit it in separate dedicated project bank accounts. Subsequent withdrawals will be based on actual utilization. The sub-implementing agencies namely BRPNN, BRRDA and WRD will submit their certified expenditure bills, etc. to BAPEPS who will make payments directly to the contractors/vendors etc. In the case of the Housing component, BAPEPS will transfer funds to its block level office who will then pass on the funds as grants to the beneficiaries (in three tranches), based on achievement and certification of milestones as described in OM. Funds transferred to district/block level office of BAPEPS will be kept in dedicated project bank accounts. In addition, district and block level offices of BAPEPS will also be provided imprest to meet the project management expenses.

9. Under this approach, the payments will be centralized (at BAPEPS and BRLPS) which will have the advantage of uniform FM arrangements including lesser number of accounting centers, minimum level of advances and faster compilation of financial information.

10. The fund flow arrangements are diagrammatically shown below.



11. **Accounting and Internal Controls:** Primarily, there will be two accounting centers – one at the BAPEPS level and the other at BRLPS, which will include its field level offices at the districts/blocks. Both the implementing agencies will follow a cash basis of accounting on a double entry system. A Financial Management Manual (FMM) for the project (applicable to BAPEPS only) has been developed which details the project FM procedures. BAPEPS will install an off the shelf accounting software (TALLY), so that accounting is automated since inception. The FMM includes a chart of accounts which will facilitate the capture of transactions according to activities (component and/or natural heads) and linked with financial reporting. BAPEPS will engage Procurement and Financial Management Consultants (PFMC) to support them in finance and accounts matters. The TOR for the PFMC is included in the FMM.

12. *Roads, Bridges and Irrigation Components:* The sub-implementing agencies namely BRPNN, BRRDA and WRD will get the approved works executed, have the measurement done and prepare and approve the bills as per their departmental rules and regulations (primarily the Bihar Public Works Departmental Code). These certified bills will be forwarded to BAPEPS which will verify the bills and post approval payments will be made directly to the contractor preferably through an Electronic Funds Transfer system. The statutory deductions such as TDS, sales tax, etc. will be made by BAPEPS who will deposit these with the government authorities and issue necessary certificates to the contractors. Each sub-implementing agency will be responsible for maintaining contract registers, guarantee registers and other essential records, which will be reviewed by the project auditors appointed by BAPEPS. Incremental operating costs of these sub-implementing agencies (other than regular staff costs), within an overall ceiling as approved by BAPEPS annually, will be reimbursed by BAPEPS on a periodic basis on submission of supporting documents.

13. The *Housing component* will be implemented with the Owner Driven Reconstruction Collaborative (ODRC) support structure. The tranche releases (grants) to beneficiaries and will be based on achievement of and certification of milestones for each tranche (detailed conditions included in the Operations Manual). Tranche releases will be made directly to beneficiaries' bank accounts by way of payment advises in line with GoB's current operating procedures for Kosi Rehabilitation. As tranche releases to beneficiaries are based on milestones, such actual transfers to the beneficiaries by the block level office of the BAPEPS will be considered as project expenditure. The control framework for the housing component will also include: (i) a public disclosure policy at local level and also on the website of BAPEPS; and (ii) supported by appropriate grievance redress mechanism (at the block, sub-division and district levels). The offices of the District Magistrates and BDOs along with BAPEPS's district and block level offices will monitor the Housing component.

14. *Livelihoods component:* BRLPS already uses TALLY for its accounting and a Jeevika project specific FMM and a Community Operations Manual (COM) is in place that detail the accounting and FM processes including funds flow, budgeting, internal controls and audit arrangements, and these will be adopted for the Livelihood component in the Kosi project. Accounting will be done as per system already established in BRLPS. The accounting function is headed by a Chief Finance Officer from the Finance cadre of GoB supported by Financial Management Technical Support Consultants (FMTSC) for accounting support and a team of accountants at the field level. BRLPS will follow the internal control systems already established for the Jeevika Project and detailed in its FMM and finance and administrative rules. BRLPS has

also established a system of internal audit through a firm of Chartered Accountants and the scope will be extended to cover the project as well.

15. **Finance staffing:** For the newly created BAPEPS, an officer will be deputed to the Society as Deputy Director (Finance). He/she will be supported by a Finance and Accounts Manager (either a qualified accountant or an officer on deputation). The core team of finance staff will be supported by PFMC essentially for the accounting system (i.e. data entry in TALLY, consolidation and preparation of IUFR and PFS) at BAPEPS on terms of reference agreed with the Bank. An accountant from the department has been posted to BAPEPS. BRLPS will use its existing staff/Consultants for the Project and recruit additional staff for the three new districts and blocks.

16. **Financial Reporting:** Financial reporting will be through quarterly Interim Unaudited Financial Reports (IUFR) and annual Project Financial Statements (PFS) separately for BAPEPS (components other than Livelihood) and BRLPS (for Livelihood component). The IUFR will provide component/sub component wise expenditure for the quarter, year - and cumulative - to date along with contract-wise expenditure and details of transfers to the beneficiaries under the Housing component and will be submitted within 45 days of the close of the quarter. IUFR format is included in the FMM and will be agreed during negotiations. The IUFRs will also be the basis for disbursement. The IUFR of BRLPS (for the Livelihood component) will be segregated into two parts – one for the existing project and the other for the Kosi project (i. e. covering the three districts of Madhepura, Supaul and Saharsa).

17. BRDSS will prepare annual PFS comprising of a balance sheet and sources and uses of funds along with the IUFRs submitted and a reconciliation of claims with the audited expenditure. Format of the PFS is included in the project FMM. BRLPS already prepares annual PFS for the Jeevika Project. For the Bihar Kosi project, BRLPS will include a separate schedule detailing the expenditure incurred as part of its PFS. The PFS will be audited by external auditors and the audited PFS will be submitted to the Bank within six months from the close of the year.

18. **External Audit:** (a) The audit of project accounts of BAPEPS will be conducted by an independent firm of Chartered Accountants acceptable to the Bank on terms of reference agreed with the Bank. The external auditors will also carry out quarterly reviews of sub-implementing units while certifying the annual financial statements of BAPEPS for each year ending 31<sup>st</sup> March. With centralization of funds flow and significant payments at BAPEPS level, the external audit of the project will be concentrated at the society level with sample coverage of sub-implementing agencies to review subsidiary records (including beneficiary records and payments under the housing components, contract registers, measurement books and bank guarantee documents pertaining to contracts at the sub-implementing agencies) every quarter on a rotational basis; (b) *Livelihoods component:* Project accounts of the Jeevika project is already being audited by a firm of Chartered Accountants under terms of reference agreed with the Bank. BRLPS will include a separate schedule for the Kosi Project in Jeevika's PFS which will be audited by the BRLPS's external auditors; (c) Additionally, an audit report on the Designated Account held with the Government of India (GoI) will also be submitted in the standard manner and time.

19. The following audit reports will be monitored in ARCS:

| Implementing Agency | Audit Report   | Auditors   | Date                            |
|---------------------|--|--|---------------------------------|
| BAPEPS              | Audit Report on the PFS of the Project (other than Livelihood component)                                     | Firm of Chartered Accountants acceptable to the Bank | 30 <sup>th</sup> Sept each year |
| BRLPS               | Entity Audit Report of Jeevika with Project expenditure as a separate schedule, for the Livelihood component |  |                                 |
| DEA/GoI             | Designated Account   | C & AG   |                                 |

20. **Significant Risks and Mitigation Measures**

| Risk                 | Risk Rating | Risk Mitigating Measures incorporated in Project Design   | Residual Risk Rating | Conditions for Negotiation, Board, Effectiveness, legal covenants, if any |
|----------------------|-------------|---|----------------------|---|
| <b>Inherent Risk</b> |             |   |                      |   |
| Country              | Moderate    | This refers to the Government of India. While a CFAA has not been carried out in India, this is based on the literature survey and other studies such as the study on PFMA in CSS and other state level SFAA's carried out by the Bank.   | Moderate             |   |
| State                | High        | <i>Since multiple departments will be involved in project implementation, there may be a risk of delay in timely financial reporting, adherence to internal controls and auditing.- A separate legal entity (BAPEPS) has been created that will implement the project (other than the Livelihoods component). The Livelihood component will be implemented by another legal entity (BRLPS) in existence which is implementing the Bank assisted Jeevika Project. These entities have their own General Body and Executive Committee, financial management systems, delegation and transparency and disclosure arrangements.</i> | Moderate             |   |
| Project              | Substantial | <i>Since BAPEPS is a new entity, there may be delay in institutionalizing the FM arrangements and its effective implementation, including recruitment of adequate finance staffing.- Finance and accounts function in BAPEPS will be under an official of the State treasury or Finance Services cadre and assisted by a Finance and Accounts Manager (a</i>  | Substantial          | PFMC to be contracted by January 15, 2011.                                |

| <b>Risk</b>         | <b>Risk Rating</b> | <b>Risk Mitigating Measures incorporated in Project Design</b>  | <b>Residual Risk Rating</b> | <b>Conditions for Negotiation, Board, Effectiveness, legal covenants, if any</b> |
|---------------------|--------------------|---|-----------------------------|--|
|                     |                    | qualified CA or an officer from the Central Finance Services) supported by a PFMC for accounting & TORs are included in the FM manual   |                             |  |
| <b>Control Risk</b> |                    |   |                             |  |
| Budgeting           | Substantial        | <i>There may be a risk of inadequate budget provision leading to delay in fund flow to BAPEPS and BRLPS- Budget Lines for project approved by State AG and proposal for budget provision has been initiated by planning dept.</i>   | Moderate                    |  |
| Accounting          | Substantial        | A project specific FM Manual for BAPEPS developed and standard accounting software (TALLY) will be installed in BAPEPS.<br><br>For Livelihoods component, BRLPS already has the necessary FM arrangements in place.   | Substantial                 | PFMC to be contracted by January 15, 2011.                                       |
| Funds Flow          | Moderate           |   | Moderate                    |  |
| Internal Controls   | Substantial        | <i>The project is expected to involve execution of large number of civil works contracts. Therefore, efficient contract management will be crucial.</i> - The internal controls for BAPEPS have been documented in the FM Manual and the operations manual. The public works department/ agencies will follow their own established departmental procedures largely based on the Bihar Public Works Department Code that have recently been updated. BAPEPS will exercise the necessary oversight function over contract management by way of quarterly audit. For the <i>Housing component</i> , the ODRC support structure will be adopted. | Substantial                 |  |
| Financial Reporting | Substantial        | <i>Financial reporting of project expenditure may be delayed.-</i> BAPEPS and BRLPS will report expenditure through quarterly IUFs, formats. Since significant payments will be centralized, it is envisaged that availability of financial   | Moderate                    |  |

| Risk     | Risk Rating | Risk Mitigating Measures incorporated in Project Design  | Residual Risk Rating | Conditions for Negotiation, Board, Effectiveness, legal covenants, if any |
|----------|-------------|--|----------------------|---|
|          |             | information would not be a constraint. BRLPS has already established a system of submitting the IUFrs regularly for the Jeevika project.   |                      |   |
| Auditing | Substantial | Annual audit of BDRSS will be conducted by an independent firm of Chartered Accountants acceptable to the Bank. BRLPS already has satisfactory audit arrangements and is regular in submitting audited financial statements for the Jeevika project; the audit of the Project's transactions for <i>Livelihoods component</i> will be included in the audit TOR. | Moderate             |   |

21. The overall FM risk is assessed as **Substantial**.

#### Disbursement Arrangements

22. **Designated Account:** An initial advance of US\$20 million (which can be increased to US\$30 million based on cash flow and budget requirements of the project) would be deposited into the segregated Designated Account maintained in USD at Reserve Bank of India, Mumbai, by CAAA, GoI. Withdrawals from the designated account will be on the basis of withdrawal applications to the extent of reported expenditure in IUFrs from BRLPS for the Livelihood Component and BAPEPS for all the other components. As per standard Centre- State mechanism of Additional Central Assistance, GoI will transfer the funds from the Bank to GoB on a back to back basis. Advances into the designated account would be processed by CAAA.

| Component                             | Agency responsible | Format   |
|---------------------------------------|--------------------|--|
| Livelihoods                           | BRLPS              | IUFR already in use in Jeevika Project but separately for the three districts under Kosi Project |
| All components other than Livelihoods | BAPEPS             | IUFR as provided in the FM Manual  |

23. **Retroactive Financing:** Retroactive expenditure will be eligible for financing subject to compliance with Bank's procurement procedures, where applicable. For Retroactive Financing, BAPEPS/BRLPS will submit a separate stand alone audited IUFR certifying the actual expenditure incurred on the project. In respect of expenditure under the *Housing component*, for which funds have already been released by GoB to the District magistrates/BDOs, the IUFR for retroactive financing will include a list of beneficiaries supported by: (i) confirmation of actual credit of first installment to the bank accounts of the beneficiaries; and (ii) confirmation of compliance with milestones for release of first installment and will be signed by District Magistrate. For the *Livelihoods component* the expenditures for the 3 flood affected districts incurred after July 1, 2010 will be eligible for retroactive financing under this project.

24. The IDA funds will be disbursed against eligible expenditure through the following categories.

| <b>Disbursement Category</b>  | <b>Amount of the Credit Allocated (expressed in million US\$)</b> | <b>Amount of the Credit Allocated (expressed in SDR)</b> | <b>% of expenditures to be Financed (inclusive of taxes)</b> |
|---|---|--|--|
| (1) Grants to beneficiaries for housing Reconstruction under component A.   | 56.90   | 38,500,000   | 80%  |
| (2) All goods, works services, technical assistance, training and operating cost under component A, B, C and F.     | 113.10  | 76,500,000   | 85%  |
| (3) All goods, works services, technical assistance, training, operating cost and grants to CBOs under component D. | 30.00   | 20,300,000   | 85%  |
| (4) Goods, works, and services related to emergency recovery under component E.                                     | 20.00   | 13,500,000   | 100%   |
| <b>Total</b>  | <b>220.00</b>   | <b>148,800,000</b>                                       |  |

### **Implementation Support Plan**

25. The Bank will provide intensive implementation support in the initial years for ensuring implementation of the agreed FM arrangements and reviewing its continuing adequacy. Early during implementation, the focus would be on the housing component, including review of efficiency of the payment process to individual beneficiaries, identify constraints if any, relating to bank account opening, delays in payments and explore options for payment service models with bank and payment service providers. This will comprise of bi-annual implementation support missions every year, including field visits for review of the housing component. The audited PFS and IUFs will be reviewed and discussed with BAPEPS/BRLPS for mitigation of any issues raised by the auditors. At mid-term, a comprehensive review of FM performance would be conducted and mid-term corrections made, wherever necessary.

## Annex 5: Procurement Arrangements

### INDIA: Bihar Kosi Flood Recovery Project

#### A. General

1. Procurement for the proposed project would be carried out in accordance with the World Bank's "Guidelines: Procurement under IBRD Loans and IDA Credits" dated May 2004 revised October 2006 and May 2010 and "Guidelines: Selection and Employment of Consultants by World Bank Borrowers" dated May 2004 revised October 2006 and May 2010, and the provisions stipulated in the Project Agreement. For each contract to be financed by the Credit, the different procurement methods or consultant selection methods, the need for prequalification, estimated costs, prior review requirements, and time frame are agreed between the Borrower and the Bank project team in the Procurement Plan. The Procurement Plan will be updated at least annually or as required to reflect the actual project implementation needs and improvements in institutional capacity.

2. **Procurement of Works:** Works procured under this project would include bridges, culverts and their approaches by Bihar Rajya Pul Nirman Nigam Limited (BRPNN), rural roads by Bihar Rural Roads Development Agency (BRRDA) and embankment strengthening and other irrigation works by Water Resources Department (WRD). These works will be mostly procured following NCB and may involve shopping in some cases. The procurement of civil works is not likely to involve any ICB. The Standard Bidding documents of the Bank as agreed with GoI task force (and as amended from time to time) for all procurement under NCB will be used. If there are any ICB/ LIB contracts, then the Bank's latest Standard Bidding Documents (SBDs) will be used.

3. **Procurement of Goods:** Goods procured under this project would include Hydrological equipments, office and IT equipment and specialized software like Arc GIS, ERDAS Imagine software, etc by WRD and Bihar Aapada Punarwas Evam Punarnirman Society (BAPEPS). While software being proprietary in nature will be procured by direct contracting, other goods will be procured by ICB, NCB, Shopping and or using DGS&D rate contract within shopping threshold. The Standard Bidding documents of the Bank as agreed with GoI task force (and as amended from time to time) for all procurement under NCB will be used. For ICB/ LIB contracts, the Bank's latest Standard Bidding Documents (SBDs) will be used.

4. **Selection of Consultants:** The consultants required for the project will be hired by BAPEPS and WRD. Some of the consultants that will be hired are Procurement and FM Consultant; Technical studies, modeling, geotechnical & other investigations for Flood Management; Embankment Asset Management System; Master Plan for Flood and Sedimentation Management; Design of flood forecasting and early warning system; External Auditor; TA for Implementing Owner Driven Housing Component [Owner Driven Reconstruction Collaborative (ODRC) will be hired following SSS]; Third Party QA Consultant, External M&E Consultant; and Development of MIS. Short lists of consultants for services estimated to cost less than \$500,000 or equivalent per contract may be composed entirely of national consultants in accordance with the provisions of paragraph 2.7 of the Consultant

Guidelines. The Bank's Standard Request for Proposal Document will be used as a base for all procurement of consultancy services to be procured under the Project.

5. **Training:** Training will cover study tours, workshops, training for staff, etc. These shall be carried out in accordance with staff development plans prepared by the BAPEPS and agreed with the Bank.

6. **Owner driven housing reconstruction component:** The houses are constructed following direct cash transfer to the beneficiaries and no procurement is involved.

7. **Livelihood Restoration and Enhancement component:** This component will be implemented by the Bank financed Bihar Rural Livelihood Project (BRLP) [implemented by a society called JEEVIKA] following the procurement arrangement already agreed in the BRLP following revised Guidelines, May 2010.

8. The procurement of satellite imagery from NRSA or any revenue maps from GoB or procuring from any government department which does not fulfill provisions of paragraph 1.8 (c) of Bank's Guidelines for procurement of goods and works and centage charges, if any, paid to BRPNL, BRRDA or any other agency by GoB or BAPEPS will not be eligible for the Bank financing. It was agreed that this expenditure will be met from GoB's own funds/counterpart funds. During implementation if such requirements arise, those will be financed from the governments' own resources.

## **B. Assessment of the agencies' capacity to implement procurement**

10. The nodal agency for implementing the project is BAPEPS and that has been newly created. The primary responsibility for procurement of works for construction of bridges, culverts and approaches will be of BRPNN, for construction of rural roads will be of BRRDA, for strengthening flood management capacity and strengthening of embankments will be Water Resources Department (WRD). The procurement of goods required for water resources component will be handled by WRD and other goods by BAPEPS. All consulting services will be procured by BAPEPS and WRD. The Primary responsibility for implementing livelihood component will be with "Jeevika".

11. The Bank team carried out rapid procurement capacity assessment of implementing agencies [WRD, BPNN and BRRDA]. Some of the deviations in comparison with Bank's Procurement Guidelines noticed in procurement procedure followed by these agencies are: (i) two envelop system; (ii) percentage contracts instead of item rate contracts, (iii) Maximum Liquidity Damages [LD] is 5 percent instead of 10 percent, (iv) provision to supply material instead single responsibility basis; and (v) lack of provision for advance payment. The BRPNN and BRRDA have no previous experience in implementing projects following Bank Procurement Guidelines.

12. Considering limited procurement capacity to procure following Bank Procurement Guidelines in BRPNN and BRRDA, but the inherent technical competency within these agencies, the Bank has agreed on a procurement mechanism wherein the IAs will prepare the

bidding documents and technical specification; invite and receive bids on behalf of the BAPEPS; prepare bid evaluation reports; sign the contracts and execute, supervise and monitor the works. BAPEPS will approve bidding documents before invitation and award recommendations before contract award with the support of Procurement and Financial Management Consultant (PFMC). The project has prepared a robust procurement manual which will guide the IAs during implementation.

13. The Bihar Water Resources Department (WRD) has implemented FMIS project Phase I with the Bank funded grant and Phase II has recently commenced. Under the Phase I (2006-08), the FMIS Cell was established and selected staff have been given training in World Bank procurement guidelines. In the current investment, using this expertise, the WRD would be responsible for procurement of goods, works and consulting services.

14. The BAPEPS will be assisted by a PFMC with procurement and FM specialists. The Project Director (PD) will be assisted by a Procurement Manager and Finance Manager in managing the procurement approvals. The PD will have full powers to approve all procurement decisions once procurement plan is cleared by the Empowered Committee (EC).

15. Where ever required the goods will be pre-inspected by an inspection agency hired by the project. There will be third party Quality Audit consultants to assist BAPEPS in effective quality management of all civil works during implementation

**C. Procurement Risks and Mitigation Measures**

16. **Procurement Risk Mitigation:** The main procurement risks that can be perceived at this stage, based on the general public financial management in the country and in the state and the assessment carried out, are that (i) procurement of goods, works and consulting services at state and district levels has normal fiduciary risks of transparency and fairness, (ii) low capacity in developing right specifications for major equipment/goods , identifying right market, inability to influence the market in receiving appropriate pricing and delivery commitments, (iii) inadequate record keeping; (iv) absence of an operating grievance/complaint monitoring system, (v) lack of appropriate dispute resolution procedures and lack of established system of public disclosure of information on procurement actions, and (vi) possible collusive practices in procurement of works. Further, the implementing agencies such as BRPNN and BRRDA in the project have very limited experience or capacity in implementing Bank financed project/procurement.

17. The above and the other applicable deficiencies have been addressed by the following risk mitigation measures:

| <b>Risk Factor</b>                          | <b>Initial Risk</b> | <b>Mitigation Measure</b>  | <b>Residual Risk</b> |
|---|---------------------|--|----------------------|
| Incomplete record keeping and documentation | Substantial         | <ul style="list-style-type: none"> <li>• BAPEPS and implementing agencies will be trained in the beginning of the project.</li> <li>• Monitoring during post review by Bank team</li> <li>• BAPEPS to keep records in addition to implementing agencies</li> </ul> | Moderate             |

| <b>Risk Factor</b>  | <b>Initial Risk</b> | <b>Mitigation Measure</b>   | <b>Residual Risk</b> |
|---|---------------------|---|----------------------|
| Inadequate experience with Bank proc. procedures                            |                     | <ul style="list-style-type: none"> <li>• Use of the Procurement Support Consultants at BAPEPS and developing robust procurement manual.</li> </ul>  | Moderate             |
| No uniform procurement procedures and SBDs across the implementing agencies | Substantial         | <ul style="list-style-type: none"> <li>• Bank Procurement Guidelines, SBDs will be used by all the implementing agencies to have uniformity in procurement under the project.</li> <li>• Preparation and use of Procurement Manual.</li> </ul>  | Moderate             |
| Inefficiencies and delays in procurement process                            | High                | <ul style="list-style-type: none"> <li>• Technical support to implementing agencies</li> <li>• Time line to finalize the tenders/selections has been specified in the Procurement Manual.</li> <li>• The Project Director, BAPEPS will have full powers</li> <li>• Use of the Procurement Support Consultants in BAPEPS</li> </ul>  | Substantial          |
| Insufficient competition in procurement                                     | High                | <ul style="list-style-type: none"> <li>• Publishing the GPN close to project launch in the regional and national newspapers.</li> <li>• Development of website for BAPEPS.</li> <li>• Publishing all SPNs in the project website in addition to a national newspaper.</li> <li>• Publishing procurement Plan and specifications of equipments in the website early.</li> <li>• Agreement to disclose all contract awards of NCB in the BAPEPS and Implementing Agencies websites.</li> <li>• Publishing list of purchase orders/contracts placed every month in the BAPEPS and Implementing Agencies websites.</li> </ul> | Substantial          |
| Contract management   | High                | <ul style="list-style-type: none"> <li>• Inward goods inspections will be undertaken.</li> <li>• Hiring third party QA consultant for civil works</li> <li>• A quarterly report of all the ongoing contracts: a detailed status report including contract management issues such as delays, payments, etc will be submitted to the Project Director, BAPEPS for review (also submitted to the Bank) by implementing agencies.</li> </ul>  | Substantial          |
| Probability of staff handling procurements being transferred                | Substantial         | <ul style="list-style-type: none"> <li>• Transfer of Procurement staff after they have undergone training is a possibility. The implementing agencies will endeavor that the trained procurement staff will normally not be transferred during the project's life.</li> <li>• Support consultants from BAPEPS will provide continuous support.</li> </ul>   | Moderate             |
| Fraud and corruption risks in contracting process                           | High                | <ul style="list-style-type: none"> <li>• Disclosure of contract opportunities, contract award decisions, internal/external procurement and financial audits</li> <li>• Measures to improve competition such as broad technical specifications, realistic post qualification</li> </ul>  | Substantial          |

| Risk Factor                      | Initial Risk | Mitigation Measure   | Residual Risk      |
|----------------------------------|--------------|--|--------------------|
|                                  |              | <ul style="list-style-type: none"> <li>criteria, appropriate contract packaging.</li> <li>• Better complaint Handling, MIS, documentation.</li> <li>• Training in detecting fraud and corruption indicators to implementing agencies staff by hiring a consultant with requisite skills by the BAPEPS.</li> </ul>  |                    |
| Weak complaint redress mechanism | Substantial  | <ul style="list-style-type: none"> <li>• A complaint handling mechanism has been specified in the procurement manual.</li> <li>• A Half yearly report of all complaints received and action taken will be submitted to the Project Director, BAPEPS for review (also submitted to the Bank) by implementing agencies. This will also be disclosed in the public domain.</li> </ul> | Moderate           |
| <b>Overall Risk</b>              | <b>High</b>  |  | <b>Substantial</b> |

18. In view of limited capacity and decentralized nature, the overall project risk for procurement is ‘High’. After mitigation measures the residual risk will be ‘substantial’

19. **Disclosure:** The following documents shall be disclosed in the BAPEPS and in implementing agencies websites [until the website is ready, in the notice boards]: (i) procurement plan and updates, (ii) invitation for bids for goods and works for all ICB and NCB contracts, (iii) request for expression of interest for selection/hiring of consulting services, (iv) contract awards of goods and works procured following ICB/NCB procedures, (v) list of contracts/purchase orders placed by IAs and BAPEPS following shopping procedure on quarterly basis, (vi) short list of consultants, (vii) contract award of all consultancy services, (viii) list of contracts following DC or CQS or SSS on a quarterly basis, and (xi) action taken report on the complaints received on a half yearly basis.

20. The following details shall be sent to the Bank for publishing in the DgMarket and UNDB: (a) invitation for bids for procurement of goods and works using ICB procedures, (b) request for expression of interest for consulting services with estimated cost more than \$200,000, (c) contract award details of all procurement of goods and works using ICB procedure, (d) contract award details of all consultancy services with estimated cost more than \$200,000, and (e) list of contracts/purchase orders placed following SSS or CQS or DC procedures on a quarterly basis.

21. Further the BAPEPS and the implementing agencies will also publish in their websites, any information required under the provisions of suo moto disclosure as specified by the Right to Information Act.

22. **Complaint Handling Mechanism:** To deal with the procurement complaints received by the IAs and BAPEPS, a complaint handling mechanism will be developed at an appropriate level. On receipt of complaints, immediate action will be initiated to redress the grievances. All complaints will be dealt at levels higher than that of the level at which the procurement process was undertaken. Any complaint received will be forwarded to the Bank for information and the Bank will be kept informed after the complaint is redressed.

#### **D. Agreed Procurement Arrangements**

23. **Procurement Plan:** The Borrower, at appraisal, developed a procurement plan for project implementation which provides the basis for the procurement methods. This plan has been agreed between the Borrower and the Bank's project team and is available in the project files. It will also be available in the BAPEPS and in implementing agencies websites, and in the Bank's external website.

24. **Procurement Manual:** BAPEPS has prepared a procurement manual to guide the implementing agencies at all the levels in handling the procurement conforming to the Bank Guidelines for Procurement. No amendment to the procurement manual shall be carried out without review and clearance from the Bank.

25. **Procurement Staff:** Most of the Procurement would be carried out at the IAs with the support of PFMC hired by BAPEPS. The IAs will identify the procurement staff and BAPEPS will hire ASCI to conduct procurement training. This training will be repeated every year. The BAPEPS will have procurement manager who could be civil servant or a consultant.

26. **Standard Bidding Documents:** The Standard Bidding documents of the Bank as agreed with GoI task force (and as amended from time to time) for all procurement under NCB will be used. For ICB/ LIB contracts Bank's latest Standard Bidding Documents (SBDs) only will be used. The following conditions must be met in order for the bidding process under NCB to be acceptable to the Bank

- a) only the model bidding documents for NCB agreed with the GOI Task Force (and as amended from time to time) shall be used for bidding;
- b) invitations to bid shall be advertised in at least one widely circulated national daily newspaper, at least 30 days prior to the deadline for the submission of bids;
- c) no special preference will be accorded to any bidder either for price or for other terms and conditions when competing with foreign bidders, state-owned enterprises, small-scale enterprises or enterprises from any given state;
- d) except with the prior concurrence of the Bank, there shall be no negotiation of price with the bidders, even with the lowest evaluated bidder;
- e) extension of bid validity shall not be allowed without the prior concurrence of the Bank for the first request for extension if it is longer than four weeks; and for all subsequent requests for extension irrespective of the period;
- f) re-bidding shall not be carried out without the prior concurrence of the Bank. The system of rejecting bids outside a pre-determined margin or "bracket" of prices shall not be used in the project;
- g) rate contracts entered into by DGS&D will not be acceptable as a substitute for NCB procedures. Such contracts will be acceptable however for any procurement under Shopping procedures; and
- h) two or three envelop system shall not be used.

27. **Methods of procurement:** The following methods of procurement shall be used for procurement under the project. It has been agreed that if a particular invitation for bid comprises of several packages, lots or slices, and invited in the same invitation for bid, then the aggregate

value of the whole package determines the applicable threshold amount for procurement and also for the review by the Bank.

| Category                          | Method of Procurement  | Threshold (US\$ Equivalent)   |
|-----------------------------------|--|---|
| Goods and Non-consultant services | ICB  | >300,000  |
|                                   | NCB  | 300,000 or less   |
|                                   | Shopping   | Up to 30,000  |
|                                   | DC   | As per Para 3.6 of the Bank Guidelines, wherever agreed and with prior agreement with the Bank  |
| Works and Supply and Installation | ICB  | > 10,000,000  |
|                                   | NCB  | 10,000,000 or less  |
|                                   | Shopping   | Up to 30,000. carried out through a qualified local contractor selected through shopping (after inviting a minimum of three quotations in response to a written invitation with a minimum of 15 days notice period) |
|                                   | Force Account  | wherever agreed and with prior agreement with the Bank  |
|                                   | DC   | As per Para 3.6 of the Bank Guidelines, wherever agreed and with prior agreement with the Bank  |
| Consultants' Services             | CQS  | Up to 200,000 per contract  |
|                                   | SSS  | with prior agreement of the Bank  |
|                                   | Individuals  | No limit  |
|                                   | Use of NGO   | As per Para 3.16 of Guidelines  |
|                                   | QCBS/QBS/FBS/LCS<br>(i) International shortlist<br>(ii) Shortlist may comprise national consultants only | No limit<br>>500,000<br>Up to 500,000   |

28. **Special Procurement Arrangement: (a) Procurement Arrangement for Component D - Livelihood Restoration and Enhancement:** This component will be implemented by Jeevika and will follow the procurement arrangement and thresholds of Bihar Rural Livelihood Project [Project ID: P090764 and Credit Number: 4323] following revised Guidelines, May 2010. (b) **Procurement Arrangement for Component E - Improving Emergency Response Capacity:** In case calamity is declared by the GoB and notified to the Bank, the items indicated in the positive list in the operational manual will be procured following the procurement methods indicated in Para 27.

29. **Prior review by the Bank for works and goods:** All ICB contracts and the first two NCB contract of works and goods from each implementing agency and subsequent contracts above US\$ 2 million for works and US\$300,000 and above for goods; and all contracts awarded on direct contracting method irrespective of value will be subject to prior review by the Bank.

30. **Prior review by the Bank for consultancy services:** First contract of any value each from BAPEPS and WRD; subsequent contract valued over US\$200,000 equivalent for firms

including NGOs, and above US\$50,000 equivalent for individuals; all contracts to be awarded on single source selection basis irrespective of value will be subject to prior review by the Bank.

31. **Post Review by the Bank:** All contracts not covered under prior review will be subject to post review during supervision missions, and/or review by consultants to be appointed by the by Bank.

32. **Procurement Review by BAPEPS:** Independent review or audit will be undertaken for the project for BAPEPS's own internal due diligence, and as agreed in the implementation arrangements for the project.

- BAPEPS will provide procurement clearance of bid documents and BERs for procurement of works and goods by IAs with the support of PFMC for all post review cases. For prior review cases, the BAPEPS will carry out initial review with the support of PFMC and then forward it to the Bank for no-objection.
- **External audit:** The external auditor appointed by the BAPEPS will conduct the audit of all implementing agencies and BAPEPS including procurement review/audit. In case there is any procurement related observation made by the external auditor in their audit report, the same shall be shared with Bank along with the comments of BAPEPS.

#### **E. Frequency of procurement supervision**

33. Given the large number of contracts, geographical spread and the general risks involved, a minimum of two implementation support missions a year is planned. In addition, the Bank will also carry out an annual ex-post review of procurement that falls below the prior review threshold. Bank will also carry out small thematic and focused Mission depending on the need and as required with agreement from the Project.

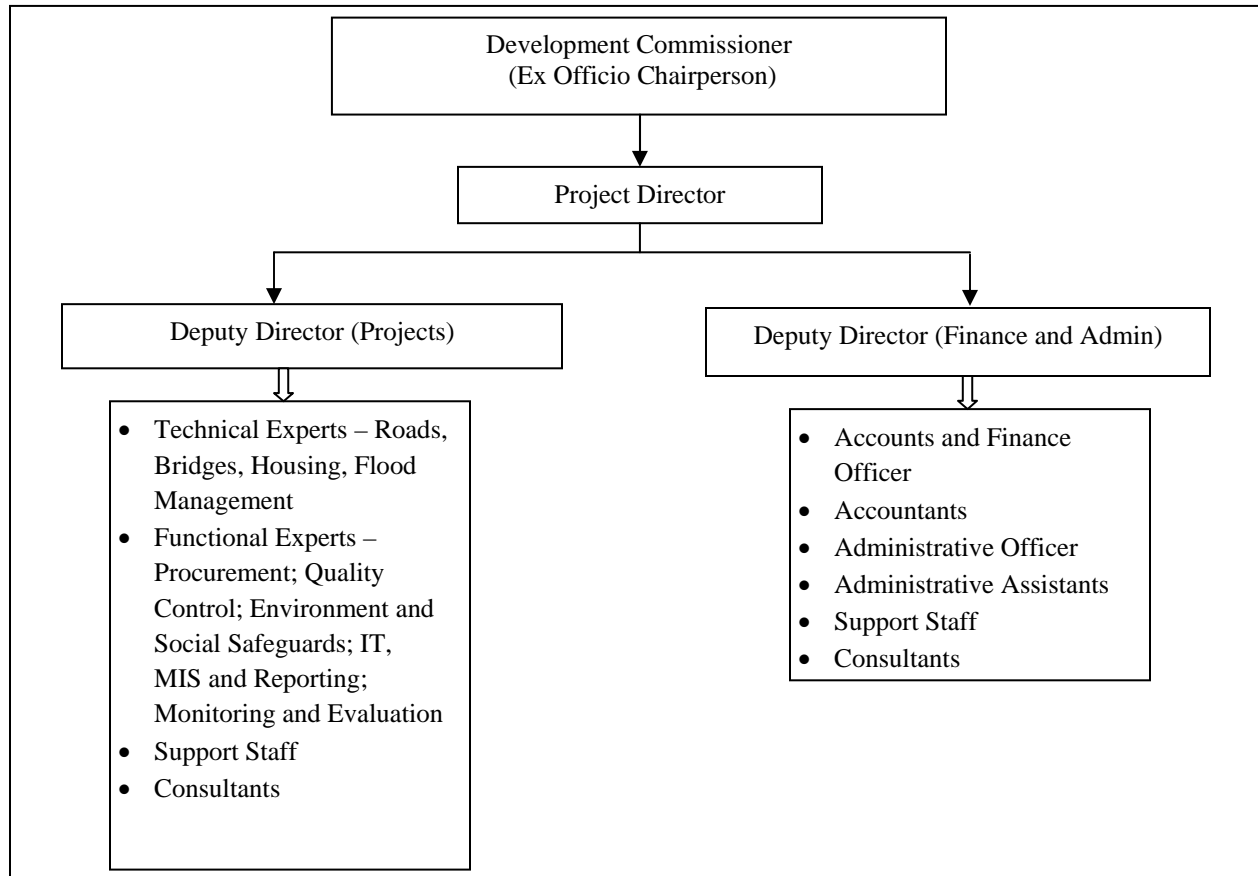
## Annex 6: Implementation and Monitoring Arrangements

### INDIA: Bihar Kosi Flood Recovery Project

1. The project has four primary investment components: Component A - Owner Driven Housing Reconstruction; Component B – Reconstruction of Roads and Bridges; Component C – Strengthening Flood Management Capacity; and Component D Livelihood Restoration and Enhancement. Government of Bihar (GoB) has constituted the Project Management Unit as a Registered Society: ‘Bihar Aapada Punarwas Evam Punarnirman Society (BAPEPS)’. This society will act as PMU for all components except component ‘D’ and will be primarily responsible for the implementation of the project. Ex-Officio Chairperson of the Society will be the Development Commissioner, GoB. Primary functions of the BAPEPS will be:

- To assist in preparation of Bihar - Kosi Flood Recovery Project and subsequent phases and implement the same.
- To coordinate with the World Bank and line agencies in both preparation and implementation phase and be singularly responsible for reporting to the Bank on project progress, procurement, financial management, audit & disbursement aspects, results monitoring and evaluation of the project and ensuring that the project is implemented in accordance with agreed procedures and guidelines of the Bank (Procurement, Financial, Environment, Social, etc.)

2. The structure of the society is indicated in the following diagram:



3. BAPEPS will have a three level structure, through representative offices at the district and block level. The district and block level offices will ensure coordination, monitoring and reporting functions for the housing reconstruction component and will be attached to the office of the DM at district level and BDO at Block level.

4. There are five departments/agencies that would be involved in implementing the project components. These are:

- i. District Administration led by the District Magistrate for implementation and monitoring of the Housing Reconstruction component. This will be supported by the Owner Driven Reconstruction Collaborative (ODRC) and the Multi Level Support and Monitoring Mechanism;
- ii. 'Bihar Rajya Pul Nirman Nigam Limited (BRPNN)' which will construct the bridges on the State Highways and Major District Roads;
- iii. 'Bihar Rural Road Development Agency (BRRDA)' which will construct rural roads;
- iv. Water Resources Department (WRD) implementing the flood management and capacity building initiatives for Flood Management; and
- v. Project Management Unit for the Bihar Rural Livelihood Project known as 'Jeevika' which will be responsible for implementation of the Livelihood Support and Enhancement component.

5. The functions of the PMU and Implementing Agencies shall be as below:

**Functions of the BAPEPS:**

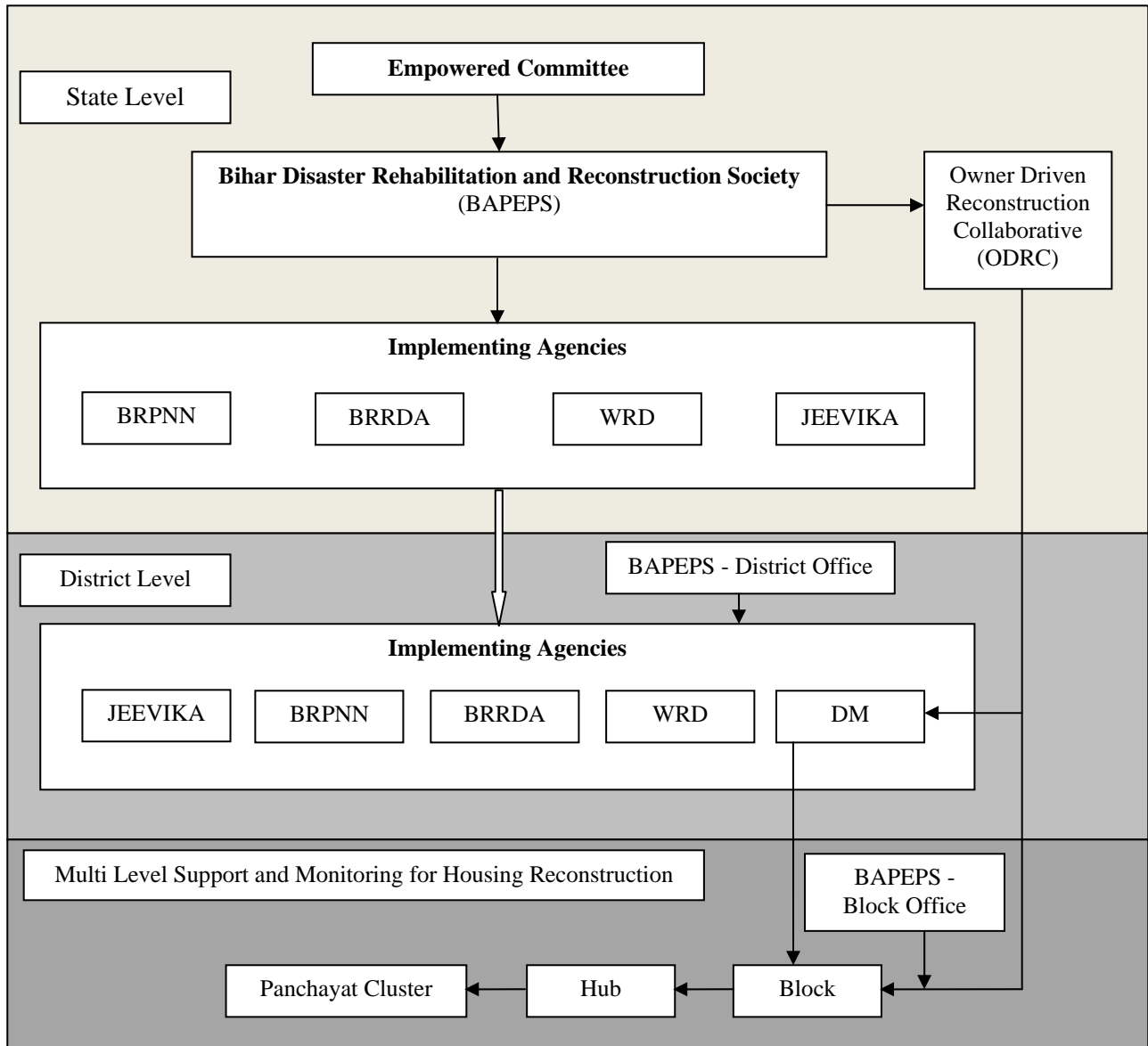
- Coordination with Line Agencies, progress monitoring and acting as Employer under the contracts.
- Procurement Control (Approval of Bidding Documents and approval of contract award recommendations from the implementing agency that come through nodal officers,).
- Quality assurance through third party audits and social audit.
- Payments (direct to contractors and consultants; and cash transfers to beneficiaries through block level offices), and Financial Management.
- Financial Audit and reporting to Bank.
- Ensuring compliance with agreed implementation procedures and other Bank requirements.
- Maintaining MIS and Quarterly reporting.
- Appointment of technical assistance consultants and management of consultancies.
- Coordination, monitoring and reporting at District level and similar functions primarily for the housing reconstruction component at Block level.

**Functions of Implementing Agencies (Line Agencies):**

- Design and Planning - Preparation of DPRs, Cost estimation and preparation of bidding documents.

- Procurement: Receipt of Tenders, Opening and preparation of bid evaluation reports, review and check by nodal officers and forwarding to BAPEPS for final decision.
- Implementation of works and Contract Management (acting as Employer’s representative and as Engineer under the contract).
- Supervision of works and quality assurance as Engineer under the contract.
- Recommendation for payments.

6. The overall Project implementation structure is depicted in the following diagram:

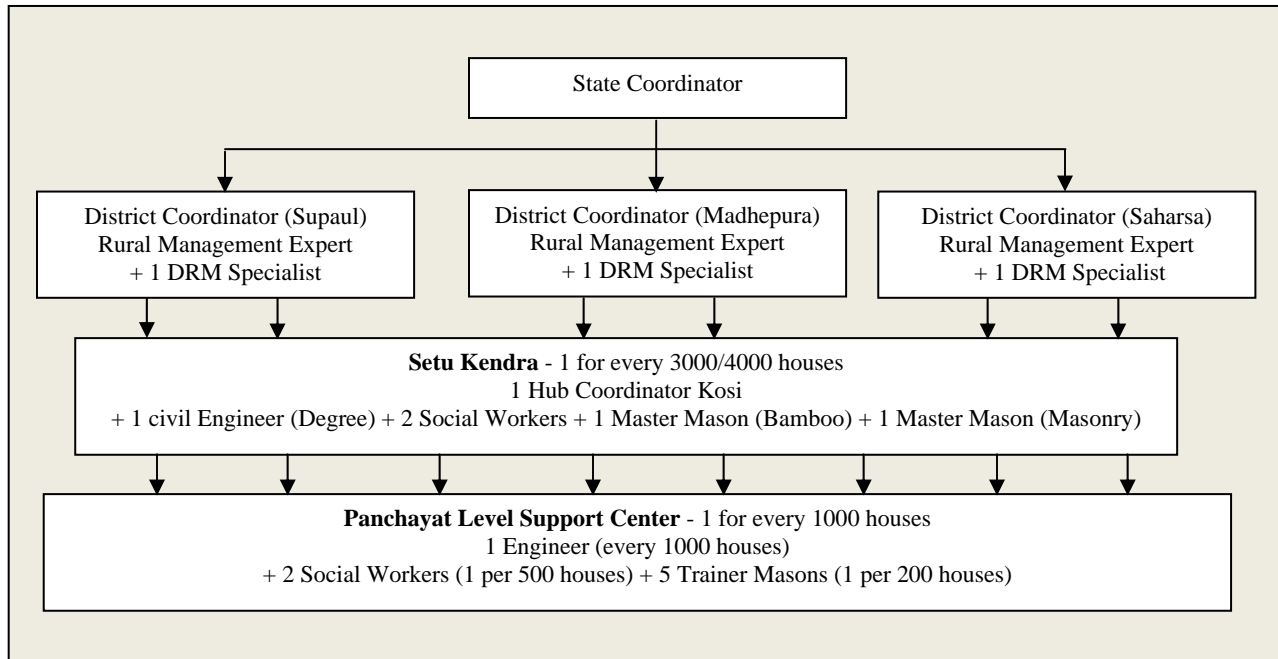


### Multi-Level Support and Monitoring for Housing Reconstruction

7. Owner Driven Reconstruction Collaborative (ODRC), a collaborative of professionals and NGOs has been supporting the efforts of GoB and has been providing support in the area of

social mobilization, training and capacity building of owners and masons involved in reconstruction apart from supporting in policy formulation, piloting reconstruction activities, developing technical guidance for hazard safe reconstruction, and carrying out socio-technical audits. ODRC is currently being funded by United Nations Development Program (UNDP) and has the mandate to support the housing reconstruction effort in the three priority districts. The mandate to ODRC has been formalized through a MoU signed between the GoB and ODRC on October 23, 2009. Additional cost of ODRC's continuation through the project period will be financed by GoB using project funds. ODRC's scope will be expanded to involve them in grievance redress process and monitoring of tranche releases.

8. GoB together with ODRC has put up a multi-layered support and monitoring mechanism by deploying resources at state level (State Coordinator), district level (District Coordinator), hub level (Kosi Setu Kendra for every 3000-4000 houses), and at panchayat level (every 1000 houses). The indicative structure is depicted in the below diagram:



### Support Consultancies

9. BAPEPS will hire support consultants using pre-agreed Terms of References, for:

- Financial Management and Procurement support
- Internal and External Auditors
- Impact evaluation and monitoring
- IT Support Consultants
- Third Party Quality Audit Consultants
- Social audit

## Annex 7: Project Preparation and Appraisal Team Members

### INDIA: Bihar Kosi Flood Recovery Project

Bank staff and consultants who worked on the project included:

| Names                | Title  | Unit  |
|----------------------|--|-------|
| Christoph Pusch      | Co-Task Team Leader and SAR Regional Coordinator- Disaster Risk Management | SASDU |
| Mandakini Kaul       | Co- Task Team Leader and Senior Country Officer , India                    | SACIN |
| Giovanna Prennushi   | Economic Adviser, India  | SASEP |
| Joop Stoutjesdijk    | Lead Irrigation Engineer   | SASDA |
| Sujit Das            | Senior Transport Engineer  | SASDT |
| Parmesh Shah         | Lead Rural Development Specialist  | SASDA |
| Deepak Singh         | Infrastructure Specialist  | SASDU |
| Saurabh S Dani       | Disaster Management Specialist   | SASDU |
| Mohan Gopalakrishnan | Senior Financial Management Specialist                                     | SARFM |
| Puneet Kapoor        | Financial Management Consultant  | SARFM |
| Nagaraju Duthaluri   | Senior Procurement Specialist  | SARPS |
| Neha Vyas Mishra     | Environmental Specialist   | SASDI |
| Venkata Rao Bayana   | Social Development Consultant  | SASDI |
| Prashant             | Senior Disaster Risk Management Specialist                                 | GFDRR |
| Kishor Uprety        | Senior Counsel   | LEGES |
| Rajiv Sondhi         | Senior Finance Officer   | CTRFC |
| Ranu Sinha           | Operations Analyst   | SASDI |
| Rakhi Bhavnani       | Consultant   | SASDU |
| Ria Mukherji         | Consultant   | SACIN |
| Vinay Kumar          | Consultant   | SASDA |
| Moulir K Chatterjee  | Consultant   | SASDU |
| Abhas K Jha          | Peer Reviewer  | EASIN |
| Saroj Jha            | Peer Reviewer  | GFDRR |
| Michel Matera        | Peer Reviewer  | GFDRR |
| Francis Ghesquiere   | Peer Reviewer  | LCSUW |
| Sofia U Bettencourt  | Peer Reviewer  | AFTEN |
| Vidya Mahesh         | Program Assistant  | SASDU |
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## **Annex 8: Environmental and Social Safeguards Framework**

### **INDIA: Bihar Kosi Flood Recovery Project**

#### **A. Environment Safeguards and Management**

1. The BKFRP proposes to support multiple components such as owner driven housing re-construction; re-construction/repair of roads and bridges; strengthening of over-all flood forecasting and flood/sediment management capacity, particularly for the Kosi Basin through both structural and non-structural measures; improving Emergency Response Capacity; Livelihood Restoration and Enhancement and Project Management, Implementation Support and Technical Assistance.
2. The implementation of project components will include several re-construction activities, which have a potential to create adverse environment impacts, particularly if such activities are not properly managed. Although the general thrust and broad project interventions are known at the time of project appraisal, the specific details pertaining to planning and design of multiple sub-projects that the project envisages to support, will be known only later (as the project has been prepared under Emergency Recovery Assistance Procedures). In such a situation, where multiple sub-projects will be located across the five flood affected districts (Supaul, Madhepura, Saharsa, Araria and Purnia); an Environment and Social Management Framework (ESMF) approach has been adopted for the project. While the project itself is designed to benefit the flood hit communities, the management of unwarranted/adverse impacts is proposed to be managed through the application and implementation of the said ESMF.
3. **Key Environmental Parameters considered in ESMF.** Some of the key environmental parameters/aspects considered in the preparation of the ESMF include – presence of sensitive natural habitats and ecological features (such as wetlands and forests); trees and vegetation; water resources and their use by people; water logging, flooding and drainage issues; soil resources including erosion and siltation; physiographic conditions; material sources and their requirement (bamboo, earth, sand, stone, water) for construction and; management and disposal of spoils and wastes.
4. **Environmental Issues associated with the Kosi Flood:** In addition to the damage to dwellings and infrastructure, the Kosi flood of August 2008 has resulted in a number of environmental impacts. The key direct adverse environmental impacts resulting due to the flood include: (a) sand casting, which has affected nearly 2.7 lakh acres of land; (b) soil erosion, particularly along embankments, roads and bunds; (c) debris/rubble removal and disposal, primarily arising from the damage caused to housing and infrastructure facilities; (d) impact to water and water management resources and; (e) damage to plantation. Among indirect environmental impacts, the more significant issues pertain to: (i) pressure on environmental resources in areas affected by in-migration, including issues related to poorer sanitation and waste management practices; (ii) increase in environmental degradation, including pollution due to reconstruction activities requiring large quantities of construction materials; and (iii) changes in land-use due to sand casting. Indirect adverse environmental impacts are also associated with lopping of trees and other vegetative material (such as bamboo) by the local people for creating temporary and permanent shelter.

5. **Likely Environmental Impacts due to the Project.** The implementation of project components will include substantial amount of re-construction work, which has a potential to create adverse environment impacts in the process. However, if the re-construction efforts are planned and managed well in line with the approach provided in the ESMF, most of the environmental impacts are not likely to be significant and would have short-term or temporary nature. Potential key adverse environmental impacts that may result on account of the project have been listed component-wise in the text below:

- *Owner Driven Housing Reconstruction:* (a) Poor location/siting, such as construction near a water regulating structure/s or location at /next to embankments or next to ecologically important/sensitive features, that can affect the functioning of such infrastructure and may also create vulnerability to the resident during flooding events; (b) impact on resource availability of materials like bamboo and the likely damage to indigenous gene pool of the species on account of large-scale and unplanned or pre-mature harvesting of bamboo; (c) inappropriate storage and handling of chemicals that would be used for treatment of bamboo and other vegetative materials; and (d) post treatment improper disposal of residual materials, that may create some local level pollution and health issues.
- *Re-construction of Roads and Bridges:* (a) Impact on natural drainage pattern due to inadequate cross drainage works; (b) increase in local level water logging conditions due to substantial increase in embankment height or improper location of culverts; (c) possible diversion of small amount of forest land and/or plantation belt area or some tree felling for accommodating minor changes in alignment (primarily for improving the road geometry); (d) impact on physical environment (air, water, soil, noise) due to construction activities and setting-up of temporary camps and plant sites; (e) impacts associated with extraction and transportation of materials such as earth, sand, water and stones and; (f) occupational health and safety issues related to various construction operations and improper disposal of waste materials.
- *Strengthening Flood Management Capacity:* (a) Impact on natural drainage due to inappropriate planning and design of embankments; (b) possible diversion of small amount of forest land and/or plantation belt area or some tree cutting for and during embankment re-construction activities; (c) impact on physical environment (air, water, soil, noise) due to construction activities and setting-up of temporary camps and plant sites; (d) impacts due to construction materials (such as earth, water and stones) sourcing and transportation and; (e) occupational health and safety issues related to various construction operations.

6. From the implementation of other project components, namely Improving Emergency Response Capacity; Livelihood Restoration and Enhancement; and Project Management, Implementation Support and Technical Assistance, no significant or adverse environmental impacts are envisaged.

7. **Environmental Management Approach and Process.** An Environment and Social Management Framework (ESMF) has been prepared to address the issues likely to arise on account of project implementation. The ESMF supports the integration of environmental aspects within the decision making process of various sub-projects, as they will be identified, prepared and implemented. The systematic application and implementation of the ESMF will also assist in achieving compliance with the applicable laws and regulations of GoI and the GoB apart from meeting the requirements of the relevant Bank's Operational Policies on environment safeguards. The over-all environment management approach for the project under the ESMF includes the

following key steps:

8. Environment screening, which helps in early identification of key environmental issues at the sub-project level. The screening process forms the first step in the environment management process for the project and will be carried out in parallel with the project identification/engineering studies for the proposed sub-projects. To the extent possible, proposed investments will be screened early-on during the DPR preparation process and sub-projects with no significant adverse environmental impact will be identified for execution under Phase I (this project) of the Kosi Flood Recovery Program.

9. For sub-projects with the potential for significant adverse environment impacts (as it emerges from the screening results), an Environment Assessment (EA) and sub-project specific Environment Management Plan (EMP) will be prepared in accordance with Bank's OP 4.01. The EA will include an assessment of baseline conditions, analysis of alternative options, assessment of potential impacts, identification of mitigation measures and preparation of sub-project specific environmental management plans. However, it is expected that sub-projects with the potential for significant adverse environment impacts will be few in number. These are expected to be primarily limited to embankment works only. Such works would be taken-up either after the due diligence requirements are met with or would be considered in the subsequent phases of the Kosi Flood Recovery Program.

10. Based on screening results, if a sub-project does not require an EA, the generic/standard activity-specific EMP, developed as part of the ESMF, will apply. These generic/standard activity-specific EMP provides an overall guidance on avoidance, minimization and mitigation measures to be adopted during the planning, design and implementation stages of the concerned sub-project.

11. The ESMF serves as a guide covering policies, procedures and provisions to ensure that the environmental aspects are given due consideration in the project and issues are systematically identified and addressed early-on in the project cycle. It attempts to respond to the needs of the reconstruction and the opportunity provided by it, and seeks to:

- a) Support the integration of environmental aspects into the decision making process related to planning, design and execution of sub-projects, by identifying, avoiding and/or minimizing adverse environmental impacts.
- b) Enhance positive environmental outcomes through improved/sensitive planning/selection and design of sub-projects.
- c) Minimize environmental degradation as a result of either individual sub-projects or through their indirect and cumulative effects.
- d) Protect human health.
- e) Minimize impacts on common property resources such as drinking and other water sources used by the people.

12. Among other things, it provides for development of siting/location criteria and guidelines for sustainable supply and treatment of vegetative material like bamboo. These guidelines and criteria would be integrated with the Technical Guidelines for the Owner Driven Housing Reconstruction Component, which has been already developed by GoB with ODRC's support. For the Livelihood Component, the ESMF being used under the BRLP will be used under this project

as well.

13. The ESMF will be an ‘up-to-date’ or a ‘live document’ enabling revision, as and when necessary, particularly to address issues resulting from changes in the component design or to meet challenges posed by unanticipated situations that may be identified during later stages of the project cycle. However, under normal circumstances, the ESMF will be reviewed once in a year and during the mid-term review cycle of the project to assess the need for any revision.

14. **Stakeholder Consultation.** A consultation-cum feedback workshop on the draft ESMF was organized on June 29, 2010 in Patna. Participants included officials from the concerned line departments/agencies (including staff from the Jeevika project) and an expert from the State Bamboo Mission. Views on component specific environmental issues, management/mitigation and ESMF implementation arrangements were sought and used for finalizing the ESMF.

15. Since the project has been prepared following the Operational Policy 8.0 (Emergency Recovery Assistance), consultations with local public have not been carried out at the time of project’s appraisal. However, public consultation at local level (in areas where specific investments will be made) will be carried out during the initial stages of sub-project preparation. The consultation process will include a range of formal and informal on-site discussions, focus group discussions/meetings with targeted stakeholders such as local residents; farmers, local bodies like Gram Panchayats; road-side and embankment-side communities and NGOs. Outputs from this process will be integrated into the project design, where technically feasible.

16. The ESMF provides for a public consultation process to be designed in a way that: (i) affected people are included in the decision making process of a sub-project; (ii) links between communities and their natural resource base adjacent to project location are not disturbed; (iii) public awareness and information sharing on project alternatives and benefits are promoted; and (iv) views on designs and local level solution/s from the communities are solicited. Public involvement process will continue through the project implementation stage as well.

17. **Statutory Clearances.** A summary of the key statutory clearances that may be required for the project is provided in Table 8.1 below.

**Table 8.1: Key Statutory Clearances**

(Requirement will depend on the area, type and extent of the sub-project)

| S. No.  | Clearance Required  | Statute under which clearance is required  | Statutory Authority                                 |
|---|---|--|---|
| <i>Clearances Required to be taken by BAPEPS/State’s Line Departments</i> |   |  |   |
| 1   | Environment Clearance/NOC for the sub-project*            | EIA Notification, 2006 (including amendments) issued under Environment Protection Act, 1986      | State Pollution Control Board; MoEF, Govt. of India |
| 2   | Forest clearance  | Forest Conservation Act, 1980  | State Forest Department and/or MoEF, Govt. of India |
| 3   | Tree Cutting Permission                                   | Forest Conservation Act, 1980  | State Forest Department and/or MoEF, Govt. of India |
| <i>Clearances Required to be taken by the Contractor</i>                  |   |  |   |
| 1   | Hot mix plants, WMM plants, Crushers and Batch Mix Plants | Air (Prevention and Control of Pollution) Act, 1981 and Noise Pollution (Regulation and Control) | State Pollution Control Board                       |

| S. No. | Clearance Required  | Statute under which clearance is required  | Statutory Authority           |
|--------|---|--|-------------------------------|
|        |   | Rules, 2000  |                               |
| 2      | Storage, handling and transport of hazardous materials        | Hazardous Waste (Management and Handling) Rules, 1989 and Manufacturing, Storage and Import of Hazardous Chemicals Rules, 1989 | State Pollution Control Board |
| 3      | Location/ layout of workers camp, equipment and storage yards | Environment Protection Act, 1986 and Manufacturing, Storage and Import of Hazardous Chemicals Rules, 1989                      | State Pollution Control Board |
| 4      | Discharges from Labor Camp                                    | Water (Prevention and Control of Pollution) Act, 1974  | State Pollution Control Board |
| 5      | Permission for sand mining from river bed                     | Environment Protection Act, 1986   | Irrigation Department, GoB    |

\* *Environmental Clearance may be required for some sub-projects such as for embankment work (subject to their location and proposed magnitude of work).*

18. **Common Property Resources (CPRs).** Impacted common property resources (such as water sources and religious properties) will be either relocated in as good or better condition. Local communities/stakeholders will be consulted and involved in this process. The type and scale of impact on CPRs will be ascertained as part of the DPR preparation process. As far as possible, attempts will be made to minimize the impact through modification in design/alignment such that the existing CPRs are not disturbed and safety requirements are not compromised with. However, the impact on CPRs due to project interventions is likely to be minimal.

19. **ESMF Implementation and Monitoring.** For effective implementation, the relevant ESMF provisions will be appropriately integrated and cross-referenced in the project design documents, contract conditions and Bills of Quantities, as appropriate. The over-all supervision and reporting requirements have been outlined in the ESMF. The implementing agency shall award the civil works contract only after the required regulatory clearances/permissions have been obtained from the concerned ministry/department.

20. Report on ESMF implementation (as part of the over-all project's over-all quarterly/monthly reporting system) will be prepared by the BAPEPS/BRLP's Environment and Social Manager covering all project component/investment categories. A comprehensive monitoring and evaluation report will be prepared by the PMU at mid-term and end-term.

21. The Bank's monitoring strategy with regard to application and implementation of ESMF will include: (a) review of various outputs such as DPRs (including documentation of the stakeholder consultation process), Bidding Documents and EAs/EMPs (as required in sub-project in context) and; (b) review of status/quarterly reports and ToRs for various studies/activities and; (c) regular participation in supervision missions (once in six months and interim missions, if and as required).

22. **Institutional Arrangements for Environmental Management.** Staffing arrangements for environment management in the project are given below:

(a) BAPEPS shall implement the project components through the concerned line departments. Within the BAPEPS set-up, an Environment and Social Manager (under

Deputy Director, Projects) will be deployed to handle all matters pertaining to environmental management in the project. The key responsibilities of the Environment and Social Manager includes: (a) Updating of the ESMF document (as required); (b) orientation and training of the BAPEPS's staff (both at headquarters and in the field offices) and implementing agency teams on aspects covered under the ESMF; (c) review of EA, EMPs and monitoring reports submitted by the implementing agencies on ESMF implementation; (d) regular/monthly visits to project sites to review ESMF compliance during sub-project execution; (e) providing guidance and inputs to the PMU and implementing agency teams on environment and social management aspects. This specialist will also deal with matters pertaining to integration of ESMF into the sub-project design and contract documents; preparation of ToRs for studies (such as for EA); reporting, documentation, monitoring and evaluation on aspects covered under ESMF and will ensure over-all co-ordination with the Implementing Agencies and field offices of BAPEPS. The representative offices of the BAPEPS at the district and block level will support the Environment and Social Manager in carrying-out the responsibilities listed above.

- (b) Within the Implementing Agencies for components B, C and D (such as BRRDA, BRPNN, WRD), a Nodal Officer will be designated, whose main responsibilities will include co-ordination with DoEF/other state agencies, as required to obtain regulatory clearances and ensure that regular supervision and monitoring of environmental aspects pertaining to the pre-construction and construction stages is carried out by the line department's field staff during the pre-construction and construction stages of the concerned sub-project. The ESMF implementation and monitoring for component A will be carried out through ODRC. For Component V (Livelihoods), the BRLPS will be the implementing agency and will follow the ESMF procedures and implementing arrangements agreed under the on-going Bank funded Jeevika project.
- (c) During implementation, the Third Party Quality Auditor (TPQA), who will provide independent assurance on technical quality issues, will review the implementation of the works in accordance environmental, health and safety management provisions set-out in the respective contracts. The contractor will be responsible for planning, executing and coordinating the implementation of the ESMF provisions as laid out in the contract documents; overseen by the line department staff.

23. **Training Support for ESMF Implementation.** A training plan will be prepared incorporating the project specific needs of the BAPEPS, Line Departments and other associated entities such as ODRC and contractors. An outline of this plan has been provided in the ESMF. The capacity building plan will also provide for induction modules to take care of staff turn-over issues during the course of the project.

24. **Disclosure of ESMF:** The final ESMF document (July 2010 version) will be made public through website of GoB (Planning Department) apart from Bank's PIC. It will also be uploaded on the website of the created BAPEPS. The final version of the ESMF has been made available to the designated Nodal Officers in the line departments at headquarters and will also be available in the field/district level offices of BAPEPS and line departments. The executive summary of the ESMF will also be translated in Hindi and will be disclosed along with the full report.

25. Any subsequent studies such as EA and EMP (as necessary in the sub-project's context) that would be prepared for proposed investments will also be disclosed on the Bank's PIC, government websites and other public places accessible to the local people and NGOs in English and in local language (Hindi) during the project cycle.

## **B. Social Impacts and Issues**

26. Bihar Kosi Flood Recovery Project while designed to benefit the flood hit communities, the implementation of proposed components of the Project may result in adverse impacts on people and land, if not mitigated. Bihar with huge population size and high dependence on land for economic pursuits has severe constraints in land availability for development works. Small land holdings and high density of population are other typical features of the state of Bihar. The five flood-hit districts are among the poorest districts in India with about 90 per cent of population dependent on agriculture. The proportion of people belonging to STs is very small, but the proportion of SCs is high, especially in Madhepura and Saharsa districts.

27. An assessment of project components indicates that the implementation of the sub-projects may not result in any significant adverse social impacts. The project has six components (A) Owner Driven house construction; (B) Reconstruction and restoration of roads and bridges; (C) Strengthening flood management capacity; (D) Livelihood restoration and enhancement; (E) Improving emergency response capacity; (F) Project management and implementation support. Among all the components, it is only in case of Component B and C, that minor adverse social impacts are expected due to acquisition of small strips of land. Partial loss of land, loss of standing crops and trees and structures are of the possible impacts expected to arise out of implementing the sub projects. Early evaluation of such impacts and integration of suitable mitigation measures into the sub project planning and implementation are the measures included in the Project design.

28. ***Principles for Addressing Social Issues:*** Subproject proposals that would require acquisition of productive lands and demolition of structures will be carefully reviewed to minimize or avoid their impacts through avoidance or minimization process. The principal objectives of resettlement are as follows:

- a) involuntary resettlement will be avoided or minimized by exploring all possible options that have least impacts in terms of land acquisition and resettlement ;
- b) In unavoidable circumstances, the affected persons irrespective of their legal status will be assisted in their efforts to improve their livelihoods and standards of living or at least restore them in real terms to the pre-affected levels; and,
- c) The compensation and assistance to the project affected people are based on the principle that people shall not suffer net losses as a result of the project.

29. ***Land Acquisition and Payment of Compensation:*** From review of preliminary design documents of roads and bridges and discussions with the concerned officials, it is assessed at few locations land may need to be acquired for approach roads, bridges and possibly for embankments. As first option, all attempts will be made to use vacant government lands.

30. Land acquisition can take place either through (a) voluntary donations or (b) by using the land acquisition process. Based on the resettlement support principles/entitlement matrix included in the ESMF, the individual entitlements will be proposed and included in the Resettlement Action Plan.

31. ***Voluntary land donation:*** Individuals may also elect to voluntarily contribute land or assets, provided the persons making such contributions do so willingly and are informed that they have the right to refuse such contributions. The measures to follow in case of voluntary donations are as follows:

- i. Proof of meeting where the land acquisition and resettlement policy has been discussed with the affected person and acknowledgement by the affected person of his/her knowledge of the land acquisition and resettlement policy.
- ii. Certification from the government body that the land is free of claims or encroachments from any third party;
- iii. Deed of donation to the proponent concerned, as witnessed by the government officials, and independent witness, duly registered in the name of Government.

### **Support Principles/Entitlements**

32. The project implementation agencies will ensure timely provision of compensation and resettlement assistance to the project affected people. The entitlements for broad category of impacts are summarized below.

33. ***Loss of private agriculture land and assets:*** These will be compensated at replacement cost if the affected do not volunteer to donate the land.

34. ***Loss of private non agriculture land and assets:*** Both land and structures will be compensated at replacement cost along with shifting allowance. The titleholders belonging to vulnerable groups losing complete residential structures will be assisted with an option of free house.

35. ***Non titleholders:*** These will receive no compensation for land but replacement cost for vulnerable groups losing residential and commercial structures.

36. ***Loss of livelihood/income opportunities:*** Monthly subsistence allowance equivalent to 20 days minimum agricultural wages per month for a period of six months.

37. ***Project Preparation on Social Safeguards Social Screening - Identification of Impacts:*** Screening check list will identify sub-projects with potential social issues that may need to be addressed through SIA and RAP at the planning stage. The outcome of the screening process will help prioritize the various investments and where required, start the clearance process in a timely manner.

39. ***Preparation of Resettlement Action Plans (RAP):*** The RAP provides a link between the impacts identified through screening and proposed mitigation measures to realize the objectives of involuntary resettlement. Full RAP will be prepared where the sub-project affect more than 200 people due to land acquisition and/or physical relocation; and an abbreviated RAP will be prepared if the affected people number is less than 200. No such RAPs need to be prepared in case the sub projects are not expected to have any land acquisition or any other significant

adverse social impacts. Impacts on Schedule Tribe (STs) groups would be addressed in line with the principles and approach of OP 4.10 of the World Bank and GoI policies on STs.

40. The implementing agency shall not allow works to start until the compensation and assistance has been made available in accordance with the framework.

### **Other Aspects**

41. ***Consultation and information disclosure proposed:*** Community meetings will be held in each affected village on the project and also to inform the local population of their rights to compensation and options available in accordance with these guidelines. The ESMF and subsequent implementation plans as well as studies for investments will be disclosed on the government websites and other public places accessible to the local people and NGOs in English and local language

41. ***Grievance redress on land acquisition and compensation payment:*** In case of a potential dispute on compensation, the local tehsildar/Sub Divisional Magistrate (SDM) shall hear and resolve the case in presence of (a) the affected party, (b) the incharge of line department who is acquiring the land/ incharge of the sub-project activity and (c) Pradhan of the village where the sub-project is being implemented. However, in case of non-satisfactory solution, the matter will be brought to the notice of the District Collector and he/she is the final authority to decide the case.

42. ***Grievance redress on Housing:*** The lists of housing beneficiaries are being re-verified by the Block *Development* Officers for both exclusions and inclusions into the program. The Owner Driven Reconstruction Collaborative (ODRC) will ensure grievance redress in the process of re-verification.

43. Communities will be made aware of the grievance redress mechanism through ODRC. The list of eligible houses *and* beneficiaries will be widely publicized by the District Collector at public places accessible to all concerned villagers and all grievances/requests for review would be received formally and reviewed for due consideration by a widely publicized deadline. Gram Sabha meetings shall formally confirm in writing that all eligible houses and beneficiaries have been included and these formal agreements shall have the signatures of all those who attended these meetings and particularly including each of the selected beneficiaries. A copy of these agreements for each participating habitation will be sent to the BAPEPS by the DIU/District Collector by an agreed deadline. The established system for grievance redress at the District Collector's office would also be available for beneficiaries to report any deviations from the proposed implementation mechanism. Grievances will be redressed by the Sub Divisional Magistrate and District Magistrate. At the level of DM a representative of the ODRC will also assist in the grievance redress process.

## Annex 9: Economic Analysis

### INDIA: Bihar Kosi Flood Recovery Project

1. Bihar is one of India's largest and most populated states with about 8 percent of the country's population. It is also one of India's poorest states with 41% living below the poverty line in 2004-05. In recent years, the state has made impressive gains: its economic growth averaged 10.7 percent between 2005-06 and 2008-09, which was significantly higher than the national growth rate of 8.7 percent (Table A9.1). Bihar outperformed the all-India performance in several other areas: female literacy rose from 23 to 33.6 percent over the decade 1991-2001 (an increase of 46 percent, compared to an increase of 37 percent nationwide) and access to safe drinking water for households improved by 47 percent (versus 25 percent nationwide).

*Table A9.1: GDP growth rates in Bihar and India (1999-2000 prices, percent per year)*

|                             | 2005/06 - 2008/9 |       | 1999/00 - 2008/09 |       |
|-----------------------------|------------------|-------|-------------------|-------|
|                             | India            | Bihar | India             | Bihar |
| Per capita real GDP growth  | 7.2              | 9.0   | 5.5               | 6.1   |
| Growth in real GDP of which | 8.7              | 10.7  | 7.2               | 8.1   |
| Agriculture                 | 4.1              | 5.7   | 2.8               | 6.7   |
| Industry                    | 8.3              | 22.9  | 7.4               | 12.7  |
| Services                    | 10.6             | 10.9  | 8.9               | 8.3   |

*Source: Directorate of Statistics and Evaluation, Government of Bihar*

2. These gains notwithstanding, Bihar still had the lowest per capita income in 2007-08 among 18 major Indian states, less than a third of India's average. Income disparities continue to remain extreme: Patna District, which includes the state capital, had the highest 2006-07 per capita gross domestic district product in Bihar, nearly nine times that of Sheohar District, the lowest.<sup>17</sup>

#### The Kosi districts in the context of Bihar

3. The destructive effects of the flooding of the river Kosi in August 2008 were most felt in the five districts of North-Eastern Bihar: Araria, Madhepura, Purnia, Saharsa, and Supaul. These five districts combined cover an area of about 11,963 sq. km (12 percent of the state's land area) and had in 2001 a population of about 9.5 million, of which about 1.5 million belonged to the Scheduled Castes and Scheduled Tribes (see table A9.2).<sup>18</sup>

4. These five districts were among the least developed even before the 2008 flood. Available district-level indicators show that they lagged behind the state as a whole:

- Literacy rates in 2001 were everywhere lower than the state average of 47.5 percent, and lower than in neighboring districts (apart from Katihar and Kishanganj which lie further east). Female literacy rates were even lower, less than 20.5 percent on average. Since the Census, gains were made in elementary education, with near-total enrollment in Grades I-

<sup>17</sup> Government of Bihar, Finance Department (2010). *Economic Survey 2009-10*.

<sup>18</sup> Census of India (2001).

V but continuing low enrollment, ranging from 28 to 33 percent, in upper grades (VI-VII), according to the monitoring system of the SSA scheme (NUEPA 2009).<sup>19</sup>

- The state of infrastructure was also dismal in these districts. Rural connectivity levels, for example, were extremely low, with less than half of the villages in each district having access to a paved road (Census 2001) (see table A9.3).
- A recent World Food Program report, using data from 1998-2005, classifies three out of the five districts (Araria, Madhepura, and Purnia) as priority districts for food security intervention on the basis of a food security index which aims to measure availability, access, and absorption.<sup>20</sup>

**Table A9.2: District-wise population and literacy data (2001)**

| District           | Population      |                  |              | Literacy Rate 7+ |             |             |
|--------------------|-----------------|------------------|--------------|------------------|-------------|-------------|
|                    | Total           | Scheduled Castes | % SC         | Persons          | Males       | Females     |
| <b>Bihar State</b> | <b>82998509</b> | <b>13048608</b>  | <b>15.7%</b> | <b>47.5</b>      | <b>60.3</b> | <b>33.6</b> |
| Araria             | 2124831         | 220148           | 10.4%        | 34.9             | 46.5        | 22.1        |
| Purnia             | 2540788         | 234478           | 9.2%         | 35.5             | 46.2        | 23.7        |
| Madhepura          | 1524596         | 192443           | 12.6%        | 36.2             | 48.9        | 22.3        |
| Supaul             | 1745069         | 207782           | 11.9%        | 37.8             | 53.2        | 21.0        |
| Saharsa            | 1506418         | 175369           | 11.6%        | 39.3             | 52.0        | 25.3        |

*Source: Census of India 2001.*

**Table A9.3: Percentage of inhabited villages having access to paved roads (2001)**

| District  | Access to paved roads (percentage of villages) |
|-----------|--|
| Araria    | 35   |
| Madhepura | 43   |
| Purnia    | 26   |
| Saharsa   | 43   |
| Supaul    | 46   |

*Source: Infrastructure Census of India 2001.*

5. Since estimates of Gross District Domestic Product (GDDP) and of outcome indicators such as malnutrition before and after the flood are not available, it is not possible to assess the overall impact of the event. But the assessment provided by the GoB and reported in the Needs Assessment suggests that the impact was very significant. According to government estimates, more than 3.3 million people were affected, or about a third of the population of the five districts, with Supaul and Madhepura being the worst-affected.

<sup>19</sup> National University of Education Planning and Administration (2009), District Report Cards 2007-08, Vol. I.

<sup>20</sup> World Food Programme Institute for Human Development (2009), Food Security Atlas of Rural Bihar. Available online at <http://www.wfp.org.in/publications/FSARB.pdf> (accessed 06/28/2010).

## **Economic analysis of the main interventions**

6. The project aims to support flood recovery as well as forward-looking risk reduction efforts by GoB. The project has four main components: housing, roads and bridges, flood management, and livelihoods.<sup>21</sup> Since these components are quite diverse, the economic analysis addresses them separately.

### ***Component A. Owner-Driven Housing Reconstruction (expected IDA financing: USD60 million)***

7. The objective of this component is to reconstruct fully damaged semi-permanent structures (“kutcha” houses) and huts and reduce the vulnerability of the population towards flood and earthquake risk.<sup>22</sup> The component outcome is reduced flood-, windstorm- and earthquake-related vulnerability for about 100,000 households whose houses will be reconstructed under the project. Using an owner-driven reconstruction model, houses will be built with a brick and concrete plinth, bamboo superstructure and Corrugated Galvanized Iron sheeting roofing. The cost per house will be Rs. 55,000 (~1,200\$) with an additional cost of Rs. 2,300 (~50\$) for a toilet and Rs. 5,000 (~110\$) for solar powered lighting.

8. To get an estimate of the value of housing, we rely on a 2003 NSSO survey of assets.<sup>23</sup> Table A9.4 reports the estimated values in 2003 and 2010, using the Consumer Price Index for rural laborers in Bihar to update values to 2009 (the rural CPI for Bihar is not available for 2009-10). The value for Scheduled Castes (SC) provides a lower-bound estimate of the replacement value of a house, while the value for Other Backward Castes (OBC) provides an upper bound. The cost of the new houses is well within these bounds.

9. A 2005 study of housing reconstruction after the 2001 Gujarat earthquake provides further evidence that the proposed approach is cost-effective.<sup>24</sup> The study compared five approaches to housing reconstruction employed in Gujarat, some based on owner-driven reconstruction and some involving contractors, and conducted more than 400 interviews with beneficiaries four years after the earthquake. Under the owner-driven approaches, construction costs were lower, occupancy rates of completed houses higher, and on average nearly 95 percent of the people who built their own houses were satisfied with the outcomes. Moreover, people learned a valuable skill that opened new possibilities for gainful employment. In sum, the owner-driven approach, which is proposed under the Kosi project, significantly outperformed constructor-based approaches not just in terms of costs but of beneficiary satisfaction.

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<sup>21</sup> Component E, Improving Emergency Response Capacity, which provides contingency funding to respond to a future emergency (USD20 million), and Component F, Project Management and Technical Assistance (USD10 million), have not been assessed.

<sup>22</sup> According to the definition used by the National Sample Survey Office, a “pucca” house is a house whose walls are made of burnt bricks, stones (packed with lime or cement), cement concrete, timber, etc., and whose roof is made of tiles, GCI (Galvanised Corrugated Iron) sheets, asbestos cement sheet, RBC (Reinforced Brick Concrete), RCC (Reinforced Cement Concrete) and timber etc. A “kutcha” house has walls and roofs made of unburnt bricks, bamboo, mud, grass, reeds, thatch, loosely packed stones, etc.

<sup>23</sup> National Sample Survey Organization (2003), Household Assets and Liabilities in India (as on 30.06.2002). Available online after registering at [http://mospi.nic.in/Mospi\\_New/Admin/Publication.aspx](http://mospi.nic.in/Mospi_New/Admin/Publication.aspx).

<sup>24</sup> Swiss Agency for Development Cooperation (2005). *The role of humanitarian aid in the restoration of livelihoods in post-earthquake Gujarat*.

**Table A9.4: Value of assets in rural Bihar (2003, 2009)**

| <b>Social Group</b> | <b>Value of building at 2003 prices</b> | <b>Value of building at 2009</b> |
|---------------------|---|----------------------------------|
| <b>ST</b>           | 43123                                   | 63822                            |
| <b>SC</b>           | 31203                                   | 46180                            |
| <b>OBC</b>          | 52843                                   | 78208                            |
| <b>Others</b>       | 82035                                   | 121412                           |
| <b>All Classes</b>  | 53183                                   | 78711                            |

Source: Assets value: National Sample Survey Organization (2005). CPI (Rural Laborers, Bihar): Reserve Bank of India Bulletins (various issues).<sup>25</sup>

**Component B: Reconstruction of Roads and Bridges (expected IDA financing: USD70 million)**

10. The Kosi floods led to a severe breakdown of connectivity in the affected districts. The strong currents created by the flood caused the collapse of numerous bridges and culverts and major damages to roads. This component aims at constructing 90 bridges and culverts on state highway and major district roads and about 290 km of rural roads. These works are estimated to benefit about 2.2 million people in the three worst-affected districts of Madhepura, Saharsa and Supaul.

11. The economic impact of rural roads has been studied extensively. For example, a 2000 study by Fan, Hazell and Thorat of IFPRI looked at regionally disaggregated data over a 22-year period and concluded that, for every USD22,000 invested in rural roads, on average 163 people were lifted out of poverty; of all major government expenditures, investing in rural roads had the largest impact, per dollar spent, on poverty reduction.<sup>26</sup>

12. For rural roads in Bihar, an in-depth analysis had been conducted in 2008 during the preparation of the second Rural Roads Project.<sup>27</sup> According to the study, an economic analysis based solely on reductions in vehicle operating costs and generated traffic would not be appropriate for rural roads which generally have low traffic flows. Similarly, a comparison of transportation costs for connected and unconnected villages would not capture the social benefits of rural roads. Therefore, a comparative study of connected and unconnected villages was undertaken in order to calculate both the economic and the social benefits of connectivity in rural areas. Connected villages had higher indicators on all counts (see table A9.5).

13. The methodology involved selecting five pairs of connected and unconnected villages within the same area in a district (in order to control for the resource endowment and distance from markets) and collecting data at the village as well as the household level on agricultural production and farm gate prices, prices of commodities, tradable surplus, social indicators,

<sup>25</sup> RBI Bulletins: [http://www.rbi.org.in/scripts/BS\\_ViewBulletin\\_Test.aspx?Id=5828](http://www.rbi.org.in/scripts/BS_ViewBulletin_Test.aspx?Id=5828) (accessed 06/28/2010).

<sup>26</sup> Fan, Shenggen, Peter Hazell, and Sukhadeo Thorat (1999). Linkage between Government Spending, Growth and Poverty in Rural India. International Food Policy Research Institute.

<sup>27</sup> The second Rural Roads Project, which was to cover Bihar as well as two other states, has not been presented to the World Bank's Board of Directors for approval.

average household income, and per capita trip rate. The main assumptions used in calculating benefits were the following:

- The additional agricultural income generated from higher production, changes in cropping pattern, and higher prices of produce and lower prices of inputs was spread over three years, with 50 percent of the benefits in the first year and the rest in the next two years. Agricultural income was assumed to grow at two percent in subsequent years.
- The population growth rate was assumed to be two percent per year.
- To calculate the value of time savings, a person's time was valued at Rs.5 per hour in the initial year and assumed to increase at five percent per year to reflect increasing per capita income. It should be noted that this benefit is a measure of the change in welfare and not a change in disposable real income. Time savings can be “spent” in a wide variety of ways, including leisure and looking after family members; only a proportion of time savings can be expected to be redeployed into income earning opportunities.
- The commodity consumption rate was assumed to increase at 2.5 percent per year.
- The planning time horizon was assumed to be 15 years.

**Table A9.5.a: Economic Indicators: Savings or surplus value per capita, per year for connected villages compared with unconnected villages (2007 Rs.)**

| <b>Agriculture surplus</b> | <b>Cost of commodities savings</b> | <b>Time savings</b> | <b>Per capita income surplus*</b> |
|----------------------------|------------------------------------|---------------------|-----------------------------------|
| 233                        | 96                                 | 252                 | 447                               |

*\*Note: Per capita income is net of agriculture surplus.*

**Table A9.5.b: Social Indicators (percentage of people or households)**

| <b>Indicator (%)</b>                   | <b>Connected Villages</b> | <b>Unconnected Villages</b> |
|--|---------------------------|-----------------------------|
| Passed Class X                         | 30                        | 18                          |
| Mortality                              | 3.9                       | 7.1                         |
| Ave. visits to a Primary Health Center | 3.5                       | 1.5                         |
| Household has a telephone              | 2.5                       | 0.5                         |

14. The study further calculated the internal rates of return (IRR) and the modified economic rate of return (MIRR) based on a reinvestment rate of 12 percent for 36 roads for Bihar. An average IRR of 22.9 percent and an average MIRR of 15.1 percent were obtained. A sensitivity analysis was undertaken by altering the assumptions used to calculate the cost-benefit ratio. In one scenario, time savings were reduced by half; this changed the IRR and the MIRR to 20.5 percent and 14 percent respectively. In a second scenario, the time taken to achieve full benefits was increased from three to five years, with a resulting IRR of 17.9 percent and a MIRR of 13.9 percent, still highly positive.

15. While no analysis has been conducted on bridges, it is plausible to assume that, since they are on state highways and major district roads, increases in traffic, reductions in vehicle operating costs, and other benefits would be greater than the costs.

***Component C: Strengthening Flood Management Capacity (expected IDA financing: USD30 million)***

16. This component aims to strengthen flood management capacity through a range of structural and non-structural measures including development of a holistic flood risk management framework up to local levels. While there are clear benefits from improving flood management, the impact of capacity building activities on flood management is hard to quantify. Similarly, the structural investments envisaged are small compared to the structural needs of flood protection infrastructure as a whole in the area. So no economic analysis was conducted for this component. Nevertheless, the extent of damages documented in the Needs Assessment is a stark reminder of the impact of floods and the benefits of better flood prevention and management capacity.

***Component D: Livelihoods Restoration and Enhancement (expected IDA financing: USD30 million)***

17. The objective of the livelihoods component is to build social and financial capital and expand livelihood opportunities for the affected population. It supports an expansion of the ongoing Bihar Rural Livelihoods Project (BRLP) from two to 11 blocks in three flood-affected districts and will be implemented by the same agency, Jeevika. As in the BRLP, this component will have four sub-components: (i) Community Institution Development; (ii) Community Investment Fund (CIF); (iii) Technical Assistance Fund; and (iv) Project Management. The CIF, which supports activities that contribute to income generation, livelihoods improvements, food security needs and skills development, is the largest (in this project, it accounts for 80% of Component D) and is the focus of the economic analysis.

18. The precise nature of these activities will be determined in consultation with the communities and is not known ex ante. However, during the preparation of BRLP, four typical activities (dairy production, small ponds, incense stick production, and food bulk purchases, storage, and distribution) were analyzed based on the experience with similar livelihoods projects elsewhere in India, and their financial returns were estimated to range from 28 to 50 percent. Since similar activities would be supported under the present project, rates of return are expected to be similar. As under the BRLP, the project management unit will review activities proposed by communities, and is expected to use a threshold of 12 percent to select activities to be funded under the CIF.

## **Annex 10: Documents in Project Files**

### **INDIA: Bihar Kosi Flood Recovery Project**

1. Hydraulic Model Studies for protection measures for Kosi Afflux Bunds and flood Embankments, Technical Report No. 4680, CWPRS, GoI, December 2009.
2. Technical Committee on Kosi Rehabilitation and Reconstruction, Minutes of Meetings.
3. Kosi Calamity: Rehabilitation and Reconstruction Policy, Department of Planning and Development, GoB.
4. Reconstruction of Multi-Hazard resistant Houses for 2008 Kosi Flood-affected Districts in Bihar: Bamboo based Construction, GoB, 2009.
5. Reconstruction of Multi-Hazard resistant Houses for 2008 Kosi Flood-affected Districts in Bihar: Brick Construction, GoB, 2009.
6. MoU between GoB and ODRC.
7. Bihar Kosi Flood Recovery Project – Needs Assessment by Deltares, Netherlands.
10. Kosi Calamity 2008: Proposal for Rehabilitation and Reconstruction, GoB.
11. Bihar Economic Survey, Department of Finance, GoB 2008-09.
12. Bihar Economic Survey, Department of Finance, GoB 2009-10.
13. Draft Needs Assessment Report prepared jointly by GoB, GFDRR and the World Bank.
14. Simplified Procurement Plan.

## Annex 11: Statement of Loans and Credits

### INDIA: Bihar Kosi Flood Recovery Project

| Project ID | FY   | Purpose                                  | Original Amount in US\$ Millions |          |      |      | Cancel. | Undisb.  | Difference between expected and actual disbursements |            |
|------------|------|--|----------------------------------|----------|------|------|---------|----------|--|------------|
|            |      |  | IBRD                             | IDA      | SF   | GEF  |         |          | Orig.  | Frm. Rev'd |
| P110371    | 2010 | Sustainable Urban Transport Project      | 105.23                           | 0.00     | 0.00 | 0.00 | 0.00    | 97.97    | -7.00  | 0.00       |
| P110051    | 2010 | Haryana Power System Improv Project      | 330.00                           | 0.00     | 0.00 | 0.00 | 0.00    | 302.21   | -26.97   | -26.97     |
| P108489    | 2010 | Statistical Strengthening Loan           | 107.00                           | 0.00     | 0.00 | 0.00 | 0.00    | 107.00   | 0.00   | 0.00       |
| P105990    | 2010 | West Bengal PRI                          | 0.00                             | 200.00   | 0.00 | 0.00 | 0.00    | 191.41   | 0.00   | 0.00       |
| P102771    | 2010 | IIFCL - India Infrs Finance Company Ltd  | 1,195.00                         | 0.00     | 0.00 | 0.00 | 0.00    | 1,192.01 | 0.00   | 0.00       |
| P089985    | 2010 | Dam Rehabilitation & Improvement         | 175.00                           | 175.00   | 0.00 | 0.00 | 0.00    | 345.97   | 0.00   | 0.00       |
| P091031    | 2010 | CBldg for Indus Poll Mgt                 | 25.21                            | 38.94    | 0.00 | 0.00 | 0.00    | 62.78    | 0.00   | 0.00       |
| P092217    | 2010 | National Cyclone Risk Mitigation Project | 0.00                             | 255.00   | 0.00 | 0.00 | 0.00    | 241.33   | 0.00   | 0.00       |
| P102549    | 2010 | Tech Engr Educ Quality Improvement II    | 0.00                             | 300.00   | 0.00 | 0.00 | 0.00    | 286.00   | 0.00   | 0.00       |
| P096021    | 2010 | AP Road Sector Project                   | 320.00                           | 0.00     | 0.00 | 0.00 | 0.00    | 304.20   | -15.00   | 0.00       |
| P097985    | 2010 | Integrated Coastal Zone Management Proje | 0.00                             | 221.97   | 0.00 | 0.00 | 0.00    | 215.78   | 0.00   | 0.00       |
| P100954    | 2010 | AP Water Sector Improvement Project      | 450.60                           | 0.00     | 0.00 | 0.00 | 0.00    | 450.60   | 0.00   | 0.00       |
| P101650    | 2010 | A. P. RWSS                               | 0.00                             | 150.00   | 0.00 | 0.00 | 0.00    | 131.23   | -12.50   | 0.00       |
| P115566    | 2010 | POWERGRID V                              | 1,000.00                         | 0.00     | 0.00 | 0.00 | 0.00    | 986.00   | -14.00   | 0.00       |
| P071250    | 2010 | Andhra Pradesh Municipal Development     | 300.00                           | 0.00     | 0.00 | 0.00 | 0.00    | 279.25   | -16.67   | 0.00       |
| P113028    | 2010 | Mumbai Urban Transport Project-2A        | 430.00                           | 0.00     | 0.00 | 0.00 | 0.00    | 430.00   | 0.00   | 0.00       |
| P119043    | 2010 | Microfinance-Scaling Up Sustnble & Resp  | 200.00                           | 100.00   | 0.00 | 0.00 | 0.00    | 296.41   | 0.00   | 0.00       |
| P094360    | 2009 | National VBD Control&Polio Eradication   | 0.00                             | 521.00   | 0.00 | 0.00 | 0.00    | 404.69   | 65.35  | 0.00       |
| P112033    | 2009 | UP Sodice III                            | 0.00                             | 197.00   | 0.00 | 0.00 | 0.00    | 183.16   | -4.86  | 0.00       |
| P093478    | 2009 | Orissa Rural Livelihoods Project         | 0.00                             | 82.40    | 0.00 | 0.00 | 0.00    | 73.46    | 5.08   | 0.00       |
| P100735    | 2009 | Orissa Community Tank Management Project | 56.00                            | 56.00    | 0.00 | 0.00 | 0.00    | 103.57   | 2.30   | 0.00       |
| P096023    | 2009 | Orissa State Roads                       | 250.00                           | 0.00     | 0.00 | 0.00 | 0.00    | 235.36   | 3.91   | 0.00       |
| P102331    | 2009 | MPDPIP-II                                | 0.00                             | 100.00   | 0.00 | 0.00 | 0.00    | 87.66    | -13.56   | 0.00       |
| P100101    | 2009 | Coal-Fired Generation Rehabilitation     | 180.00                           | 0.00     | 0.00 | 0.00 | 0.00    | 179.55   | 16.50  | 0.00       |
| P102547    | 2008 | Elementary Education (SSA II)            | 0.00                             | 1,350.00 | 0.00 | 0.00 | 0.00    | 612.30   | -141.62  | 0.00       |
| P095114    | 2008 | Rampur Hydropower Project                | 400.00                           | 0.00     | 0.00 | 0.00 | 0.00    | 279.84   | 53.34  | 0.00       |
| P101653    | 2008 | Power System Development Project IV      | 1,000.00                         | 0.00     | 0.00 | 0.00 | 0.00    | 319.54   | -172.13  | 33.21      |
| P099047    | 2007 | Vocational Training India                | 0.00                             | 280.00   | 0.00 | 0.00 | 0.00    | 185.44   | 28.49  | 0.00       |
| P096019    | 2007 | HP State Roads Project                   | 220.00                           | 0.00     | 0.00 | 0.00 | 0.00    | 195.63   | 68.98  | 0.00       |
| P075060    | 2007 | RCH II                                   | 0.00                             | 360.00   | 0.00 | 0.00 | 0.00    | 195.94   | 142.28   | 0.00       |
| P078538    | 2007 | Third National HIV/AIDS Control Project  | 0.00                             | 250.00   | 0.00 | 0.00 | 0.07    | 162.26   | 140.74   | 0.00       |
| P078539    | 2007 | TB II                                    | 0.00                             | 170.00   | 0.00 | 0.00 | 0.00    | 90.69    | -10.76   | 0.00       |
| P083187    | 2007 | Uttaranchal RWSS                         | 0.00                             | 120.00   | 0.00 | 0.00 | 0.00    | 95.72    | 65.66  | 0.00       |
| P102768    | 2007 | Stren India's Rural Credit Coops         | 300.00                           | 300.00   | 0.00 | 0.00 | 0.00    | 223.97   | 146.83   | 0.00       |

|         |      |  |           |          |      |      |        |           |          |        |
|---------|------|--|-----------|----------|------|------|--------|-----------|----------|--------|
| P090585 | 2007 | Punjab State Roads Project               | 250.00    | 0.00     | 0.00 | 0.00 | 0.00   | 115.62    | 8.57     | 0.00   |
| P090592 | 2007 | Punjab Rural Water Supply & Sanitation   | 0.00      | 154.00   | 0.00 | 0.00 | 0.00   | 125.29    | 105.43   | 0.00   |
| P090764 | 2007 | Bihar Rural Livelihoods Project          | 0.00      | 63.00    | 0.00 | 0.00 | 0.00   | 46.19     | -7.77    | -1.75  |
| P090768 | 2007 | TN IAM WARM                              | 335.00    | 150.00   | 0.00 | 0.00 | 0.00   | 353.03    | 123.93   | 0.00   |
| P071160 | 2007 | Karnataka Health Systems                 | 0.00      | 141.83   | 0.00 | 0.00 | 0.00   | 67.63     | 2.11     | 0.00   |
| P100789 | 2007 | AP Community Tank Management Project     | 94.50     | 94.50    | 0.00 | 0.00 | 0.00   | 161.71    | 55.87    | 0.00   |
| P093720 | 2006 | Mid-Himalayan (HP) Watersheds            | 0.00      | 60.00    | 0.00 | 0.00 | 0.00   | 23.29     | 6.13     | 0.00   |
| P092735 | 2006 | NAIP                                     | 0.00      | 200.00   | 0.00 | 0.00 | 0.00   | 118.50    | 44.21    | 0.00   |
| P086414 | 2006 | Power System Development Project III     | 400.00    | 0.00     | 0.00 | 0.00 | 0.00   | 14.72     | -35.28   | 0.00   |
| P083780 | 2006 | TN Urban III                             | 300.00    | 0.00     | 0.00 | 0.00 | 0.00   | 164.44    | 125.19   | 13.85  |
| P079708 | 2006 | TN Empwr & Pov Reduction                 | 0.00      | 120.00   | 0.00 | 0.00 | 0.00   | 45.84     | 25.87    | 0.00   |
| P079675 | 2006 | Karn Municipal Reform                    | 216.00    | 0.00     | 0.00 | 0.00 | 0.00   | 166.77    | 115.11   | 0.00   |
| P078832 | 2006 | Karnataka Panchayats Strengthening Proj  | 0.00      | 120.00   | 0.00 | 0.00 | 0.00   | 59.59     | -46.48   | 0.00   |
| P073370 | 2005 | Madhya Pradesh Water Sector Restructurin | 394.02    | 0.00     | 0.00 | 0.00 | 6.62   | 249.52    | 232.87   | 0.00   |
| P073651 | 2005 | DISEASE SURVEILLANCE                     | 0.00      | 68.00    | 0.00 | 0.00 | 8.31   | 40.12     | 44.95    | -0.07  |
| P075058 | 2005 | TN HEALTH SYSTEMS                        | 0.00      | 228.53   | 0.00 | 0.00 | 20.06  | 118.56    | 18.70    | -2.53  |
| P077856 | 2005 | Lucknow-Muzaffarpur National Highway     | 620.00    | 0.00     | 0.00 | 0.00 | 0.00   | 123.44    | 96.77    | 0.00   |
| P077977 | 2005 | Rural Roads Project                      | 99.50     | 300.00   | 0.00 | 0.00 | 0.00   | 40.97     | 32.43    | 0.00   |
| P094513 | 2005 | India Tsunami ERC                        | 0.00      | 465.00   | 0.00 | 0.00 | 0.00   | 350.85    | 358.87   | -6.76  |
| P086518 | 2005 | SME Financing & Development              | 520.00    | 0.00     | 0.00 | 0.00 | 0.00   | 248.03    | -150.97  | -17.64 |
| P084792 | 2005 | Assam Agric Competitiveness              | 0.00      | 154.00   | 0.00 | 0.00 | 0.00   | 49.39     | 43.94    | -6.87  |
| P084790 | 2005 | MAHAR WSIP                               | 325.00    | 0.00     | 0.00 | 0.00 | 0.00   | 168.90    | 137.90   | 0.00   |
| P084632 | 2005 | Hydrology II                             | 104.98    | 0.00     | 0.00 | 0.00 | 0.00   | 77.31     | 72.39    | 55.49  |
| P078550 | 2004 | Uttar Wtrshed                            | 0.00      | 69.62    | 0.00 | 0.00 | 0.00   | 19.66     | -0.15    | 0.00   |
| P082510 | 2004 | Karnataka UWS Improvement Project        | 39.50     | 0.00     | 0.00 | 0.00 | 0.00   | 6.76      | 6.76     | 0.00   |
| P050655 | 2004 | RAJASTHAN HEALTH SYSTEMS DEVELOPMENT     | 0.00      | 89.00    | 0.00 | 0.00 | 0.00   | 28.99     | 25.88    | -1.10  |
| P071272 | 2003 | AP RURAL POV REDUCTION                   | 0.00      | 315.03   | 0.00 | 0.00 | 0.00   | 77.26     | -101.84  | 4.29   |
| P050649 | 2003 | TN ROADS                                 | 398.70    | 0.00     | 0.00 | 0.00 | 0.00   | 60.68     | 9.98     | 0.00   |
| P067606 | 2003 | UP ROADS                                 | 488.00    | 0.00     | 0.00 | 0.00 | 0.00   | 64.03     | 64.03    | -5.45  |
| P050647 | 2002 | UP WSRP                                  | 0.00      | 149.20   | 0.00 | 0.00 | 40.11  | 43.39     | 56.12    | 0.00   |
| P050653 | 2002 | KARNATAKA RWSS II                        | 0.00      | 301.60   | 0.00 | 0.00 | 15.04  | 155.90    | -1.80    | 0.00   |
| P050668 | 2002 | MUMBAI URBAN TRANSPORT PROJECT           | 463.00    | 79.00    | 0.00 | 0.00 | 0.00   | 160.40    | 148.80   | 161.80 |
| P040610 | 2002 | RAJ WSRP                                 | 0.00      | 159.00   | 0.00 | 0.00 | 25.84  | 49.42     | 20.12    | -16.13 |
| P069889 | 2002 | MIZORAM ROADS                            | 0.00      | 78.00    | 0.00 | 0.00 | 0.00   | 0.35      | -29.20   | -5.22  |
| P071033 | 2002 | KARN Tank Mgmt                           | 32.00     | 130.90   | 0.00 | 0.00 | 25.07  | 105.73    | 46.82    | -3.22  |
| P072539 | 2002 | KERALA STATE TRANSPORT                   | 255.00    | 0.00     | 0.00 | 0.00 | 0.00   | 59.09     | 59.09    | 0.00   |
| Total:  |      |  | 12,379.24 | 8,917.52 | 0.00 | 0.00 | 141.12 | 13,310.30 | 2,019.74 | 174.93 |

**INDIA**  
**STATEMENT OF IFC's**  
**Held and Disbursed Portfolio**  
**In Millions of US Dollars**

| FY Approval | Company        | Committed |        |       |         | Disbursed |        |       |         |
|-------------|----------------|-----------|--------|-------|---------|-----------|--------|-------|---------|
|             |                | IFC       |        |       |         | IFC       |        |       |         |
|             |                | Loan      | Equity | Quasi | Partic. | Loan      | Equity | Quasi | Partic. |
| 2005        | ADPCL          | 39.50     | 7.00   | 0.00  | 0.00    | 0.00      | 0.00   | 0.00  | 0.00    |
| 2006        | AHEL           | 0.00      | 5.08   | 0.00  | 0.00    | 0.00      | 5.08   | 0.00  | 0.00    |
| 2005        | AP Paper Mills | 35.00     | 5.00   | 0.00  | 0.00    | 25.00     | 5.00   | 0.00  | 0.00    |
| 2005        | APIDC Biotech  | 0.00      | 4.00   | 0.00  | 0.00    | 0.00      | 2.01   | 0.00  | 0.00    |
| 2002        | ATL            | 13.81     | 0.00   | 0.00  | 9.36    | 13.81     | 0.00   | 0.00  | 9.36    |
| 2003        | ATL            | 1.00      | 0.00   | 0.00  | 0.00    | 0.68      | 0.00   | 0.00  | 0.00    |
| 2005        | ATL            | 9.39      | 0.00   | 0.00  | 0.00    | 0.00      | 0.00   | 0.00  | 0.00    |
| 2006        | Atul Ltd       | 16.77     | 0.00   | 0.00  | 0.00    | 0.00      | 0.00   | 0.00  | 0.00    |
| 2003        | BHF            | 10.30     | 0.00   | 10.30 | 0.00    | 10.30     | 0.00   | 10.30 | 0.00    |
| 2004        | BILT           | 0.00      | 0.00   | 15.00 | 0.00    | 0.00      | 0.00   | 15.00 | 0.00    |
| 2001        | BTVL           | 0.43      | 3.98   | 0.00  | 0.00    | 0.43      | 3.98   | 0.00  | 0.00    |
| 2003        | Balrampur      | 10.52     | 0.00   | 0.00  | 0.00    | 10.52     | 0.00   | 0.00  | 0.00    |
| 2001        | Basix Ltd.     | 0.00      | 0.98   | 0.00  | 0.00    | 0.00      | 0.98   | 0.00  | 0.00    |
| 2005        | Bharat Biotech | 0.00      | 0.00   | 4.50  | 0.00    | 0.00      | 0.00   | 3.30  | 0.00    |
| 1984        | Bihar Sponge   | 5.70      | 0.00   | 0.00  | 0.00    | 5.70      | 0.00   | 0.00  | 0.00    |
| 2003        | CCIL           | 1.50      | 0.00   | 0.00  | 0.00    | 0.59      | 0.00   | 0.00  | 0.00    |
| 2006        | CCIL           | 7.00      | 2.00   | 0.00  | 12.40   | 7.00      | 2.00   | 0.00  | 12.40   |
| 1990        | CESC           | 4.61      | 0.00   | 0.00  | 0.00    | 4.61      | 0.00   | 0.00  | 0.00    |
| 1992        | CESC           | 6.55      | 0.00   | 0.00  | 14.59   | 6.55      | 0.00   | 0.00  | 14.59   |
| 2004        | CGL            | 14.38     | 0.00   | 0.00  | 0.00    | 7.38      | 0.00   | 0.00  | 0.00    |
| 2004        | CMScomputers   | 0.00      | 10.00  | 2.50  | 0.00    | 0.00      | 0.00   | 0.00  | 0.00    |
| 2002        | COSMO          | 2.50      | 0.00   | 0.00  | 0.00    | 2.50      | 0.00   | 0.00  | 0.00    |
| 2005        | COSMO          | 0.00      | 3.73   | 0.00  | 0.00    | 0.00      | 3.73   | 0.00  | 0.00    |
| 2006        | Chennai Water  | 24.78     | 0.00   | 0.00  | 0.00    | 0.00      | 0.00   | 0.00  | 0.00    |
| 2003        | DQEL           | 0.00      | 1.50   | 1.50  | 0.00    | 0.00      | 1.50   | 1.50  | 0.00    |
| 2005        | DSCL           | 30.00     | 0.00   | 0.00  | 0.00    | 30.00     | 0.00   | 0.00  | 0.00    |
| 2006        | DSCL           | 15.00     | 0.00   | 0.00  | 0.00    | 0.00      | 0.00   | 0.00  | 0.00    |
| 2005        | Dabur          | 0.00      | 14.09  | 0.00  | 0.00    | 0.00      | 14.09  | 0.00  | 0.00    |
| 2003        | Dewan          | 8.68      | 0.00   | 0.00  | 0.00    | 8.68      | 0.00   | 0.00  | 0.00    |
| 2006        | Federal Bank   | 0.00      | 28.06  | 0.00  | 0.00    | 0.00      | 23.99  | 0.00  | 0.00    |
| 2001        | GTF Fact       | 0.00      | 1.20   | 0.00  | 0.00    | 0.00      | 1.20   | 0.00  | 0.00    |
| 2006        | GTF Fact       | 0.00      | 0.00   | 0.99  | 0.00    | 0.00      | 0.00   | 0.99  | 0.00    |
| 1994        | GVK            | 0.00      | 4.83   | 0.00  | 0.00    | 0.00      | 4.83   | 0.00  | 0.00    |
| 2003        | HDFC           | 100.00    | 0.00   | 0.00  | 100.00  | 100.00    | 0.00   | 0.00  | 100.00  |
| 1998        | IAAF           | 0.00      | 0.47   | 0.00  | 0.00    | 0.00      | 0.30   | 0.00  | 0.00    |
| 2006        | IAL            | 0.00      | 9.79   | 0.00  | 0.00    | 0.00      | 7.70   | 0.00  | 0.00    |
| 1998        | IDFC           | 0.00      | 10.82  | 0.00  | 0.00    | 0.00      | 10.82  | 0.00  | 0.00    |
| 2005        | IDFC           | 50.00     | 0.00   | 0.00  | 100.00  | 50.00     | 0.00   | 0.00  | 100.00  |
|             | IHDC           | 6.94      | 0.00   | 0.00  | 0.00    | 0.00      | 0.00   | 0.00  | 0.00    |
| 2006        | IHDC           | 7.90      | 0.00   | 0.00  | 0.00    | 0.00      | 0.00   | 0.00  | 0.00    |

|      |                  |        |       |      |        |       |       |      |      |
|------|------------------|--------|-------|------|--------|-------|-------|------|------|
| 2006 | Indecomm         | 0.00   | 2.57  | 0.00 | 0.00   | 0.00  | 2.57  | 0.00 | 0.00 |
| 1996 | India Direct Fnd | 0.00   | 1.10  | 0.00 | 0.00   | 0.00  | 0.66  | 0.00 | 0.00 |
| 2001 | Indian Seamless  | 6.00   | 0.00  | 0.00 | 0.00   | 6.00  | 0.00  | 0.00 | 0.00 |
| 2006 | JK Paper         | 15.00  | 7.62  | 0.00 | 0.00   | 0.00  | 7.38  | 0.00 | 0.00 |
| 2005 | K Mahindra INDIA | 22.00  | 0.00  | 0.00 | 0.00   | 22.00 | 0.00  | 0.00 | 0.00 |
| 2005 | KPIT             | 11.00  | 2.50  | 0.00 | 0.00   | 8.00  | 2.50  | 0.00 | 0.00 |
| 2003 | L&T              | 50.00  | 0.00  | 0.00 | 0.00   | 50.00 | 0.00  | 0.00 | 0.00 |
| 2006 | LGB              | 14.21  | 4.82  | 0.00 | 0.00   | 0.00  | 4.82  | 0.00 | 0.00 |
| 2006 | Lok Fund         | 0.00   | 2.00  | 0.00 | 0.00   | 0.00  | 0.00  | 0.00 | 0.00 |
| 2002 | MMFSL            | 7.89   | 0.00  | 7.51 | 0.00   | 7.89  | 0.00  | 7.51 | 0.00 |
| 2003 | MSSL             | 0.00   | 2.29  | 0.00 | 0.00   | 0.00  | 2.20  | 0.00 | 0.00 |
| 2001 | MahInfra         | 0.00   | 10.00 | 0.00 | 0.00   | 0.00  | 0.79  | 0.00 | 0.00 |
|      | Montalvo         | 0.00   | 3.00  | 0.00 | 0.00   | 0.00  | 1.08  | 0.00 | 0.00 |
| 1996 | Moser Baer       | 0.00   | 0.82  | 0.00 | 0.00   | 0.00  | 0.82  | 0.00 | 0.00 |
| 1999 | Moser Baer       | 0.00   | 8.74  | 0.00 | 0.00   | 0.00  | 8.74  | 0.00 | 0.00 |
| 2000 | Moser Baer       | 12.75  | 10.54 | 0.00 | 0.00   | 12.75 | 10.54 | 0.00 | 0.00 |
|      | Nevis            | 0.00   | 4.00  | 0.00 | 0.00   | 0.00  | 4.00  | 0.00 | 0.00 |
| 2003 | NewPath          | 0.00   | 9.31  | 0.00 | 0.00   | 0.00  | 8.31  | 0.00 | 0.00 |
| 2004 | NewPath          | 0.00   | 2.79  | 0.00 | 0.00   | 0.00  | 2.49  | 0.00 | 0.00 |
| 2003 | Niko Resources   | 24.44  | 0.00  | 0.00 | 0.00   | 24.44 | 0.00  | 0.00 | 0.00 |
| 2001 | Orchid           | 0.00   | 0.73  | 0.00 | 0.00   | 0.00  | 0.73  | 0.00 | 0.00 |
| 1997 | Owens Corning    | 5.92   | 0.00  | 0.00 | 0.00   | 5.92  | 0.00  | 0.00 | 0.00 |
| 2006 | PSL Limited      | 15.00  | 4.74  | 0.00 | 0.00   | 0.00  | 4.54  | 0.00 | 0.00 |
| 2004 | Powerlinks       | 72.98  | 0.00  | 0.00 | 0.00   | 64.16 | 0.00  | 0.00 | 0.00 |
| 2004 | RAK India        | 20.00  | 0.00  | 0.00 | 0.00   | 20.00 | 0.00  | 0.00 | 0.00 |
| 1995 | Rain Calcining   | 0.00   | 2.29  | 0.00 | 0.00   | 0.00  | 2.29  | 0.00 | 0.00 |
| 2004 | Rain Calcining   | 10.00  | 0.00  | 0.00 | 0.00   | 10.00 | 0.00  | 0.00 | 0.00 |
| 2005 | Ramky            | 3.74   | 10.28 | 0.00 | 0.00   | 0.00  | 0.00  | 0.00 | 0.00 |
| 2005 | Ruchi Soya       | 0.00   | 9.27  | 0.00 | 0.00   | 0.00  | 6.77  | 0.00 | 0.00 |
| 2001 | SBI              | 50.00  | 0.00  | 0.00 | 0.00   | 0.00  | 0.00  | 0.00 | 0.00 |
| 1997 | SREI             | 3.21   | 0.00  | 0.00 | 0.00   | 3.21  | 0.00  | 0.00 | 0.00 |
| 2000 | SREI             | 6.50   | 0.00  | 0.00 | 0.00   | 6.50  | 0.00  | 0.00 | 0.00 |
| 1995 | Sara Fund        | 0.00   | 3.43  | 0.00 | 0.00   | 0.00  | 3.43  | 0.00 | 0.00 |
| 2004 | SeaLion          | 4.40   | 0.00  | 0.00 | 0.00   | 4.40  | 0.00  | 0.00 | 0.00 |
| 2001 | Spryance         | 0.00   | 1.86  | 0.00 | 0.00   | 0.00  | 1.86  | 0.00 | 0.00 |
| 2003 | Spryance         | 0.00   | 0.93  | 0.00 | 0.00   | 0.00  | 0.93  | 0.00 | 0.00 |
| 2004 | Sundaram Finance | 42.93  | 0.00  | 0.00 | 0.00   | 42.93 | 0.00  | 0.00 | 0.00 |
| 2000 | Sundaram Home    | 0.00   | 2.18  | 0.00 | 0.00   | 0.00  | 2.18  | 0.00 | 0.00 |
| 2002 | Sundaram Home    | 6.71   | 0.00  | 0.00 | 0.00   | 6.71  | 0.00  | 0.00 | 0.00 |
| 1998 | TCW/ICICI        | 0.00   | 0.80  | 0.00 | 0.00   | 0.00  | 0.80  | 0.00 | 0.00 |
| 2005 | TISCO            | 100.00 | 0.00  | 0.00 | 300.00 | 0.00  | 0.00  | 0.00 | 0.00 |
| 2004 | UPL              | 15.45  | 0.00  | 0.00 | 0.00   | 15.45 | 0.00  | 0.00 | 0.00 |
| 1996 | United Riceland  | 5.63   | 0.00  | 0.00 | 0.00   | 5.63  | 0.00  | 0.00 | 0.00 |
| 2005 | United Riceland  | 8.50   | 0.00  | 0.00 | 0.00   | 5.00  | 0.00  | 0.00 | 0.00 |
| 2002 | Usha Martin      | 0.00   | 0.72  | 0.00 | 0.00   | 0.00  | 0.72  | 0.00 | 0.00 |
| 2001 | Vysya Bank       | 0.00   | 3.66  | 0.00 | 0.00   | 0.00  | 3.66  | 0.00 | 0.00 |
| 2005 | Vysya Bank       | 0.00   | 3.51  | 0.00 | 0.00   | 0.00  | 3.51  | 0.00 | 0.00 |
| 1997 | WIV              | 0.00   | 0.37  | 0.00 | 0.00   | 0.00  | 0.37  | 0.00 | 0.00 |
| 1997 | Walden-Mgt India | 0.00   | 0.01  | 0.00 | 0.00   | 0.00  | 0.01  | 0.00 | 0.00 |

|                  |               |        |        |       |        |        |        |       |        |
|------------------|---------------|--------|--------|-------|--------|--------|--------|-------|--------|
| 2006             | iLabs Fund II | 0.00   | 20.00  | 0.00  | 0.00   | 0.00   | 0.00   | 0.00  | 0.00   |
| Total portfolio: |               | 956.52 | 249.41 | 42.30 | 536.35 | 604.74 | 175.91 | 38.60 | 236.35 |

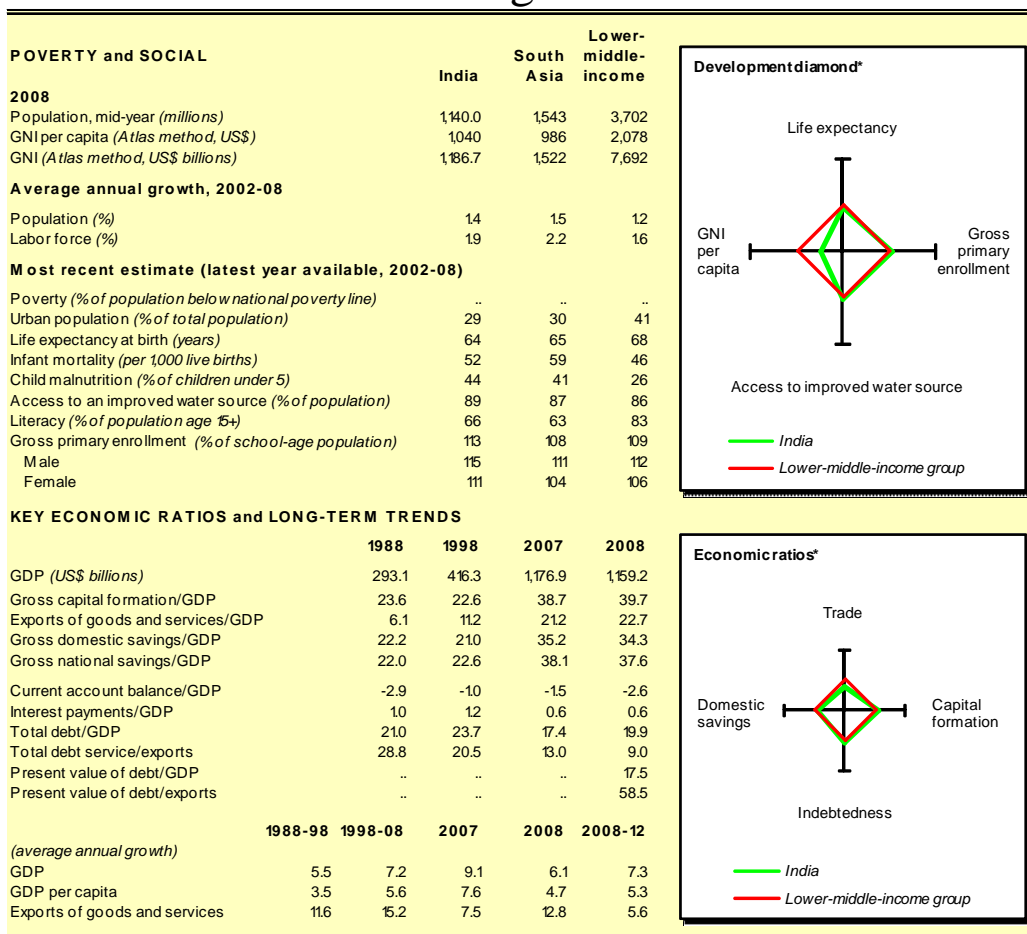
|                           |                 | <b>Approvals Pending Commitment</b> |        |       |         |
|---------------------------|-----------------|-------------------------------------|--------|-------|---------|
| FY Approval               | Company         | Loan                                | Equity | Quasi | Partic. |
| 2004                      | CGL             | 0.01                                | 0.00   | 0.00  | 0.00    |
| 2000                      | APCL            | 0.01                                | 0.00   | 0.00  | 0.00    |
| 2006                      | Atul Ltd        | 0.00                                | 0.01   | 0.00  | 0.00    |
| 2001                      | Vysya Bank      | 0.00                                | 0.00   | 0.00  | 0.00    |
| 2006                      | Federal Bank    | 0.01                                | 0.00   | 0.00  | 0.00    |
| 2001                      | GI Wind Farms   | 0.01                                | 0.00   | 0.00  | 0.00    |
| 2004                      | Ocean Sparkle   | 0.00                                | 0.00   | 0.00  | 0.00    |
| 2005                      | Allain Duhangan | 0.00                                | 0.00   | 0.00  | 0.00    |
| Total pending commitment: |                 | 0.04                                | 0.01   | 0.00  | 0.00    |

## Annex 12: Country at a Glance

### INDIA: Bihar Kosi Flood Recovery Project

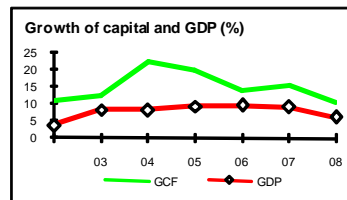
### India at a glance

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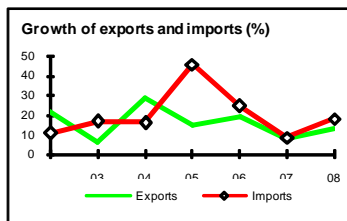


#### STRUCTURE of the ECONOMY

|   | 1988 | 1998 | 2007 | 2008 |
|---|------|------|------|------|
| (% of GDP)                                  |      |      |      |      |
| Agriculture                                 | 30.5 | 26.0 | 18.1 | 17.5 |
| Industry                                    | 26.2 | 26.1 | 29.5 | 28.8 |
| Manufacturing                               | 16.2 | 15.5 | 16.3 | 15.8 |
| Services                                    | 43.4 | 47.9 | 52.4 | 53.7 |
| Household final consumption expenditure     | 65.8 | 66.7 | 54.7 | 54.1 |
| General gov't final consumption expenditure | 12.0 | 12.3 | 10.1 | 11.6 |
| Imports of goods and services               | 7.5  | 12.8 | 24.7 | 28.0 |



|   | 1988-98 | 1998-08 | 2007 | 2008 |
|---|---------|---------|------|------|
| (average annual growth)                     |         |         |      |      |
| Agriculture                                 | 3.1     | 2.7     | 4.9  | 1.6  |
| Industry                                    | 6.1     | 7.6     | 8.1  | 3.9  |
| Manufacturing                               | 6.6     | 7.2     | 8.2  | 2.4  |
| Services                                    | 7.0     | 8.9     | 10.9 | 9.7  |
| Household final consumption expenditure     | 5.6     | 6.0     | 6.0  | 3.6  |
| General gov't final consumption expenditure | 4.9     | 4.5     | 8.4  | 20.2 |
| Gross capital formation                     | 6.4     | 12.6    | 15.6 | 10.7 |
| Imports of goods and services               | 13.6    | 16.1    | 8.6  | 17.9 |



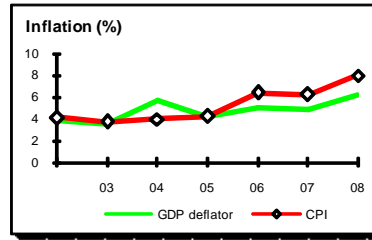
Note: 2008 data are preliminary estimates.

This table was produced from the Development Economics LDB database.

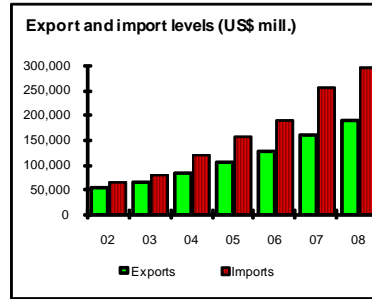
\* The diamonds show four key indicators in the country (in bold) compared with its income-group average. If data are missing, the diamond will be incomplete.

**PRICES and GOVERNMENT FINANCE**

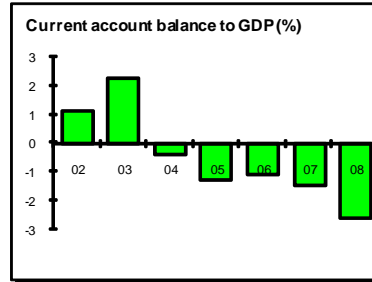
|  | 1988 | 1998 | 2007 | 2008 |
|--|------|------|------|------|
| <b>Domestic prices</b>                     |      |      |      |      |
| <i>(% change)</i>                          |      |      |      |      |
| Consumer prices                            | 11.2 | 13.1 | 6.2  | 8.0  |
| Implicit GDP deflator                      | 8.2  | 8.0  | 4.9  | 6.2  |
| <b>Government finance</b>                  |      |      |      |      |
| <i>(% of GDP, includes current grants)</i> |      |      |      |      |
| Current revenue                            | 19.0 | ..   | 21.9 | 20.9 |
| Current budget balance                     | -2.8 | ..   | -3.2 | -7.6 |
| Overall surplus/deficit                    | ..   | ..   | -6.0 | -9.6 |

**TRADE**

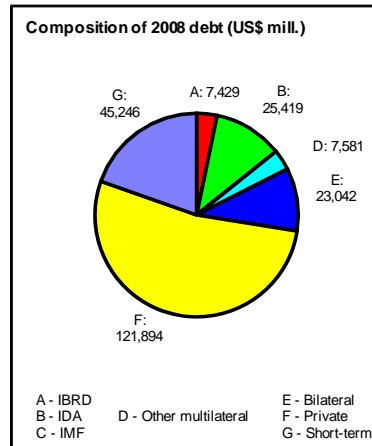
|                               | 1988   | 1998   | 2007    | 2008    |
|-------------------------------|--------|--------|---------|---------|
| <i>(US\$ millions)</i>        |        |        |         |         |
| Total exports (fob)           | 14,257 | 33,219 | 159,007 | 190,000 |
| Tea                           | 435    | 1,038  | 1,703   | ..      |
| Iron                          | 825    | 893    | 9,005   | ..      |
| Manufactures                  | 10,110 | 25,792 | 102,943 | 108,281 |
| Total imports (cif)           | 23,618 | 47,544 | 257,789 | 296,614 |
| Food                          | 1,304  | 2,524  | 4,575   | ..      |
| Fuel and energy               | 3,009  | 6,399  | 79,641  | ..      |
| Capital goods                 | 4,803  | 10,064 | 58,393  | 71,237  |
| Export price index (2000=100) | ..     | ..     | 152     | 161     |
| Import price index (2000=100) | ..     | ..     | 162     | 182     |
| Terms of trade (2000=100)     | ..     | ..     | 93      | 89      |

**BALANCE of PAYMENTS**

|   | 1988   | 1998    | 2007    | 2008    |
|---|--------|---------|---------|---------|
| <i>(US\$ millions)</i>                  |        |         |         |         |
| Exports of goods and services           | 18,210 | 47,484  | 256,240 | 276,408 |
| Imports of goods and services           | 26,842 | 58,565  | 310,301 | 345,993 |
| Resource balance                        | -8,632 | -11,081 | -54,061 | -69,585 |
| Net income                              | -2,519 | -3,544  | -4,917  | -4,511  |
| Net current transfers                   | 2,652  | 10,280  | 41,944  | 44,279  |
| Current account balance                 | -8,499 | -4,345  | -17,273 | -30,049 |
| Financing items (net)                   | 7,495  | 8,174   | 109,437 | 9,969   |
| Changes in net reserves                 | 1,004  | -3,829  | -92,164 | 20,080  |
| <b>Memo:</b>                            |        |         |         |         |
| Reserves including gold (US\$ millions) | 4,802  | 32,490  | 309,287 | 351,259 |
| Conversion rate (DEC, local/US\$)       | 14.5   | 42.1    | 40.1    | 45.9    |

**EXTERNAL DEBT and RESOURCE FLOWS**

|  | 1988   | 1998   | 2007    | 2008    |
|--|--------|--------|---------|---------|
| <i>(US\$ millions)</i>                   |        |        |         |         |
| Total debt outstanding and disbursed     | 61,659 | 98,774 | 204,992 | 230,611 |
| IBRD                                     | 5,590  | 7,991  | 6,680   | 7,429   |
| IDA                                      | 12,186 | 18,562 | 25,378  | 25,419  |
| Total debt service                       | 6,055  | 12,039 | 39,036  | 31,076  |
| IBRD                                     | 777    | 1,377  | 702     | 703     |
| IDA                                      | 179    | 423    | 894     | 970     |
| <b>Composition of net resource flows</b> |        |        |         |         |
| Official grants                          | 700    | 490    | 1,145   | 1,169   |
| Official creditors                       | 2,661  | 948    | 2,565   | 3,539   |
| Private creditors                        | 5,679  | 3,187  | 29,798  | 11,782  |
| Foreign direct investment (net inflows)  | 91     | 2,635  | 25,127  | 41,169  |
| Portfolio equity (net inflows)           | 0      | -601   | 34,986  | -15,030 |
| <b>World Bank program</b>                |        |        |         |         |
| Commitments                              | 2,648  | 1,755  | 3,309   | 1,200   |
| Disbursements                            | 2,478  | 1,399  | 1,805   | 2,083   |
| Principal repayments                     | 383    | 1,129  | 1,050   | 1,159   |
| Net flows                                | 2,095  | 270    | 754     | 924     |
| Interest payments                        | 573    | 671    | 546     | 514     |
| Net transfers                            | 1,522  | -401   | 208     | 410     |



Note: This table was produced from the Development Economics LDB database.

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## Annex 13: Map

### INDIA: Bihar Kosi Flood Recovery Project

