



1. Project Data

Project ID

P122096

Project Name

IN: Bihar Kosi Flood Recovery Project

Country

India

Practice Area(Lead)

Social, Urban, Rural and Resilience Global Practice

L/C/TF Number(s)

IDA-48020

Closing Date (Original)

14-Sep-2014

Total Project Cost (USD)

126,814,196.59

Bank Approval Date

09-Sep-2010

Closing Date (Actual)

30-Jun-2018

IBRD/IDA (USD)
Grants (USD)

Original Commitment

220,000,000.00

0.00

Revised Commitment

169,935,196.00

0.00

Actual

126,261,385.58

0.00

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2. Project Objectives and Components

a. Objectives

The project development objective was “to support the flood recovery, as well as future-oriented risk reduction efforts, of the Government of Bihar through: (i) the reconstruction of damaged houses and road infrastructure; (ii) the strengthening of the flood management capacity in the Kosi basin; (iii) the enhancement of livelihood



opportunities of the affected people; and (iv) the improvement of the emergency response capacity for future disasters" (Financing Agreement dated January 12, 2011, page 4).

b. Were the project objectives/key associated outcome targets revised during implementation?

Yes

Did the Board approve the revised objectives/key associated outcome targets?

Yes

Date of Board Approval

20-Feb-2014

c. Will a split evaluation be undertaken?

Yes

d. Components

**There were two revisions in allocation: in 2013 and 2014. The revised allocations below reflect the 2014 revisions only.*

Component 1: Owner Driven Housing Reconstruction (original allocation at approval: US\$74.8 million; revised allocation US\$65.0 million; actual US\$52.2 million). The objective of this component was to reconstruct about 100,000 damaged houses and reduce vulnerability of the affected population. The project adopted an owner-driven reconstruction model to build earthquake-, flood-, and high wind velocity resistant houses in three types of designs: (a) brick superstructure with reinforced cement concrete (RCC) roof; (b) brick superstructure with corrugated galvanized iron (CGI) sheeting roofing, and (c) treated bamboo superstructure with CGI roofing.

Component 2: Reconstruction of Roads and Bridges (original allocation at approval: US\$82.3 million; revised allocation US\$67.8 million; actual US\$63.5 million). The objective of this component was to restore the connectivity and originally designed 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.

Component 3: Strengthening Flood Management Capacity (original allocation at approval: US\$35.3 million; revised allocation: US\$59.0 million; actual US\$32.0 million). The objective of this component was 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. The component



had three subcomponents: (a) knowledge management and capacity building, (b) flood forecasting and early warning, and (c) structural investments.

Component 4: Livelihood Restoration and Enhancement (original allocation at approval: US\$35.3 million; revised allocation: US\$4.2 million; actual US\$4.2 million). The objective of this component was to build social and financial capital and expand the livelihood opportunities of the affected people in 13 blocks of the affected communities in the districts of Madhepura, Supaul, and Saharsa. This component had four subcomponents: (a) Community Institution Development; (b) Community Investment Fund; (b) Technical Assistance Fund; and (d) Project Management by the Bihar Rural Livelihood Promotion Society (BRLPS) established under another World Bank-financed operation, the Bihar Rural Livelihood Project (BRLP). The component also aimed to build community preparedness for disasters into the working of community-based institutions like the self-help groups (SHGs) and village organizations (VOs).

Component 5: Contingency Emergency Response Fund (original allocation at approval: US\$20 million; revised allocation: US\$0; actual US\$0). The objective of this component was to make contingency funding available for civil works and consultant services and goods required to respond in case of future emergencies. The detailed investments were dependent on the nature, location, and priority needs of the specific emergency. In addition, the component allowed the financing of public and private sector expenditures directly related to the emergency recovery program.

Component 6: Project Management and Implementation Support (original allocation at approval: US\$11.7 million; revised allocation: US\$8.0 million; actual US\$7.4 million). The objective of this component was to support project implementation through the provision of necessary offices including equipment and the financing of the associated incremental cost of project management teams at the state and district levels. It included similar incremental operating cost of implementing agencies (IAs). This component also financed the cost of consulting services for design, planning, and implementation support; management; quality, procurement, financial, and third-party audits; evaluation and monitoring. In addition, technical studies, pilot initiatives, and other project preparation expenses including those required for the preparation of the successive phases of the project were included.

Revisions under the components:

In June 2013, the following changes were made to the components:

- Component 1: the allocation was revised to increase financing for construction of toilets.



- The allocation for financing the construction of toilets was found to be inadequate, and in line with the beneficiary needs assessment, it was increased by US\$10 million (Restructuring Project Paper, 2013).
- Component 3: The scope was expanded to include additional embankment strengthening works using alternative designs and construction materials.
- Component 4: The implementation of the remaining planned activities was re-allocated under another similar World Bank-financed operation (the National Rural Livelihood Project) in the State of Bihar. The balance of \$21.50 million was re-allocated to other components under the project.
- Component 5: The contingency funding was re-allocated under other components and a zero-component for emergency response financing was reflected as zero allocation.

In February 2014, the scope of project components is reduced for Component 1, 3, and 6.

e. Comments on Project Cost, Financing, Borrower Contribution, and Dates

Total Project Cost: The total project cost was US\$159.2 million or 61 % of the original estimated cost of US\$259 million, due to the reduction in scope and the depreciation of the Indian rupee against the U.S. dollar.

Financing: The project was financed through an IDA credit of US\$ 220 million equivalent. In 2014, US\$50 million equivalent was cancelled primarily due to exchange rate differences, reduction in actual beneficiaries for housing reconstruction, and slow pace of work in flood management component. At closure, approximately US\$41.74 million remained undisbursed out of the revised total credit amount of US\$170 million, mainly because of: i) further depreciation of the Indian Rupee against the US dollar after the 2014 restructuring; ii) no-payment for ineligible beneficiaries (3,756 beneficiaries found ineligible out of 65,440 beneficiaries) and unused third installment (for solar lighting installation) by some beneficiaries under Component 1; and iii) transfer of the remaining work of the protection and restoration works, equivalent to US\$ 18 million, under Component 3 to Bihar Kosi Basin Development Project. The total IDA credit disbursement was US\$126.3 million.

Borrower contribution: The Borrower committed US\$39 million and contributed US\$33.0 million.



Dates: The project was approved in September 2010 and became effective in March 2011. The original closing date was twice extended by a total of about four years from September 14, 2014 to June 30, 2018. The project was restructured four times, with the following main changes:

- In June 2013, there were revisions into the components (discussed above), re-allocation of funding, and modification of the result indicators in line with the revised allocations and the component descriptions.
- In February 2014: The project was restructured to cancel US\$50 million equivalent primarily due to exchange rate differences, reduction in actual beneficiaries for housing reconstruction, and slow pace of work in flood management component. The result matrix and outcome targets were revised to reflect the revised scope of the components.
- In August 2014, the closing date was extended by 21.5 months.
- In May 2016: The closing date was extended by another two years from June 30, 2016 to June 30, 2018 due to delays in the implementation of several activities.

3. Relevance of Objectives

Rationale

Kosi floods in 2008 were among the worst flood disasters in the last 50 years in India that affected about 3.3 million people in the state of Bihar, India. Over 330,000 housing units were damaged. The Bihar Kosi Floods (2008) Damage Needs Assessment, conducted in 2010, revealed that recovery from the massive floods and restoration of the damaged housing and infrastructure was still incomplete in the affected areas, while the need for greater resilience in the entire state was also critical to avoid further calamity in future.

The World Bank engaged with the GoI to support Bihar in meeting both short-term and long-term needs through a strategic phased approach of assistance. The first phase under this project was to focus on resolving the outstanding issues of the state for recovery from the 2008 Kosi flood and further strengthening the state's capacity for prevention of future floods, while the successive phase was to provide a comprehensive program of support for the state's longer-term needs on the overall disaster management, in particular, for flood risk management and sustainable interventions in the areas of agricultural productivity and improved connectivity (the Bihar Kosi Basin Development Project (P127725) was approved on December 8, 2015 and is under implementation). The ICR did not reference any specific government policies or strategy documents in relation to the above.



The project development objective remained in line with the World Bank Group's Country Partnership Framework for FY18–22 that continues to emphasize the needs of enhanced disaster risk management and resilience to climate change as one of the key objectives under the focus area of resource efficient growth.

During the implementation, the overarching objectives of flood recovery and future-oriented risk reduction remained valid, however, the reduced scope diminished the relative emphasis on the livelihood's restoration and enhancement.

Rating

Substantial

4. Achievement of Objectives (Efficacy)

OBJECTIVE 1

Objective

To support the flood recovery of the Government of Bihar.

Rationale

*A split rating is used as the original outcome targets were reduced in the 2014 restructuring. The objectives were not revised but the achievement against the original and revised targets is discussed separately under the objectives.

The project's theory of change was that (a) the reconstruction of damaged houses and infrastructure, and (b) the enhancement of livelihood through new employment opportunities would ensure the recovery of affected families, thus supporting the flood recovery (Emergency Project Paper (EPP), Annex 2).

(a) Reconstruction of damaged houses and road infrastructure

Outputs



- 56,758 houses were reconstructed against the original target of 100,000 of 72,000 houses (PRP, 2014).
- 44,946 toilets were constructed in the houses under the project. This represent 80% against the target of 100% (of 56,758 houses). Toilet construction was carried out with an awareness campaign by social workers at each block level in the three districts.
- 254.57 km of rural roads were reconstructed against the original target of 290.
- 69 bridges were reconstructed against the original target of 90.
- A training program was organized to increase awareness of disaster prevention; this included 28 group trainings with about 80 participants each and door-to-door visits every two months in the districts of Saharsa, Madhepura, and Supaul in 2017 (no target was defined).

Outcome

- 57% of the originally targeted housing was improved (target 100%).
- According to the regular monitoring and ex post survey by the Bihar Aapada Punarwas Evam Punarnirman Society (BAPEPS), a positive behavior toward sanitation and hygiene has been observed in the communities. For example, Basantpur block in Supaul district, one of the worst affected areas by the flood, was recently declared open defecation free.
- Approximately 1.3 million people, almost half of people affected by the 2008 floods, benefit from better access to resilient roads and bridges. The ICR reports (para 33) that it also helped 110,000 farmers start or restart farming in the affected areas because of better access to markets or reconnection to major roads. Connectivity to public services was also reestablished. At least 78 primary, secondary, or high schools are accessible from the constructed roads and bridges, along with 9 community halls, and 42 hospitals or primary health centers. No outcome target was set in terms of beneficiaries but the EPP mentioned that the initial works were estimated to benefit about 2.2 million people in the three worst-affected districts of Madhepura, Saharsa and Supaul (EPP, page 62).

(b) Enhancement of livelihood opportunities of the affected people

Outputs

Before dropping the related component, the following activities had been completed by March 2013:



- 10,750 self-help groups (SHGs) were formed against the target of 11,500 (PRP, 2013).
- 710 village organizations (VOs) were formed against the target of 750 (PRP, 2013).

Outcome

- 136,010 households (more than 10 percent of the affected people from the 2008 Kosi floods) benefited.
- As reported by the ICR (para 34), more than 75 percent of members of the SHGs were able to open a bank account and about 70 percent of members were enabled to access the Initial Capitalization Fund to look for funding for the purpose of productive activity such as agriculture and livestock, house construction and repair, and small businesses.
- According to an impact survey carried out by JEEVIKA in 2012–2013 with 6,242 households, members of the SHGs who participated in the Agricultural Enhancement Program and learned a system of rice intensification (SRI) and system of wheat intensification (91,300), enjoyed higher income from paddy by 44 percent and from wheat by 39 percent. The original target was an income increase by at least 30% of the baseline (EPP, Annex 2).

Rating

Modest

OBJECTIVE 1 REVISION 1

Revised Objective

To support the flood recovery of the Government of Bihar.

Revised Rationale

The project's theory of change was that (a) the reconstruction of damaged houses and infrastructure, and (b) the enhancement of livelihood through new employment opportunities would ensure the recovery of affected families, thus supporting the flood recovery (Emergency Project Paper (EPP), Annex 2).

(a) Reconstruction of damaged houses and road infrastructure

Outputs



- 56,758 houses were reconstructed against the revised target of 72,000 houses (PRP, 2014).
- 44,946 toilets were constructed in the houses under the project. This represent 80% against the target of 100% (of 56,758 houses). Toilet construction was carried out with an awareness campaign by social workers at each block level in the three districts.
- 254.57 km of rural roads were reconstructed against the revised target of 259.3 km.
- 69 bridges were reconstructed against the revised target of 70.
- A training program was organized to increase awareness of disaster prevention; this included 28 group trainings with about 80 participants each and door-to-door visits every two months in the districts of Saharsa, Madhepura, and Supaul in 2017 (no target was defined).

Outcome

- 79% of the revised targeted housing was improved (target 100%).
- According to the regular monitoring and ex post survey by the Bihar Aapada Punarwas Evam Punarnirman Society (BAPEPS), a positive behavior toward sanitation and hygiene has been observed in the communities. For example, Basantpur block in Supaul district, one of the worst affected areas by the flood, was recently declared open defecation free.
- Approximately 1.3 million people, almost half of people affected by the 2008 floods, benefit from better access to resilient roads and bridges. The ICR reports (para 33) that it also helped 110,000 farmers start or restart farming in the affected areas because of better access to markets or reconnection to major roads. Connectivity to public services was also reestablished. At least 78 primary, secondary, or high schools are accessible from the constructed roads and bridges, along with 9 community halls, and 42 hospitals or primary health centers. No outcome target was set in terms of beneficiaries but the EPP mentioned that the initial works were estimated to benefit about 2.2 million people in the three worst-affected districts of Madhepura, Saharsa and Supaul (EPP, page 62).

(b) Enhancement of livelihood opportunities of the affected people

Outputs

Before dropping the related component, the following activities had been completed by March 2013:

- 10,750 self-help groups (SHGs) were formed against the target of 11,500 (PRP, 2013).



- 710 village organizations (VOs) were formed against the target of 750 (PRP, 2013).

Outcome

- 136,010 households (more than 10 percent of the affected people from the 2008 Kosi floods) benefited.
- As reported by the ICR (para 34), more than 75 percent of members of the SHGs were able to open a bank account and about 70 percent of members were enabled to access the Initial Capitalization Fund to look for funding for the purpose of productive activity such as agriculture and livestock, house construction and repair, and small businesses.
- According to an impact survey carried out by JEEVIKA in 2012–2013 with 6,242 households, members of the SHGs who participated in the Agricultural Enhancement Program and learned a system of rice intensification (SRI) and system of wheat intensification (91,300), enjoyed higher income from paddy by 44 percent and from wheat by 39 percent.

Revised Rating Substantial

OBJECTIVE 2 **Objective**

To support future-oriented risk reduction efforts of the Government of Bihar.

Rationale

No outcome targets were revised under this objective.

The project was premised on the theory of change that the completion of technical studies and the establishment of center of excellence to better understand the flood and sediment management, as well as structural investments to strengthen existing embankments, would improve knowledge and capacity for future-oriented risk mitigation (EPP, Annex 2, Table 1).

(a) Strengthening of the flood management capacity in the Kosi basin



Outputs

- The Centre of Excellence for Water Resources, Flood, and Sediment Management Research and Development was established as planned to serve as a state nodal agency to monitor and assess flood-related events in the state.
- A series of technical studies and study tours were carried out as targeted to understand successful flood management and erosion control measures in river systems such as the Yellow River (China) and Mississippi River (United States of America). The studies were (a) Embankment Assessment Management System, (b) flood and sediment management, (c) river behavior analysis, (d) flood forecasting and early warning, (e) inundation modelling, and (f) community participation in environment surveillance.
- The Flood Management Improvement Support Center under the Water Resources Department (WRD) was equipped with the necessary tools (for example, Real Time Data Acquisition System, Digital Elevation Model [DEM] for inundation mapping) to set up a state-wide flood forecasting and early warning system to enhance the accuracy of (up to 72 hours) and increase the lead time of forecasts around the different rivers such as Bagmati Adhwara, Kosi, Gandak, and Mahananda in the state.
- 21.5 km of embankments was strengthened against the original target of 8 km and the revised target of 12km (the target was revised twice: it was 16 km in 2013). This includes 13.5 km of the Eastern Kosi Embankment by strengthening spurs and 8 km of Western Kosi Embankment by strengthening the road on the Western Kosi Embankment.

Outcome

- The ICR reports (para 39) that there was no major erosion or damage reported on the shoulders of the embankment over the past three monsoon seasons after the completion. Because of the strengthening and/or restructuring of 21 damaged spurs at the Eastern Kosi Embankment, the deeper channel shifted significantly away from the nose of the spurs, inviting large sedimentation in the loop portions. This also resulted in a large amount of siltation, creating new landmass on the riverside of the embankment. The ICR also adds that the restoration works at three dhars (small stream)—Bocha, Haiya, and Sanjay—where the damage caused by the severe floods was estimated at approximately US\$2.5 million, resulted in the recovery of 4,725 ha of crop area, approximately 8 percent of the entire Kosi CCA (estimated at 612,000 ha in the five districts).
- The master plan for flood and sediment management is being actively used for dredging work in the Kosi River, under the successive World Bank -financed project, to better manage the embankment and lower the sediment load to protect the local population and productive agricultural areas.

(b) Improvement of the emergency response capacity for future disasters



Component 5: Contingency Emergency Response Fund was not triggered during the project lifetime. The project helped equip the state with the necessary tools for better response to future disasters described above.

Rating
Substantial

Rationale

Under the original outcome targets: The overall efficacy rating is *modest*. The project achievements are modest with respect to the original targets. Only about 60% of the originally targeted housing was built.

Under the revised outcome targets: The overall efficacy rating is *substantial*, as the reduced targets were mostly achieved, albeit with some moderate shortcomings.

Overall Efficacy Rating

Substantial

5. Efficiency

Economic analysis

At appraisal, the planned investments in housing under Component 1 were found to be cost effective based on the comparison with housing reconstruction after the 2001 Gujarat earthquake that also used the owner-driven approach, which was proposed under the project. Under Component 2, the internal rate of return (IRR) of 22.9 percent and the modified economic rate of return (MIRR) of 15.1 percent were estimated based on a reinvestment rate of 12 percent for 36 roads for Bihar. The methodology was based on 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, average household income, and per capita trip rate. No economic analysis was conducted under Component 3 as the impact of capacity building activities on flood management was hard to quantify. Under Component 4-



Livelihoods Enhancement, 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 were to supported under the project, rates of return were expected to be similar (EPP, Annex 9).

At the time of restructuring in 2013, an analysis of the expected reduction in the costs of flooding was undertaken for the embankment strengthening activities using a well-proven methodology of damage assessment of historical flood events of certain intensity and size by frequency of occurrence (i.e. return period). Flood damages were modeled in a risk based fashion as a product of hazard and vulnerability. Cash flows of costs and benefits were projected over a 25-year period to estimate the Net Present Value (NPV) at a discount rate of 12 percent and the Economic Rate of Return (ERR) estimated at 20.8 percent (PRP, page 9).

At closure, the ICR did not follow the methodologies at appraisal, and only conducted a cost-benefit analysis for the overall project concluding that it was comparable with countries with advanced disaster risk mitigation measures. For every U.S. dollar invested in risk management and resilience capacity building, the overall return was estimated at US\$4.9 at 6 percent discount rate, with US\$3.6 in Component A, US\$3.2 in Component B, and US\$10.3 in Component C. The estimated BCR of US\$4.9 was found to be comparable with that for other countries. The BCR of investment in disaster risk mitigation ranges from 4 to 11 in the United Kingdom, 5 in the United States, and 1 to 3 in Australia. Given the increased frequency and severity of natural disasters projected in this region, the economic return of this project could be higher under the scenario of larger probability of natural disaster occurrence (ICR, page 16).

Operational/Administrative Efficiency

The project completion was delayed by almost four years, and the scope was significantly reduced. Not all the committed funds were utilized at project closure, for different reasons, including procurement and implementation delays that were attributed to the limited capacity and understaffing of the newly created PMU (BAPEPS) at early stages (ICR, para 53). In addition, inadequate fiduciary arrangements under the housing component led to the suspension of disbursements between 2012 and 2014 (ICR, para 69).

The project's efficiency is rated *modest*.

Efficiency Rating

Modest



a. If available, enter the Economic Rate of Return (ERR) and/or Financial Rate of Return (FRR) at appraisal and the re-estimated value at evaluation:

	Rate Available?	Point value (%)	*Coverage/Scope (%)
Appraisal		0	0 <input type="checkbox"/> Not Applicable
ICR Estimate		0	0 <input type="checkbox"/> Not Applicable

* Refers to percent of total project cost for which ERR/FRR was calculated.

6. Outcome

Under the original outcome targets: With substantial relevance, modest efficacy, and modest efficiency, the overall outcome is Moderately Unsatisfactory (3).

Under the revised outcome targets: With substantial relevance, substantial efficacy, modest efficiency, the overall outcome is Moderately Satisfactory (4).

Based on a share of the disbursements of 33% at the time of project restructuring in February 2014 (US\$41.1 million out of US\$126.3 million), the overall outcome rating is Moderately Satisfactory ($0.33 \times 3 + 0.67 \times 4 = 3.7$).

a. Outcome Rating

Moderately Satisfactory

7. Risk to Development Outcome

- **Operation and Maintenance (O&M).** Adequate provision is reported to be done for O&M. The O&M plans prepared include institutional, technical, and financial arrangements; budget lines are included at different governmental levels and funding has been arranged; and a part of the O&M responsibilities have been delegated to the IAs.
- **Institutional.** The GoB committed to continue to monitor the outputs and outstanding activities from the project with the use of ongoing Government program, i.e., the Indira Awas Yojna program and resources.



- **Continued engagement.** A phased approach with a follow-up project adopted the same institutional arrangements and other approaches that would help ensure continuity of the project outcomes.

8. Assessment of Bank Performance

a. Quality-at-Entry

The project support was requested only about 16 months after the disaster, as the GoB attempted to handle much of the early emergency response with grant funds available from the GoI and several multilateral and bilateral short-term relief support (ICR, para 49). Technical assistance funding was secured from the GFDRR after the formal request from the GoI in December 2009. The project was prepared through emergency procedures, which took four months from the scoping mission to Board approval. The World Bank formulated the project under a phased approach to ensure not only short-term recovery needs but also long-term development needs are met. As described by the ICR (page 24), the approach was collaborative, reflecting the immediate assistance and long-term needs for sustainable development in the affected areas.

There were a number of shortcomings in the project design, noted by the ICR (para 73), especially with respect to the results framework and institutional arrangements. The team underestimated the challenges and time involved in establishing a new counterpart agency and introducing unfamiliar multilayered approaches to financing housing. It did not prepare full risk mitigation measures for this institutional risk. The project management unit (PMU) took significant lead time to fill staff positions and become fully functional. In addition, emergency nature of the project implied that survey, design, documentation and tendering of activities started only after the project was approved (RP 2013, page 4). The low level of implementation readiness of the project was the main reason for the slow progress in the initial years of implementation.

Quality-at-Entry Rating
Moderately Satisfactory

b. Quality of supervision

The World Bank team conducted a total of nine regular supervision missions with frequent field visits and bilateral meetings and consultations with the PMU, IAs, and stakeholders in between the formal supervision missions. When the project faced serious delays in the initial three years, the team provided a series of trainings including development of MIS training modules and financial management trainings to the existing district- and block-level staff on internal financial reporting and controls under Component 1 in



2012. The team initiated the discussion with the PMU and IAs for the needs of restructuring well before the mid-term review was organized in 2013 and communicated it to the GoI and GoB. The team was responsive in modifying the project design during implementation. For example, more beneficiary households chose to build sturdier houses than originally anticipated (for example, brick and mortar structure with toilets).

There were, however, issues with regard to the safeguards implementation that was rated unsatisfactory in 2015-2016 (WB Operations Portal). The ICR does not explain or specifically refer to this, but it mentions (para 69) that the housing component was beset with issues relating to variances in amounts transferred to the beneficiaries, existence of multiple bank accounts, and lack of effective reconciliation procedures. Inadequate fiduciary arrangements under the housing component led to the suspension of disbursements between 2012 and 2014. The ICR reports that the team provided hands-on support for the ESMF implementation, including providing an additional guidance note for the IAs. The orientation workshop for the ESMF was also carried out for field staff in 2012 and 2014.

Quality of Supervision Rating

Moderately Satisfactory

Overall Bank Performance Rating

Moderately Satisfactory

9. M&E Design, Implementation, & Utilization

a. M&E Design

The original results framework for this emergency project included three outcome indicators that were defined in terms of the completion of planned outputs (EPP, Annex 2). In particular, (i) 100 percent of flood affected households having new houses in project area; (ii) 100 percent of communities having access to restored linkages via new roads and bridges; (iii) 100 percent of communities with increased access to finance through SHGs and improved employment opportunities in farm and non-farm sectors.

There were original 11 intermediate results indicators that were aligned with the project components, which helped monitor the progress at component level. As the ICR (para 54) notes, it also captured the needs of adjustment on the scope of activities and targets at the early stage. Baselines were defined as 0 and targets were set at appraisal.



b. M&E Implementation

The results framework was revised twice, including reducing the outcome targets in line with the reduced scope.

Physical progress monitoring was carried out by the IAs on a monthly basis and reported to the BAPEPS, which in turn shared the reports on a quarterly basis with the concerned line agencies and World Bank.

A benefit monitoring and evaluation (BME) study was carried out at the project component level that incorporated both qualitative and quantitative analysis by field interviews. The ICR (para 59), however, notes that the robust evaluation framework and methodology could have been assessed and better aligned with the results framework and outcome indicators.

As reported by the ICR (para 61), the PMU addressed the inadequacy of the evaluation mechanism by conducting a physical verification survey for the housing Component 1 to monitor the physical progress of housing, issuance of completion certificates to the beneficiaries, and the transfer of payment. The project's 'Monitoring' system functioned well, synchronized with the MIS, and supported the PMU and IAs effectively through the integration of contract management, disbursements, financial management, and tracking of implementation status.

c. M&E Utilization

Although the World Bank's implementation support missions, mission Aide Memoires, and quarterly progress reports by the PMU were effectively used to monitor the implementation progress and introduce mitigation measures, they did not include the Results Framework or discuss the overall progress toward achievement of the outcomes (ICR, para 83).

The digitization of information under Component 1 for each beneficiary helped the smooth operation, monitoring, and evaluation of the quality of houses as well as the satisfaction level of beneficiaries. The project's 'monitoring' system was also crucial in closely monitoring the implementation of safeguard instruments (ICR, para 61).

M&E Quality Rating

Substantial



10. Other Issues

a. Safeguards

The project was categorized an environmental Category B. The following safeguard policies were triggered under the project: OP 4.01 - Environmental Assessment; OP 4.11 - Physical Cultural Resources; OP 4.12 - Involuntary Resettlement; and OP 7.50 - Projects on International Waterways. The Kosi river is an international river, therefore OP 7.50 - Projects on International Waterways was triggered. The project qualified for an exception to the notification requirement under paragraph 7(a) and (b) of OP 7.50 (rehabilitation of an ongoing scheme) (EPP, para 27).

The project adopted a framework approach where an Environment and Social Management Framework (ESMF) was prepared by the BAPEPS and GoB, under Emergency Recovery Assistance Procedures. The ESMF envisaged to address the basic safeguard needs of multiple subprojects across the five flood-affected districts (Supaul, Madhepura, Saharsa, Araria, and Purnea). Third-party quality audit consultants hired by the BAPEPS regularly monitored and reported the safeguard issues with recommendations for remedy in coordination with the IAs.

With regard to the environmental safeguards compliance, the ICR (para 66) reports that detailed Environmental Management Plans were prepared and used effectively to address and mitigate negative impacts.

With regard to social safeguards, the project completed social development plans and, as reported by the ICR (para 67), "complied with all applicable social safeguard policies". The safeguards implementation was rated unsatisfactory in 2015-2016. The project team subsequently clarified that the lower rating on safeguard during the period in 2015 and 2016 was mainly due to the delayed follow-ups on the Bank's suggestions to improve overall performance on environment, and health and safety. The ICR states (para 69) that in the initial years, the housing component was beset with issues relating to variances in amounts transferred to the beneficiaries, existence of multiple bank accounts, and lack of effective reconciliation procedures.

Among all the components, it is under Components 2 and 3 that minor adverse social impacts were originally expected because of acquisition of small strips of land. Partial loss of land and loss of standing crops and trees and structures were possible impacts expected to arise out of implementing the subprojects. The project included an early evaluation of such impacts and integration of suitable mitigation measures into the subproject planning and implementation. The BAPEPS also organized a few exchange/demonstration events for the beneficiaries to learn good practices in housing and toilet construction.



The framework for grievance redress was introduced in 2012 and became fully operational in 2013 after a slight delay. The Grievance Redress Mechanism operated at local levels and facilitated communication with the project community and project-affected people to manage social risk and improve project outcomes.

Overall, as subsequently reported by the project team, during the ICR preparation, the team reviewed all the safeguard aspects and its compliance on each policy triggered under the project and confirmed that overall the project had been in compliance with each policy and had taken the necessary measures to address the issues risen at project sites appropriately during the implementation period.

b. Fiduciary Compliance

Financial management. The ICR (para 69) reports that the fiduciary compliance performance rating oscillated between Moderate Satisfactory and Unsatisfactory, mainly because of the persistent issues on institutional financial management arrangements, including delays in submitting interim unaudited financial reports, inadequate internal audit, lack of full-time financial management staffing at the PMU, and highly decentralized funds flow mechanism under the housing component with its inherent control issues. In the initial years, the housing component was beset with issues relating to variances in amounts transferred to the beneficiaries, existence of multiple bank accounts, and lack of effective reconciliation procedures. Inadequate fiduciary arrangements under this component led to suspension of disbursements between 2012 and 2014. The ICR (para 69) reports that the World Bank worked with the Bihar Aapada Punarwas Evam Punarnirman Society (BAPEPS) on a mitigation plan, to which the BAPEPS responded well to resolve the issues. The presence of a head of finance in the BAPEPS supported by financial management consultants, maintaining mirror accounts of the beneficiaries at the BAPEPS, and providing a team of accountants for handholding the block-level offices helped implement the mitigation plan.

Procurement. The procurement performance rating oscillated between Moderate Satisfactory and Unsatisfactory during the project period, although it improved during the last four years. Low procurement performance was critical during 2012–2014, because of the change of the institutional arrangement under Component 1; the lengthy evaluation process for civil works under Component 2; absence of TPQAs and full-time procurement staff at the PMU; and other administrative delays in the selection process, Procurement Plan, and on-time contract extension. The procurement capacity gradually improved with hands-on technical support from the World Bank and procurement training provided to relevant staff members at the PMU and IAs.

c. Unintended impacts (Positive or Negative)



d. Other

11. Ratings

Ratings	ICR	IEG	Reason for Disagreements/Comment
Outcome	Moderately Satisfactory	Moderately Satisfactory	
Bank Performance	Moderately Satisfactory	Moderately Satisfactory	
Quality of M&E	Substantial	Substantial	
Quality of ICR	---	Substantial	

12. Lessons

IEG selected three lessons from the ICR, with some adaptation of the language:

An owner-driven housing approach can succeed when accompanied by the robust implementation support and streamlined funding mechanisms. The project was successful in setting up a hierarchical implementation support system from the implementing agency at the central level to each district and block level to reach out to each beneficiary and monitor the progress of housing reconstruction. However, it also required huge manpower and continuous capacity building and trainings to maintain sufficient support from each staff at the district and block level, which also resulted in slow progress. Further, to have project-dedicated bank accounts of the beneficiaries from the start of the project and a strong monitoring framework was one of the important lessons from the housing component. Both these measures were implemented later during project implementation, along with better arrangements with banks for effective tracking of funds and appointing financial management support consultants since inception for low-capacity implementing agencies.

Community ownership and outreach can be an important contributor to the achievement of the project objectives and maximizing impacts. The project promoted a 'build back better' concept to the GoB and beneficiaries of the project. As a result, the targeted beneficiaries have chosen more-resilient, better houses among different types of design, a design choice that was widely circulated among the surrounding non-beneficiaries as well. Because of the owner-driven approach, the project also accommodated voluntary requests from beneficiaries during



implementation such as addition of toilet construction that resulted in high satisfaction of the beneficiaries.

Lack of a careful assessment of the institutional readiness for World Bank operations at preparation may lead to delays. Adequate risk assessment of the institutional arrangement was critical, even though the project was prepared under the Emergency Recovery Assistance Procedure. The project faced operational delays in the beginning mainly because of the new setup of the institution to manage the project with limited understanding of World Bank operations. In the process of implementation, strong ownership by the GoB and the adequate Government counterpart funding helped the project management unit and implementing agencies gradually build their capacity for the project operation.

13. Assessment Recommended?

No

14. Comments on Quality of ICR

The ICR is clearly-written and results-oriented. It provides clear description and arguments in support of the achievement of the project objectives. Annex 4-Efficiency Analysis offers good detail on the analysis and methodology applied. With respect to safeguards, while compliance is discussed, more detail is warranted as the safeguards implementation was rated unsatisfactory in 2015-16. Also, the ICR does not specifically discuss each safeguards policy. The team subsequently provided the necessary information. Lessons are based on evidence. A split rating methodology to assess the achievement of the objectives should have been applied as the outcome targets were reduced significantly.

There are some inconsistencies in reporting on the achievement of the results, i.e., (i) the revised targets are not in line with the targets indicated in the Project Restructuring Paper 2014. (ii) 44,946 toilets are indicated as a number of beneficiaries in para 32 of the ICR. The team subsequently clarified that 44,946 is the actual number of beneficiaries who had access to the funds as well as the actual number of toilets constructed. (iii) para 33 indicates that 267 km were repaired, 254.57 km in the Results Framework, and 259.3 km in Annex 1-B Key outputs by component.

a. Quality of ICR Rating Substantial

