Report Number : ICRR0021243

1. Project Data

Project ID P118179	**Project Name** NP: Rani Jamara Kulariya Irrigation Proj
Country Nepal	**Practice Area(Lead)** Water

L/C/TF Number(s) IDA-49810,IDA-H7160	**Closing Date (Original)** 30-Sep-2016	**Total Project Cost (USD)** 49,000,000.00
Bank Approval Date 05-Jul-2011	**Closing Date (Actual)** 30-Sep-2017	

	IBRD/IDA (USD)	Grants (USD)
Original Commitment	43,000,000.00	0.00
Revised Commitment	43,000,000.00	0.00
Actual	34,786,133.75	0.00

Prepared by	Reviewed by	ICR Review Coordinator	Group
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2. Project Objectives and Components

a. Objectives

The project development objective (PDO) as stated in the Financing Agreement (Schedule 1, page 4) dated September 18, 2011and the Project Appraisal Document ((para 19), was “to improve irrigation water delivery to, and management in, the Command Area". The Command Area is defined as the agricultural lands to be irrigated using infrastructure to be modernized under the project.

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

No

c. Will a split evaluation be undertaken?

No

d. Components

The project comprised three components.

Component 1: Scheme Modernization (appraisal cost US$38.6 million, actual cost US$35.4 million). This component financed the modernization of the Rani Jamara Kulariya Irrigation Scheme through the construction of a feeder canal, intakes, control structures, diversion structures, and canal and river bank flood protection works, and rehabilitation of roads within the Command Area and construction of bridges and culverts.

Component 2: Strengthening Water Users Associations (WUAs) (appraisal cost US$2.2 million, actual cost US$0.9 million). This component financed the capacity building of WUAs in the Command Area through provision of technical assistance, training, study tours, and equipment to assume responsibility for the management, operation, and maintenance of the irrigation systems that were modernized under the first component of the project. This component also financed the construction of WUA offices in a central location of each WUA Command Area and provision of office equipment.

Component 3: Agricultural Production Support (appraisal cost US$2.9 million, actual cost US$3.2 million). This component financed agriculture production support activities in the project area through demonstrations, farmer field schools (FFS), and other adaptive processes. In addition, this component financed the development of programs for: (a) improved production technologies and practices, (b) improved water management practices, and (c) the development of efficient and effective delivery mechanisms for key agricultural and horticultural support and extension services.

Component 4: Project Management (appraisal cost US$4.3million, actual cost US$2.6 million). The component supported the overall project management, monitoring and evaluation (M&E), and reporting. It provided the technical assistance, training, goods, equipment, and construction of an office building to strengthen the Project Implementation Office (PIO) and District Agricultural Development Office (DADO) to fulfill their management and implementation responsibilities under the Project, including, *inter alia*, monitoring physical and financial progress, preparing annual work plans and regular progress reports, and ensuring technically sound designs of engineering works and construction supervision.

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

Project Costs: The total project cost was US$42.1 million, lower than the appraisal estimate of US$49.0 million. The actual project cost excludes the cost of unfinished work of phase 1 of about US$1.31 million that was transferred to the phase 2 project.

Financing: The project was financed through both an IDA loan and a grant. The total actual financing was

US$34.3 million (US$20.4 million from the loan and US$14.4 million from the grant) compared to the appraisal financing of US$43 million (loan of US$23.6 million and a grant of US$19.4 million). The difference in appraisal commitment and actuals are because of the cancellation of the credit (US$0.6 million) and grant (US$3.8 million), as well as exchange rate variations between US dollar and XDR.

Borrower Contribution: The actual Borrower contribution was US$4.6 million, slightly lower than the appraisal estimate of US$5 million. There was in-kind contributions from the water users for the O&M of the irrigation schemes — the actual amount was US$2.8 million and the estimated amount was US$1.0 million.

Dates: The project was approved on July 5, 2011 and became effective on November 30, 2011. The original closing date was September 30, 2016. The project was extended by one year and closed on September 30, 2017. The extension was granted to complete the additional activities that were made possible due to project savings that resulted from the competitive procurement of civil works, consultancies, and goods—with some of the contracts awarded below the amounts estimated at appraisal.

3. Relevance of Objectives

Rationale

The project objectives were fully aligned with the second pillar of the World Bank's Interim Strategy Note of 2009 at the time of approval which focused on the productive sectors by laying the foundation for sustainable and inclusive economic growth, including agriculture and irrigation. The project would contribute towards both the Borrower's and the Bank's objectives of generating broad-based sustainable growth and poverty alleviation through increasing the productivity of irrigated agriculture.

The project objectives remained highly relevant to the current Country Partnership Strategy (CPS) for FY14-18 which aims to support poverty reduction and shared prosperity in Nepal. Specifically, the project was aligned with Pillar 2 of the CPS 'Increasing Inclusive Growth and Opportunities for Shared Prosperity'. It recognizes irrigation as a key sector for Nepal's continued efforts to reduce poverty and enhance shared prosperity in the face of increasing vulnerability to erratic monsoon floods and droughts.

The project objectives were fully aligned with the long-term strategy and vision of the country's irrigation development which is based on the Water Resources Strategy (2002) and the National Water Plan (2005), The Department of Irrigation (DoI) of the Ministry of Irrigation (MoI) remains focused on the rehabilitation of Farmer Managed Irrigation Schemes (FMISs). The Rani Jamara Kulariya Irrigation Scheme is one of the largest FMISs in Nepal.

Rating

High

4. Achievement of Objectives (Efficacy)

Objective 1

Objective

Improve irrigation water delivery in the Command Area.

Rationale

Outputs

The project financed the modernization of the three branch canal systems — Rani, Jamara and Kulariya by constructing control and regulating structures (focusing on intake structures, control and diversion structures, and canal bank protection); rehabilitation and modernization of the Rani, Jamara, and Kulariya branch canals (with 16.6 km, 15.8 km, and 14.5 km, respectively); command area protection works, and rehabilitation of the rural road system. The specific outputs were (paras 33 and 34):

- Construction of a feeder canal to link the three branch canal systems, including the construction of three offtakes, three road bridges and other structures in the feeder canal along with gravelling of the service road, and feeder canal lining of 7.3 km from the Kulariya offtake to the Jamara offtake.

- Command Area protection works against flooding from adjacent rivers, such as the Karnali, Mohana, and Patharaiya.

- Upgrading of village roads with gravelling (117 km) and construction of bridges and culverts.

Intermediate results were:

- A total of 15 structures, compared to the planned 7, were built in connection with the feeder canal (including road bridges, drops and siphons).

- The three intakes to branch canals were built as planned.

- Instead of 10 control structures in branch canals, 15 were built.

- A total of 121 bridges and culverts were built compared to the 26 initially planned. This was partly due to the gravelling of the service road, which increased the need for these bridges and culverts.

- The project constructed 33 offtakes to sub-branch canals compared to 41 planned. In the PAD, the baseline for this intermediate results indicator was zero—even though 5 offtakes to sub-branch canals already existed at appraisal. Therefore, only 36 offtakes had to be constructed to reach the planned 41

offtakes. Of these, 33 offtakes were completed (thus achieving 92 percent of the target) and 2 are still under construction.

Outcomes

The ICR reports (para 35) that owing to the permanent intakes and control structures, the intake of water from the Karnali River was now much better controlled for the three systems, benefiting agricultural production activities. Over the last two seasons, irrigation water was supplied through the newly constructed structures in the three branch canals. However, currently, a year-round supply of irrigation water was not available for the whole command area since the additional investments in the headworks on the Karnali River had not been completed (expected in mid-2018).

A survey assessing farmers' satisfaction with the irrigation water delivery through the WUAs was carried out in early 2017. About 52 percent of the interviewed farmers were satisfied, compared to the baseline of 8 percent, and slightly exceeded the target of 50 percent. The ICR reports (para 35) that the main cause of dissatisfaction was the continuing lack of a systematic water allocation system, particularly — a proportional water distribution to all sub-branches and head- and tail-enders. These investments are planned for phase 2.

Other impacts reported were:

According to a rapid impact assessment (carried out in January 2018), irrigators and local communities reported that the construction of the structures was good, timely, and beneficial as these structures protected the villages and cultivated lands against floods (ICR para 36). For example, during the big flood of 2013, 75 percent of the command area (or more than 11,000 ha) was inundated. While during a period of torrential rain in August 2017, the command area was not affected.

The rapid impact assessment also found that the farmers could get higher prices for their produce because of better access to markets. The upgrading of 117 km of village roads to gravel roads, and the related roads, bridges, and culverts works resulted in 50 percent saving in the transportation costs of goods. In addition, there was reduction in road accidents and casualties (such as injuries to children and the elderly) that happened in the monsoon season near the old wooden bridges (the ICR did not provide figures for the reduction in injuries and causalities). The respondents also reported a doubling of land values especially in villages near Tikapur.

Rating
Substantial

Objective 2

Objective
Improve irrigation water management in the Command Area.

Rationale

Outputs

- Training was provided to 87 percent of the envisioned 2,500 WUA members. The training was based on a training needs assessment for WUAs carried out in 2014.

- The project trained the Water Users Associations (WUAs) members in the following areas — implementation of adequate O&M plans, setting of irrigation service fees, maintenance of records and accounts, participatory monitoring, conflict resolution, improvement of higher-order system water management, and awareness raising on ethnic and gender issues;

- The project organized two study tours Thailand and Indonesia tours for the WUA committee members and selected water users to successful WUAs.

- The project financed the construction office buildings of the three branch canals WUAs and the central committee and provided office equipment, field facilities, motorcycles, and O&M equipment.

Intermediate Outcomes

- The three WUAs at the branch canals and the WUA federation are now registered under Government of Nepal's rules, and their constitutions was amended. In 2016, new WUA Executive Committees were formed for a five-year tenure.

- The targets for annual WUA Executive Committee meetings (one in each month plus an annual general assembly meeting) were fully achieved for each of the four WUAs, compared to baselines of zero.

- The target for women holding a third of the positions in WUA Executive Committees was achieved. Overall, 32.2% of the WUAs Executive Committee members were female (compared to the target of 33% and baseline of 19%).

- WUAs at the 48 sub-branches were also established, with a total 195 female members in the committees.

- The three WUAs at the branch canals have started registering all water users in their area and listing them as members. Members received cards, and close to 16,000 cards were issued — covering about two thirds of the water users.

Outcomes
The WUAs have increased the collection of irrigation service fees, the amount collected more than tripled to NPR 1.3 million during the project implementation. The WUAs have plans to double the irrigation service fee from NPR 150 to NPR 300 per hectare (ICR para 42).

The WUAs mobilized the labor for maintenance works (about 170,000 days per year). Maintenance at the head intake was carried out every year and required several days and thousands of people. Other types of canal repair and cleaning work at the branch and sub branch level was carried out by the concerned farmers as needed (ICR para 42).

Rating
Substantial

Rationale
The project substantially improved the irrigation water delivery and irrigation water management in the Command Area".

Overall Efficacy Rating
Substantial

5. Efficiency

Economic efficiency. A cost-benefit analysis was conducted both at appraisal and at completion.

At appraisal, the following benefits were assumed (PAD para 51): (a) a 10 percent increase in agricultural production at the head section of the Command Area with 6,000 ha, (b) an increase in cropping intensity from 157 percent to 191 percent (as a weighted average for the entire command area), (c) a 10 percent reduction in paddy yield losses caused by uncontrolled flooding, and (d) modest crop diversification in winter and spring crop seasons toward wheat, maize, and vegetables.

The benefits were measured with three farm models that represented typical situations of farms located in the head, middle, and tail-end sections of the Command Area. Sensitivity analyses tested robustness of the project for three risk variables: an increase in the project cost, a benefits decline, and a two-year delay in benefit accumulation. **The ex-ante ERR was 16.9 percent and FRR was 13.6 percent.** The opportunity cost of capital was assumed to be 12% and that both ex-ante and ex-post- ERR values were above that level (ICR, p.16). The project was moderately sensitive to changes in the benefit declines and in the project cost. The 20 percent decline in benefits decreased baseline levels of ERR and FRR to 13.6 and 10.1 percent, respectively. The 20 percent project cost increase reduced baseline levels of the ERR and FRR to 12.8 and

9.4 percent, respectively. The project was more sensitive to a two-year delay in benefit accumulation with the ERR and FRR dropping to 11.3 and 8.6 percent, respectively (PAD para53).

The ex-post ERR was 14.3 percent and FRR was 12.5 percent, lower than the appraisal values. The economic NPV was NPR (Nepalese Rupees) 451 million and financial NPV was NPR 146.4 million, both slightly higher than the appraisal values, largely due to the use of 2017 prices (ICR para 52). The average incremental net return was estimated at NPR 26,600 per hectare, higher than the appraisal estimate of NPR 22,000 per hectare.

Savings. The project engendered savings of US$3.4 million from competitive procurement of civil works, consultancies, and goods—with some contracts awarded below the amounts estimated at appraisal. These savings were used for additional works and activities.

Administrative efficiency. The project was adversely affected by both external and internal factors.

The external factors reported in the ICR (para 67) were: (a) the flood in 2013 that inundated a large part of the command area, and washed away part of the construction at the government funded abstraction works on the Karnali River; (b) earthquake in April 2015 caused significant disruption to the construction activities under Component 1. While the direct impacts on the command area were limited, many machine operators, drivers, engineers and other staff came from districts that were severely impacted, and had to leave to take care of their families; (c) frequent flooding during the monsoon season; and (d) An economic blockade in the Terai along India's border with Nepal, that began in September 2015 led to a shortage of fuel, cement, and other construction materials; and again, to significant disruption of the construction works.

The internal factors were: (a) slower-than-expected work of one of the ICB contractors under Component 1 due to another contract on the main conveyance canal funded by the government; (b) difficulties in the implementation of Component 3 during the first two years, as the implementation was carried out from Dhangadhi office. The implementation improved after the establishment of the separate office in Tikapur; however, a shortage of qualified DoA staff—especially in areas such as agronomy and plant protection—continued to affect implementation (ICR para 68); and (c) frequent staff changes at the PIO, including the project director, senior engineers and other key staff; and the rotation did have an adverse impact on project implementation (ICR para 69). The project team informed IEG that staff rotation every two years, was a part of the Ministry's policy.

Despite these challenges, the project was extended by only year.

Overall, efficiency is rated substantial.

Efficiency Rating
Substantial

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	✓	16.90	0 ☑Not Applicable
ICR Estimate	✓	14.30	0 ☐Not Applicable

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

6. Outcome

The relevance of project objectives is assessed as high. The project substantially improved the irrigation water delivery and irrigation water management in the Command Area". Project efficiency is rated substantial. Overall, outcome of the project is "satisfactory".

a. Outcome Rating

Satisfactory

7. Risk to Development Outcome

Water Users Association capacity (WUAs) to carry out operations and maintenance: The main risk to the development outcome is the capacity of the Water Users Association (WUAs) to carry out operations and maintenance of the modernized infrastructure constructed under the project. Although, the capacity of WUAs was strengthened under the project, much of the training activities took place only towards the end of the project implementation period. The WUA Executive Committees at the sub-branch levels were recently formed under the provision of the amended WUA constitutions and are not yet carrying out their roles and responsibilities (ICR para 92). Moreover, there are a number of outstanding issues that need to be addressed. These include: the mobilization of all farmers for canal maintenance, an increased ability of the WUAs to carry out all their responsibilities, more awareness among farmers on the WUA functioning, and increased transparency and more effective communication by WUAs.

Financial Risk: Although, WUAs are collecting irrigation service fees, these fees are not sufficient to meet the requirements in the three irrigation systems.

8. Assessment of Bank Performance

a. Quality-at-Entry

The Bank's support for the "Modernization of the Rani Jamara Kulariya Irrigation Scheme" included two phases: Phase 1 (this project) focused on the modernization of the higher-order irrigation infrastructure (especially intakes and feeder and branch canals), enhancing the capacity of the WUAs to operate and maintain the improved or new irrigation infrastructure, and the preparation and initiation of an agricultural development program. Phase 2 would focus on the modernization of the lower-order irrigation infrastructure (sub-branch and tertiary canals and water courses), continuation of the WUA support program, and implementation of a comprehensive agricultural improvement program. The main trigger for starting with the preparation of phase 2 was the construction works on the main branch canals and intake protection works.

The project design incorporated lessons from Bank-supported and other donor supported projects in Nepal and from stakeholder workshops and beneficiary impact analysis carried out during project preparation (PAD para 31). These included: (a) a phased approach is often better to allow institutional and agricultural components to be implemented well; (b) transparency and accountability in performance management and service delivery in irrigation systems; (c) meaningful community participation requires substantial capacity building; (d) coordination between partner organizations is important to maximize project benefits; and (e) integrating agriculture extension serves with improvement in irrigation increases overall irrigation benefits (PAD paras 32 to 35).

The design of the structures for protecting the Command Area was partly influenced by the lesson from the Rajapur Irrigation System, another large Farmer Managed Irrigation System (FMIS) located near the Rani Jamara Kulariya Irrigation System. The inclusion of these activities would save farmer's land and villages from annual flooding and constant erosion from floodwaters of various neighboring rivers (ICR para 87).

The risk assessment at appraisal was "moderate" and satisfactory mitigation measures were included in the PAD (Annex 4). To ensure that the design of the infrastructure was conducive to the capacity of WUAs to properly operate and maintain them, the design was based on modern design standards yet compatible with local conditions and sustainable with acceptable levels of O&M requirements (ICR para 64). M&E arrangement were satisfactory. Safeguards assessment was adequate The Social Impact Management Framework (SIMF) and Environmental Management Plan (EMP) ensured that strong safeguard tools were built into the project design. The project established a full-fledged project office in Tikapur, the main township and market center in the project area to manage and coordinate the project activities from the field (PAD para 9 an ICR para 88).

Quality-at-Entry Rating

Satisfactory

b. Quality of supervision

The ICR reports (para 89) that the World Bank task team had sufficient staff and knowledge resources to provide adequate implementation support to the government of Nepal (para 89). There was no turnover in team leadership or in members of the key team for a major part of the implementation period. A change in

team leadership only took place in April 2017, after six years under the same leadership. Aide-Memoires were regularly prepared, except during the earthquake and the period of political unrest. The Implementation Status and Results Reports (ISRs) were candid in rating the achievement of development objectives and the project implementation progress. Constant project monitoring helped address the main procurement issues, and the ICB-1 works were to a large extent completed on time.

However, supervision could have been more attentive towards the proper staffing of the Project Implementation Office (PIO). For example, the ICR (para 69) reports that the position of sociologist at the Project Implementation Office (PIO) was kept vacant for a substantial period, which affected the interactions with WUAs and the implementation of training program under Component 2. The PIO staff included an environmental expert only at the beginning of project implementation; later this position was not filled any more. The lack of dedicated M&E staff affected the amount and quality of project monitoring data.

Quality of Supervision Rating
Satisfactory

Overall Bank Performance Rating
Satisfactory

9. M&E Design, Implementation, & Utilization

a. M&E Design
The project included outcome indicators such as: irrigation delivery by service providers (WUAs) assessed as satisfactory by water users (measured in percentage of water users); and resources generated by water users for the operation and maintenance of the modernized irrigation systems (measured in percentage of required resources). These indicators were adequate to measure the achievement of the project development objectives. Other indicators included — increase in irrigated crop yields of main crops rice, wheat, and maize (in about 40 percent of the command area at the head of the canal systems; measured in tons/ha); and number of female and male water users (defined as member of the WUA).

According to the PAD (para 45), the Project Implementation Office would be staffed with a monitoring specialist, and would have the overall responsibility for planning and coordinating M&E activities.

M&E activities would include: baseline studies; regular performance tracking of inputs and outputs by concerned implementing departments; intermittent performance monitoring by external M&E agency; systematic (“panel data” type) analysis of project impacts through repeated monitoring of the same sample set of water users (farmers) through project lifetime; and mid-term and final impact evaluations (PAD para 46).

b. M&E Implementation
The ICR reports (para 73) that the M&E activities were not implemented as designed and the Project

Implementation Manual was inadequate in describing the requirements for an effective M&E system. There were delays in the recruitment of M&E specialist. The lack of dedicated M&E staff affected the amount and quality of project monitoring data (ICR para 69).

However, the Project Implementation Office conducted several surveys and studies (ICR para 74):
(a) In 2013, a survey based on a representative sample of households in the command area to establish a pre-intervention baseline for Component 3 was conducted. Follow-up surveys related to the agricultural support activities in the following years were also conducted;
(b) In 2014, WUAs training needs assessment was done;
(c) In 2015, a study on the status of project affected people was carried out;
(d) In 2017, a survey assessing farmers' satisfaction with the irrigation water delivery through the WUAs for was done; and
(e) In early 2018, a rapid impact assessment for the overall project was done.

In 2016, the World Bank's Development Impact Evaluation (DIME) conducted an impact evaluation of the modernization of irrigation systems and agricultural extension services. The ICR reports (para 73) that the DIME impact evaluation provided data on outcomes and was useful for the preparation of phase 2, it could not serve as project M&E.

c. M&E Utilization

The ICR reports (para 75) that the M&E activities were used to track the changes in outcome and intermediate results indicators and collect data in specialized studies.

M&E Quality Rating

Substantial

10. Other Issues

a. Safeguards

Safeguards Identified at Appraisal

The project was assigned **Environmental Category "B"** and the following safeguards were triggered: Environmental Assessment (OP/BP 4.01), Natural Habitats (OP/BP 4.04), Indigenous Peoples (OP/BP 4.10), Involuntary Resettlement (OP/BP 4.12), Forests (OP/BP 4.36); Projects on International Waterways (OP/BP 7.50). The PAD (para 64) noted that since the project activities were mainly focusing on the improvement of the existing traditional irrigation systems, the Initial Environmental Examination (IEE) and the Environmental Management Plan (EMP) identified moderate environmental risks that could be mitigated through mitigation measures.

Environmental Assessment (OP/BP 4.01): The EMP included the following adverse environmental

impacts: (i) restriction to the wildlife movement during construction (mainly elephant, tiger, and rhino during the main transit season from July through November); (ii) increased poaching and logging risks in the forest areas close to the project area; (iii) adverse impacts on the protected and endangered aquatic life (e.g. dolphin) such as from water diversion and fishing; (iv) increased risks of flood damage resulting from extraction of sand and gravel from the river; and (v) depositions of silt/sediment in the canal system and on farm land. Other identified impacts included were air and noise around active construction sites and labor camps, sanitation and fuel pollution, and impact on patches of forests through possible loss of trees, forest degradation, and encroachment (PAD para 65).

The EMP recommended mitigation measures which included: no major construction activities during the main wildlife movement season from July to November; wildlife friendly canal side-slopes; provision of animal crossings over the feeder canal; banning the project from collecting sand, gravel, and boulders within 500 m of Karnali bridge and within 50 m of the right bank of the Karnali River and ensuring that the extractions would be less than one meter deep; awareness against poaching and logging; canal intake and outlet/tail designs would include features that avoided dolphin entry; provision of sanitation and fuel facilities at workers camp; and prohibition of workers from fishing and hunting.

The **Natural Habitats (OP/BP 4.04)** was triggered because the Karnali River had protected and endangered aquatic species, including the Gangetic Dolphin, Marsh Mugger, and Gharial Crocodile. In addition, the Karnali River corridor (forests) was a wildlife movement route especially for elephant, tiger, and rhino. The mitigation measures were included in the EMP.

Forests (OP/BP 4.36): Since some of the works were expected along the fringes of the forest areas, the OP/BP 4.36 on Forests was triggered and mitigation measures were included in the EMP (PAD para 68).

A **Social Assessment** was conducted at appraisal and the assessment recommended that since there were ethnic and minority communities (Tharu, Bahun/Chettri, Hill Janajatis (including Magars), and Dalits), the project specific interventions should benefit these communities and OP/BP 4.10 on Indigenous People was triggered. Also, the project might require some land acquisition and **OP/BP 4.12 on Involuntary Resettlement** was also triggered. A Social Impact Management Framework (SIMF) was prepared to develop the necessary mitigation measures to address possible adverse social impacts. The SIMF also contained a Land Acquisition and Resettlement Framework, a Vulnerable Community Development Framework, a Gender Equality and Social Inclusion Strategy, and an Information, Communication, and Participation Strategy.

Projects on International Waterways (OP/BP 7.50): The project scheme would abstract water from the Karnali River, a major left-bank tributary of the Ganges River. With its source in China, the Karnali River flows through Western Nepal into India. It was thus identified as an international waterway for purposes of OP 7.50. However, before this project, diversion of Karnali River water into the three branches of the canals was uncontrolled and the scheme had very low water use efficiency due to large water losses through seepage and water logging. The project would result in a 40 percent reduction of water abstraction from the Karnali River. Therefore, the exception to the notification requirement under OP 7.50 was received from South Asia's Regional Vice President in February 2011 (PAD para 69).

Safeguards Implementation

Environmental Safeguards: The ICR reports (para 79) that during the early stage of project implementation, delays occurred in implementing some of the mitigation measures. However, this improved over time as the Project Implementation Office (PIO) formed the Local Environmental Monitoring Committee; organized orientations to the contractor and awareness training to local stakeholders; and engaged with Community Forest User Groups, the District Forest Office, the National Park Authority, and local NGOs. The ICR reports (para 69) the PIO staff included an environmental expert only at the beginning of project implementation, however, later on this position was never filled — leading to inadequacy in regular on-site supervision, support, and coordination. The ICR rates environmental performance as 'Moderately Satisfactory' (ICR para 80).

Social safeguards:
The ICR reports (para 82), that there was no acquisition of private land but a few private structures were affected. The compensation covered cost of the structures and housing, business disruption allowances, and additional support to vulnerable groups among the households affected by the project. However, training activities planned under the Resettlement Action Plan were not implemented due to the delay in implementing the plans. Moreover, there was frequent turnover and absence of a staff/specialist at the projects Social Environmental and Institutional Unit. This significantly affected timely support, implementation, and monitoring of the planned mitigation activities.

The ICR did not include a "compliance statement" on whether the project complied with the safeguards policies.

b. Fiduciary Compliance

Financial Management: The ICR reports (para 85) that the project complied with the Bank's fiduciary covenants. The timeliness and quality of the financial monitoring reports and the interim unaudited financial reports were satisfactory. There were some delays in the submission of audit reports, but auditors provided unqualified opinions on the audit reports. The internal control arrangements were found adequate.

Procurement: The ICR reports (para 83) that procurement management was satisfactory with the timely completion of most procurement activities. However, there were some challenges: (i) the work of the ICB-1 contractor was affected by the frequent transfer and turnover of key engineering staff; (ii) significant design changes after contract agreement; (iii) need for additional funding for projects "operating costs" as initial allocation was used up early on due to inadequate planning of supervision arrangements for the construction works.

c. Unintended impacts (Positive or Negative)

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d. Other

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11. Ratings

Ratings	ICR	IEG	Reason for Disagreements/Comment
Outcome	Moderately Satisfactory	Satisfactory	The ICR's rating for outcome is incorrect - it rated the relevance of objectives as high, efficacy as substantial and efficiency as also substantial. Based on this assessment, overall outcome should be rated satisfactory and not "moderately satisfactory" as reported in the ICR. IEG also rated the relevance of project objectives as high, efficacy as substantial and the project efficiency as substantial. Based on this, overall outcome is satisfactory.
Bank Performance	Satisfactory	Satisfactory	---
Quality of M&E	Modest	Substantial	While there were problems with the design and operationalizing of the approach, the M&E did provide useful information on the progress of the project and the various analytical pieces filled many of the gaps, thus justifying a substantial rating overall.
Quality of ICR		Substantial	---

12. Lessons

The ICR (paras 94 to 99) presented several useful lessons and recommendations. The main lessons are presented below with some adaptation of the language:

- **Proper phasing of activities**. When infrastructure works are combined with institutional strengthening and agricultural support, the proper phasing of activities becomes important. This tends to require coordination across different ministries and departments, and the timely involvement of relevant expertise in the project office and in the field.

- **Focus on gender**. Although the project drew attention to the role of women as water users and Water Users Association (WUAs) members, yet the women faced a number of constraints that need to be further addressed. For example, the baseline survey of 2013 indicated that women are much less likely than men to own land. Yet land ownership is a precondition for formal WUA membership, including the right to vote on key decisions such as water management, O&M, and labor contributions. Currently even the wives of landowning men who left for work in a city cannot participate in WUA decision making. Furthermore, under the current WUA rules, households need to provide equal amounts of labor contribution for canal maintenance—independent of the size of their land holdings. This is likely to create an extra burden for women owning land. More attention needs to be given to such gender-related issues in phase 2.

- **Addressing climate risks**. Climate projections for the region suggest that rainfall is likely to intensify in flood-prone areas, while water-scarce regions become even more drought-prone. The phase 1 investments, especially the higher-order infrastructure works for improved water delivery in the command area (such as improved control of water intake and the more adequate drainage capacity in connection with the command area protection works), are likely to have helped address some of these climate risks. The activities under phase 2 need to focus on further addressing these climate risks, particularly with the lower-order infrastructure investments and the additional command area protection works.

13. Assessment Recommended?

No

14. Comments on Quality of ICR

The ICR is thorough, evidence based, and internally consistent following OPCS guidelines. There are a few minor shortcomings:

- The ICR's rating for outcome is incorrect - it rated the relevance of objectives as high, efficacy as substantial and efficiency as also substantial. Based on this assessment, overall outcome should be rated satisfactory and not "moderately satisfactory" as reported in the ICR.
- The ICR reports that the project was adversely affected by a number of external as well as internal delays, but was only extended by one-year. The ICR could have provided more clarity on what factors caused the one-year delay.
- The ICR does not discuss why the key positions, namely the position of the sociologist and an

environmental expert were not filled by the Project Implementation Office. Also, the project triggered six safeguards policies, but the ICR did not include a “compliance statement” on whether the project complied with these safeguards policies.

a. Quality of ICR Rating
Substantial