1. Project Data

<table>
<thead>
<tr>
<th>Project ID</th>
<th>Project Name</th>
<th>Country</th>
<th>Practice Area (Lead)</th>
</tr>
</thead>
<tbody>
<tr>
<td>P110099</td>
<td>Water Sector Capacity Building Proj</td>
<td>Pakistan</td>
<td>Water</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>L/C/TF Number(s)</th>
<th>Closing Date (Original)</th>
<th>Total Project Cost (USD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>IDA-44370, IDA-57600</td>
<td>28-Feb-2014</td>
<td>42,058,800.55</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Bank Approval Date</th>
<th>Closing Date (Actual)</th>
<th>IBRD/IDA (USD)</th>
<th>Grants (USD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>26-Jun-2008</td>
<td>30-Jun-2021</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Actual</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>42,058,800.55</td>
<td>0.00</td>
</tr>
</tbody>
</table>

Prepared by: Wendy Schreiber Ayres  
Reviewed by: Peter Nigel Freeman  
ICR Review Coordinator: Ramachandra Jammi  
Group: IEGSD (Unit 4)

2. Project Objectives and Components

a. Objectives  
The Project Development Objective (PDO) as stated in the Financing Agreement dated July 14, 2008 (page 4) was to improve the Recipient's management and investment planning of the water resources in the Indus River system.

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
30-Sep-2015

c. Will a split evaluation be undertaken?
No

d. Components

Component A. Capacity building of and support to the federal institutions in water resources planning and management (cost at appraisal US$17.0 million, actual cost US$7.04). This component focused on reinforcing the mandates of the federal institutions and addressing the impediments to better performance. It supported capacity building of and support to federal institutions involved in water resources planning, management, and development. The component included, among other activities, support for building human resources and institutional capacity in federal institutions, and support for developing studies, strategies, and plans for improving water resources planning and management. It contained four subcomponents. The first focused on building capacity of the Ministry of Water and Power (MoWP) in regulation, policy, and planning. The second focused on building capacity of the Indus River System Authority (IRSA) in system planning, management, and operations. The third supported developing financing strategies for water and hydropower, including through public-private partnerships. The fourth focused on supporting the Planning Commission and financing feasibility studies for small dams and water storage facilities.

Revised component A. Under the first restructuring, several activities were dropped, including (a) a strategy for enhancing productivity of water use and irrigation efficiency; (b) an assessment of beneficiary participation and benefit sharing among stakeholders of projects; (c) action plans for asset development, ownership, and operations; (d) capacity building and development of enabling framework; (e) studies for financing hydropower projects through private-public partnerships; and (f) advisory services for hydropower projects. Through the Additional Financing (AF), activities totaling US$10.57 million were added to component A. These included financing for upgrading of (a) the Nandipur Irrigation Research Station; and (b) of the Hyderabad and Karachi Soil Mechanics Hydraulics Research Laboratories; and establishing (c) a laboratory for survey, drawing and soil testing at the Irrigation Unit/Division in Balochistan. It also provided funds to scale-up efforts to increase transparency in the inter-provincial water allocation system contribute to water conveyance efficiency in the Indus Basin Irrigation System. Finally, it provided support for the establishment of an international center for national and international coordination and cooperation. Under the restructuring of March 2020, all of the activities added during the AF were dropped due to cancellation of US$25 million to reallocate funds for the government’s response to Covid-19.

Component B. Improvement in water resources management and development (cost at appraisal US$17.0 million, actual cost US$25.82). This component focused on providing strategic support to the Water and Power Development Authority (WAPDA). This included among others support for (a) upgrading of existing tools, databases, models and management systems; (b) sediment management studies for the Indus system; (c) preparation of a power investment plan; and (d) preparation of feasibility studies and design for easily implementable hydropower projects.
Revised component B. Under the first restructuring, funds released from component A were added to component B for the detailed design of hydropower projects, which was underfunded. Any residual funds would support new activities to assist the Federal Floods Commission (FFC). Through the AF, activities totaling US$17.15 million were added to component B. These included: (a) enhancements for hydropower generation and development planning and flood resilience; (b) upgrading of the Concrete, Cement, Steel and Soil Dynamics Lab of the Central Material Testing Laboratory at WAPDA; and (c) preparation of feasibility studies for one of the five priority hydropower projects under the Indus Cascade Hydropower Development Plan. Under the restructuring of March 2020, most of the activities added during the AF were dropped due to cancellation of US$25 million to reallocate funds for the government’s response to Covid-19.

Component C. Project management and additional studies (cost at appraisal US$4.0 million, actual cost US$9.20). This component focused on supporting the government, particularly the MoWP, with financing for project management, including coordination of all project related activities, monitoring and evaluation of project impacts and technical and financial audits. It also provided support for enhancing capacity of staff of the federal institutions, particularly at IRSA.

Revised component C. Through the AF, activities totaling US$7.23 million were added to component C. These included: (a) additional support for project management; (b) additional strategic studies, including those identified in the National Flood Protection Plan IV; and (c) additional capacity building and training programs for government officials. Under the restructuring of March 2020, procurement of vehicles, office equipment, and planned strategic studies were dropped. Given Covid, restrictions the remaining planned professional training was dropped.

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

Project Cost: The original estimated project cost was US$38 million. Following the AF, the project cost rose to US$72.95 million. The actual cost at closing date, June 30, 2022 was US$41.84 million after US$25 million had been cancelled.

Financing: The project’s cost was financed through two IDA Credits totaling US$42.06 million, of which US$41.84 million was disbursed.

Borrower Contribution: The Borrower did not contribute to the project’s cost.

Restructuring:

First Restructuring. The project was restructured on March 15, 2012 to drop some activities that were being undertaken by other government agencies, and reallocate funds to new priorities that emerged following the 2010 floods. These measures were expected to improve project management and progress towards achieving the PDO.
Second Restructuring. The project was restructured on January 13, 2014 to extend the closing date by 12 months to February 28, 2015, to allow completion of ongoing activities, including the National Flood Management Plan and to allow the Government to prepare its request for the AF.

Third Restructuring. The project was restructured on February 12, 2015 to extend the closing date by eight months to October 30, 2015 to allow time to process the AF for the project (the request was received on December 19, 2014) and to allow time for (a) completion of the Improvement of Water Resources Management study (which required hydrologic measurements in one low-flow and one high-flow season) and (b) finalization of the National Flood Management Plan.

Fourth Restructuring. The project was restructured on September 30, 2015 to extend the closing date by three months to January 31, 2016, to allow time to complete the (a) establishment of a data center at the FFC as part of the 'Development of National Flood Protection Plan-IV' (NFPP-IV); and (b) processing of the AF.

Fifth Restructuring. The project restructuring was approved on November 30, 2015 to provide AF of US$34.95 to scale up existing activities and to enhance capacity to address basin level management of the Indus water resources. Other changes included (a) extending the closing date by five years and five months to June 30, 2021 to allow time to complete the activities planned for the AF, (b) updating the results framework to reflect the scale up; (c) revising the disbursement estimates reflecting the additional credit and extended implementation period; and (d) revising the components and costs.

Sixth Restructuring. The project was restructured on March 17, 2020 to cancel US$25 million in response to a government request following the onset of the Covid-19 pandemic. Other changes included (a) revising the results framework to reflect the reduced scope of the project, (b) revising the components and costs, (c) reallocating funds between disbursement categories, and (d) revising the disbursement estimates.

Dates: The project was approved on June 26, 2008 and became effective on September 22, 2008. The project closed on June 30, 2021, seven years and five months after the original closing date of February 28, 2014.

Split Rating. As the project scope became more ambitious, a split rating is not applied.

3. Relevance of Objectives

Rationale

Country and Sector Context at Appraisal

The key challenge for Pakistan was to sustain its recent growth to significantly reduce poverty, requiring continued sound macroeconomic management and further improvements in the investment climate. In particular, Pakistan’s infrastructure needed significant investment to support its growth and service delivery goals. Approximately 40 percent of the population lacked access to power. The infrastructure challenge was particularly acute with respect to water, as Pakistan relied on the largest contiguous irrigation system in the world to provide basic food security (90 percent of food production and 25 percent of gross domestic product). However, the country’s infrastructure was deteriorating and in need of rehabilitation. Reforms
were also needed to improve the allocation of water and the efficiency of its use. Pakistan had begun increasing its investments in irrigation infrastructure. Yet, there remained a need for significant new investment in not only irrigation, but also in other uses of water, including hydropower generation and urban-industrial and domestic supplies (only 50 percent of the population was served by a formal water supply system and only 10 percent was served with sanitation services). At the same time, there was uncontrolled pollution of surface and groundwater from agriculture, industry, and rapidly growing cities.

Alignment with Country Priorities

The PDO was well-aligned with Pakistan’s socio-economic development and water supply and sanitation sector priorities. Specifically, the project contributed to two of the government’s objectives, as laid out in federal and provincial plans. The first was to achieve an efficient, sustainable, affordable, and consumer-oriented electric power system that meets the needs of its people and economy. The second was to achieve sustained growth in agriculture, with enhanced productivity of farms and generating linkages for rural non-farm economy (Country Partnership Strategy for fiscal 2015–2019, Annex 1(b) page 1 and 3).

Alignment with Bank Strategy

The project’s objectives are assessed as fully aligned with the World Bank’s strategy as laid out in its Country Partnership Strategy (CPS) for fiscal 2015–2019, which specifies energy security as a top priority for growth. The project sought to address the development problem of lack of access to energy supplies by supporting policy and institutional reforms needed to produce more and lower-cost power generation in Pakistan. The project also aimed to strengthen multiple sector institutions for management and investment planning of water resources through provision of technical assistance and advice. The project objectives correspond to Outcome 1.1: reduced load shedding, Outcome 1.2: reduced cost of electricity production, Objective 1.3: improved financial sustainability of the electric power sector, all under Results Area 1: Energy. The project objectives also correspond to Outcome 2.2: increased productivity in farms in selected irrigation schemes under Results Area 2: Private Sector Development (CPS, pp. 14–18).

The Bank’s 2020 Systematic Country Diagnostic (SCD) for Pakistan also highlighted “improve energy sector performance” and “improve management of water resources as the reform priorities for the country.” These priorities are reflected in the draft Country Partnership Framework (CPF) fiscal 2022–26 under the ‘Green and Clean Pakistan’ Program of the government. The project thus continues to remain fully aligned with the current SCD and the draft CPF.

Previous World Bank Experience

The World Bank has a long history of partnership and collaboration in the water sector in Pakistan. As a key partner and principal donor, it provided support to several main interventions in the development of the Indus Basin Irrigation System (IBIS), including: (a) facilitating the Indus Water Treaty negotiations between Pakistan and India in the 1950s; (b) establishing of the Indus Basin Development Fund that supported the construction of Mangla and Tarbela Dams and several inter-river link canals and barrages that enabled the implementation of the Indus Treaty; (c) formulating the Salinity Control and Reclamation Program in 1968; (d) formulation of the Revised Action Plan for Irrigated Agriculture in 1979; (e) assisting in the Water Sector Investment Planning Study in 1991 that led to the Inter Provincial Water Apportionment Accord of 1991 and the establishment of the Indus River System Authority (IRSA); (f) developing, perhaps most importantly, the Irrigation and Drainage Strategy of 1994 (Pakistan: Irrigation and Drainage – Issues and Options, Report 11884-PAK) that led to a major shift in the direction of the irrigation and drainage sector of Pakistan and
implementation of current institutional reform agenda; and (g) the formulation of the Pakistan Water CAS (Pakistan’s Water Economy Running Dry, 2005, Report 34081-PK) that highlighted the recent issues that the water sector was facing and outlined an approach to address them. The two largest provinces, Punjab and Sindh, which manage more than 85 percent of the IBIS, embarked on far reaching irrigation reforms and made significant progress on the reform agenda. Altogether, the Bank had supported more than 48 operations in irrigation, drainage, and water resources development and the power sector prior to the approval of the Water Sector Capacity Building and Advisory Services Project (WCAP).

However, while the objective remained relevant throughout the project cycle and was a necessary response to a development gap in Pakistan, a significant shortcoming was the lack of clarity in the project formulation around what outcomes would be achieved through improving management and planning of water resources. The causal chain between funding and outcomes was clear, albeit with most targets at output level, as the objective was closer to the output level, rather than the outcome level.

Rating
Substantial

4. Achievement of Objectives (Efficacy)

OBJECTIVE 1
Objective
Objective 1: “To improve the management of water resources in the Indus River system.”

Rationale
Theory of Change

The project’s theory of change indicated that the project’s inputs—IDA’s financial and technical assistance support—would directly lead to the achievement of project outputs, which in turn would lead to the project’s outcomes. The activities consisted of (a) capacity building of staff of water sector institutions; (b) preparation of feasibility studies for small dams and water storage facilities. The key outputs were (a) officials of MoWP, IRSA, and WAPDA trained on water policy, planning, and management; and (b) strategic sectoral environmental and social assessment of the Indus Basin prepared; and (c) upgrading of telemetry stations to improve measurement of water flow. In turn, these outputs would be expected to result in the outcome of improved management of water resources. Overall, the causal pathways from inputs to outcomes were valid and direct, and the outcomes achieved could be mostly attributed to the project’s interventions. The activities, if completed, would be sufficient to provide a critical mass for the expected change.

The key assumptions for achieving this objective were: (a) capacity building of and support to federal institutions in water resources management; (b) capacity building in regulation, policy, and planning of the MoWP; (c) capacity building of IRSA in system planning, management, and operation; (d) and capacity building of the Infrastructure Project Development Facility (IPDF) and WAPDA in developing strategies for the
water and hydropower sector would take place during the project period and would contribute to improvements of water resources management.

The assumptions would have been reasonable if the effectiveness of this capacity building had been properly defined and could be monitored. However, the results framework was comprised of outputs rather than outcomes. Quantitative targets for additional indicators were provided when the Additional Finance (AF) was approved. The AF enabled better tracking of results. It also expanded the project scope but this was short-lived because the Government of Pakistan requested the cancelation of US$25 million to respond to the Covid-19 pandemic. The evaluation accordingly had to measure progress against the end-of-project targets set at AF.

Outputs

**Comparing against the end-of-project targets**

Only one of the five output targets was fully achieved.

- No strategic assessments for improved water management were carried out. The target set in the Project Paper for the AF was seven.
- 80 staff in federal institutions trained on water resources management, hydropower related issues, and project management. The target set in the Project Paper for the AF was 90.
- 80 telemetry stations upgraded. The target set in the Project Paper for the AF was 90.
- Seven decision support tools and models for water resources management established and/or upgraded. The target set in the Project Paper for the AF was five.
- Two labs and facilities for water resources management established and/or upgraded. The target set in the Project Paper for the AF was four.

Outcomes

**Comparing against the end-of-project targets**

**PDO Indicator (Modern tools Operationalized) was not fully achieved.**

1. Eight modern tools were operationalized and used for decision making. The revised target set in the Project Paper for the AF was 13, up from six in the PAD.

**PDO Indicator (Direct Project Beneficiaries) was not fully achieved.**

2. Some 200 people, staff of water institutions, directly benefited from the project, (1 percent female). The target set in the Project Paper for the AF was 250, (1 percent female).

The PDO indicator targets were not fully achieved. The efficacy of the project in achieving this objective is modest.

Rating
OBJECTIVE 2

Objective
“To improve the investment planning of water resources in the Indus River Basin.”

Rationale
A direct causal link can be drawn between the project’s original activities and the expected outcomes. The activities consisted of (a) upgrading of tools, database, models, and management systems; (b) studies of sediment management carried out; (c) asset management plans completed; (d) feasibility studies of run-of-the-river hydro projects completed. The key outputs were (a) integrated Indus basin model revised; (b) sediment management study for the Tarbela Reservoir carried out; (c) WAPDA engineers trained on dam safety; (d) detailed design and tender documents for the Tarbela fourth extension hydropower project and the Dasu run-of-the river hydropower projects completed; (e) feasibility study of constructing underground dams carried out and potential small dam sites identified; and (f) National Flood Protection Plan developed.

In turn, these outputs would be expected to result in the outcome of improved investment planning in the Indus River Basin. Overall, the causal pathways from inputs to outcome were valid and direct, and the outcomes achieved could be mostly attributed to the project’s interventions.

The key assumption leading to this objective was that improved investment planning of water resources in the Indus River Basin would be achieved by (a) upgrading existing tools, databases, models, and management systems; (b) preparing feasibility studies for hydropower projects; (c) preparing sediment management studies for the Indus system; (d) preparing asset management plans; and (e) and carrying out dam safety inspections, preparing studies, and training engineers. The activities, if completed, would be sufficient to bring about the expected change.

Outputs

**Compared against the end-of-project targets**

Two of the three output activities were fully achieved and one was nearly achieved.

- Eight studies for investment planning developed, including improved resettlement plan, and study on policies for benefit sharing among stakeholders on hydropower projects. The target set in the Project Paper for the AF was seven.
- One assessment was carried out for improved operations of hydraulic infrastructure, including a sediment assessment study. This met the target set in the Project Paper for the AF.
- Sediment management studies and flushing tests for the Tarbela Reservoir were carried out. This met the target set in the Project Paper for the AF.

Outcomes

**Compared against the end-project targets**

PDO Indicator 2 (WCAP detailed design) was not fully achieved.
Two investments informed by WCAP activities and outputs were approved for detailed design/implementation. The target set in the Project Paper for the AF was three, and the original target was two.

The PDO indicator target was not achieved. The efficacy of the project in achieving this objective is rated Modest.

<table>
<thead>
<tr>
<th>Rating</th>
<th>Modest</th>
</tr>
</thead>
</table>

### OVERALL EFFICACY

**Rationale**
Overall efficacy is rated Modest. The objective to improve the management of water resources in the Indus River system was not achieved and is rated Modest. The objective to improve the investment planning of water resources in the Indus River system was also not fully achieved and is rated Modest. Overall efficacy is rated Modest.

<table>
<thead>
<tr>
<th>Overall Efficacy Rating</th>
<th>Primary Reason</th>
</tr>
</thead>
<tbody>
<tr>
<td>Modest</td>
<td>Low achievement</td>
</tr>
</tbody>
</table>

### 5. Efficiency

**Economic efficiency.** No economic analysis of the project was conducted at appraisal, because the project was primarily a capacity building and training program, for which economic analysis is not required, according to the PAD, paragraph 57. However, an economic analysis was conducted for the interim Implementation and Completion and Results Report (Report Number: ICR00001663), in preparation of the AF. It concluded that the project’s relatively small investment in capacity building and technical assistance made a significant contribution, particularly in improving the investment planning to address the country’s power crisis. It calculated a net present value based on the assumption that the absence of the project, the investments in the Tarbela Fourth Extension Hydropower Project and the Dasu Hydropower Stage I Project would be made and the benefits realized, but with significant delays.[1]

Under the optimal project implementation schedule (that is, zero delay due to the support of the project) the combined net present value (NPV) of Tarbela and Dasu projects is estimated at US$2,784.2 million. This value falls to only US$1,589.1 million, if the project implementation is delayed by five years in the absence of project support, which is equivalent to avoided benefit loss of US$1,195.1 million (or US$2,784.2 million less US$1,589.1 million).[2] The assumptions and methodology used in the cost-benefit analysis were appropriate.

The economic analysis also noted that the project’s support resulted in the identification of the best possible design of the Dasu Hydropower Project with the lowest unit investment cost, and considerably lower
The resettlement of people, and 13 percent less land flooded than the next best alternative. The project’s also selection of the least cost option for the Tarbela Hydropower Project.

The economic analysis was updated at project completion, using the same assumptions and methodology as used for the interim ICR (ICR, page 15–17). It calculates the NPV of the two hydropower projects following a five-year delay to be US$1,485.1 million, and the value of the avoided benefits to be US$1,299.1 million (US$2,784.2 million less US$1,485.1 million).

**Value for money.** The project focused on achieving value for money. It supported the strengthening of existing institutions and agencies, instead of creating new ones, and trained existing staff. It financed the upgrading of decision support tools already in use, supporting development of newer tools only where no comparable tools were already in place. Terms of reference for studies were carefully reviewed to ensure that they were appropriate, required inputs from experts with appropriately defined skill levels, and costing was realistic. Adherence to these was carefully monitored during implementation and contributed to efficient use of resources.

**Design and implementation efficiency.** The project closing date was extended by seven years and five months to allow adequate time to complete ongoing contracts, to absorb the AF. However, between AF project effectiveness (February 5, 2016) and project closure (June 30, 2020) only a further US$6.78 million was disbursed. The ICR (paragraph 21) comments that the government’s changing sector priorities resulted in slow disbursements. US$25 million was cancelled from the project (72 percent of the AF of the project) on March 17, 2020. Time overruns and cancellations detracted from efficiency given, the opportunity cost of capital and the service fee that borrowers continued to pay on Bank loans.

The economic analysis prepared at project completion indicates that the project provided significant returns in relation to its costs. However, the significant delays in implementation and the cancellation of a portion of the credit, reduced overall efficiency. Efficiency is rated Modest.

[1] Tarbela Fourth Extension Hydropower Project (P 157372) with project cost US$840 million was approved on March 20, 2012; Dasu Hydropower Stage I Project (P 121507) with project cost US$1,288.40 million was approved on June 10, 2014.

[2] The assumptions and methodology followed those of the economic analysis of the investments in the hydropower plants as specified in the respective PADs, with the only modification being the year benefits would be realized.

### Efficiency Rating

**Modest**

---

### Efficiency Rating Table

<table>
<thead>
<tr>
<th>Rate Available?</th>
<th>Point value (%)</th>
<th>*Coverage/Scope (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appraisal</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

[ ] Not Applicable
ICR Estimate  

<table>
<thead>
<tr>
<th>ICR Estimate</th>
<th>0</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0</td>
</tr>
</tbody>
</table>

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

### 6. Outcome

With substantial relevance of objectives, modest efficacy, and modest efficiency, the overall rating is Moderately Unsatisfactory.

a. **Outcome Rating**

   Moderately Unsatisfactory

### 7. Risk to Development Outcome

The risk to development outcome is considered to be high. The project focused on strengthening the water sector institutions, overall institutional development takes time, and the client needs to mainstream capacity-building interventions in the overall planning and design of hydropower projects in the Indus River Basin and in the management of water resources. The Project Management and Policy Implementation Unit (PMPIU) was responsible for the dissemination of the studies during the project implementation period. However, the PMPIU was dissolved at project closure, and no other agency has been assigned the roles performed by the PMPIU. Thus, there is high risk that the feasibility studies and other studies supported under the project are not widely disseminated and, therefore, do not inform future policy and planned investments. In addition, political instability and governance presents risks to the development outcome because of possible political pressures related to reforms in the sector that could challenge continued progress and undermine governance.

### 8. Assessment of Bank Performance

a. **Quality-at-Entry**

At project entry, the objective of improving management and investment planning of water resources in the Indus River system through provision of technical assistance and support for capacity building was of high strategic priority. The project was based on an analysis of the sector background and the lessons learned from the World Bank’s multi-decade-long engagement and experience in the water sector in Pakistan, in general, and support to management of the IBIS, more particularly. The key lessons adopted in the project design included (a) use of simple and streamlined procedures governing implementation, reflected in the authorization of the PSC to approve any changes, additions, and inclusion of studies/activities, according to evolving needs; (b) designating the project director of the PMPIU to manage and coordinate the project on a day-to-day basis; (c) limiting the technical assistance to federal institutions—rather than also including provincial institutions—and the main river system to reduce the project’s overall complexity; and (d) packaging of consultant contracts and technical assistance to avoid,
to the extent possible, lengthy procedures and overheads in procurement and supervision of contracts (PAD, paragraph 37).

The project’s approach was straightforward, with support for strengthening water sector institutions, for building capacity of human resources, and for preparing feasibility studies, detailed designs, and bidding documents for future investments. The project activities were sufficient to achieve the project objectives. The technical aspects of the project were sound. The project supported activities to increase the country’s capacity to manage water resources and improve investment planning, both necessary to address the development problem of lack of access to energy supplies. Creation of the PMPIU to serve as the secretariat to the PSC, and overall project management, and coordination of implementation was appropriate, given the large number of implementing agencies involved. Mitigation measures for fiduciary risks, including provisions for extensive staff training, were appropriately built into project design.

However, project implementation arrangements were too complex, with five implementing agencies, some of which had little capacity to carry out the project in compliance with the Bank’s policies and procedures.

Overall, the quality at entry had several shortcomings. The indicators in the results framework were not well-specified and were revised during the preparation of the AF. Many activities were dropped because they duplicated activities financed by others. Although most risks were appropriately identified, the mitigation measures to address the low implementing capacity of some of the implementing agencies were inadequate, which led to implementation delays and the eventual transfer of implementation responsibilities for feasibility studies for small dams (sub-component A4) from the Planning Commission to the PMPIU. In addition, the provisions for procurement as specified in the Financing Agreement were confusing to staff of the implementing agencies, leading to delays in procurement. Giving the PSC the role of approving any changes, additions, and inclusion of studies/activities slowed implementation, because decisions had to wait until the PSC met, which was often no more than than four times a year, in some years less often and in one year it did not meet at all.

Quality-at-Entry Rating
Moderately Unsatisfactory

b. Quality of supervision
Six task team leaders led project preparation and implementation, five based in Islamabad allowing consistent follow up. The handover between task team leaders was handled well to ensure continuity in client relationships and supervision. Close supervision ensured that the implementation teams focused on development impact, such as improving management and investment planning in the Indus River Basin. However, this did not resolve delays in implementation and speeding up disbursements.

Some 15 implementation support missions were held during project implementation, one every six months or so. Aide Memoires and Implementation Status and Result Reports were of high quality and candid, thoroughly covering all key issues and providing practical recommendations on how to address challenges, such as proposing dropping activities that were not progressing and adding new ones that were ready for
implementation. The Bank team proactively revised the project’s performance ratings, in response to changes in implementation progress.

Supervision of safeguard and fiduciary aspects of the project was appropriate. The Bank team identified slow-moving activities and low-performing implementing agencies and restructured the project to shift resources to better-performing implementing agencies and to activities directly addressing the country’s energy shortage (Interim ICR, paragraph 35). In response to persistent issues with implementation, the Bank team restructured the project an additional five times to extend the project closing date, adjust activities, and amend the results framework in response to the AF and later to the cancelation of US$25 million.

The Bank team was flexible and responsive to emerging needs of the client. For example, at the request of the government, it prepared the AF. The Bank team used the opportunity of the restructuring to revise the results framework, providing more clearly-defined indicators and updating the targets to reflect the project’s increased scope. However, the results indicators could have been revised much earlier during the previous restructurings, and focused more on outcomes than outputs. Finally, the Bank team prepared the request to cancel US$25 million in response to the government’s request to instead use the funds to respond to Covid-19.

The overall risk rating was revised to Substantial from Moderate, primarily because of concerns that political pressures could reverse reforms and undermine governance in the sector, and because of potential resistance to the transfer of water resources management activities to IRSA.

However, Bank performance in supervision had significant shortcomings. In response to the deficiencies in capacity of the implementing agencies and shifts in government priorities, the Bank team could have been much more proactive in restructuring the project by providing for partial cancellations of the AF. The team could also have restructured the project following the cancelation of project funds to lower targets in the results framework. In addition, the Bank team

Overall, the quality of supervision is rated moderately unsatisfactory, due to significant shortcomings in the proactive identification of and resolution of challenges. For example, revising the role of the PSC should have come as soon as it was evident that it met infrequently, slowing project implementation. Weaknesses in the results framework should have been tackled much earlier, and revisions should have included more outcome-oriented indicators. Revising the roles of the weaker implementing agencies should have taken place much sooner during project implementation.

Quality of Supervision Rating
Moderately Unsatisfactory

Overall Bank Performance Rating
Moderately Unsatisfactory

9. M&E Design, Implementation, & Utilization
a. M&E Design

The theory of change was sound, specifying how the key activities and outputs led to the outcomes as reflected in the results framework. The project development objectives of improving management and investment planning of water resources in the Indus River system were clearly specified. However, the indicators in the PAD meant to track the project’s achievements were not poorly specified. The results framework was revised during the restructuring of March 2012, and again during the restructuring for the AF in November 2016 to address the shortcomings, but the new indicators still were not sufficient to measure the outcome of the project. Although the PDO indicators presented in the Project Paper for the AF were measurable, they were nearly all at the output rather than the outcome level. The intermediate results indicators, tracking outputs, such as strategic assessments for improved water management carried out under the project, were adequate to capture the contribution of the operation’s activities and outputs toward achieving the project’s objectives. The proposed data collection methods were adequate for all indicators. Overall, the project implementing agencies had the capacity to implement the M&E arrangements.

b. M&E Implementation

During the early years of project implementation, data collection focused on intermediate results indicators, because the PDO-level indicators were poorly defined. M&E implementation improved once the results framework was revised during the restructuring for the AF. The implementing agencies collected the data related to the activities for which they were responsible and reported them to the PMPIU, which compiled the quarterly progress reports. Reported results were discussed and verified during each mission.

However, no attempts were made to document the outcomes that were not included in the results framework. For example, the project teams could have explained what changed as a result of upgrading labs and decision support tools and of providing training in various topics. Recognizing the challenges, the Bank and government teams reached agreement that the PMPIU would hire an M&E specialist to prepare two comprehensive M&E reports prior to project closure (ISR, dated September 1, 2020). These reports were not delivered until close to project closing.

c. M&E Utilization

The quarterly progress reports prepared by the PMPIU, provided detailed status updates on progress towards outputs and disbursements. The Bank and government teams drew on their contents to make adjustments to planned activities during project implementation. For example, when the Bank and government teams noted that the progress with some activities was below expectations, the Bank restructured the project in March 2012, dropping duplicate and under-performing activities and adding those with higher strategic relevance.

The M&E system as designed and implemented was eventually sufficient to assess the achievements of the project, producing outputs that plausibly contributed to the PDO of improving the management and planning of water resources of the Indus River system. However, there were shortcomings in capturing other aspects of the results chain, such as how the outputs strengthened capacity of the water institutions in improving management and planning of water resources. Additional data are required to monitor the changes that take place as a result of training, upgrading decision support tools,
constructing and rehabilitating laboratories, and preparing feasibility studies. These data can be collected through surveys and other data collection methods.

**M&E Quality Rating**

Modest

### 10. Other Issues

**a. Safeguards**

At appraisal the project was assigned Environmental category “B,” to ensure oversight of the preparation of specific environmental and social assessments carried out in the context of hydropower feasibility studies financed by the project. Two safeguard policies were triggered during preparation of the project: Environmental Assessment (OP/BP 4.01), and Projects on International Waterways (OP/BP 7.50).

**Environmental Assessment (OP/BP 4.01).** The ISR dated March 30, 2021 stated that the project closed with a satisfactory overall safeguards rating. No specific environmental and social assessments were carried out for the project, either for the feasibility studies nor for the construction and extension of the PMPIU office in February 2011. As a part of the preparation of the AF, an Environmental and Social Management Plan was prepared to minimize potential adverse environmental impacts of constructing and refurbishing provincial irrigation departments, such as noise, dust, and occupational and safety risks of construction workers and of people living or working nearby.

**Projects on International Waterways (OP/BP 7.50).** The project did not support physical works other than the installation of flow measuring stations. None of the studies for which financing under the AF were proposed qualified as a "detailed design and engineering study" (that is, a study which would be implementation-ready and on the basis of which construction bids could be issued) for which a riparian notification is required. Therefore, the project was granted an exception to notification of riparian countries under paragraphs 7(b) of the Bank's policy OP 7.50.

**b. Fiduciary Compliance**

**Financial management.** The project had an adequate financial system which provided accurate and timely information, with reasonable assurance, that funds were being used for intended purposes. The project team prepared annual budgets on the basis of planned activities identified in the procurement plan. The Supreme Audit Institution audited the project’s financial statements which submitted them on time to the Bank (ICR, paragraph 79). The audit report of FY2019–20 raised a few queries, which were later addressed by the client. The ICR does not note whether audit reports were unqualified or provide information on the timeliness of submission of the interim financial reports. There were no known issues of corruption or misuse of funds associated with the project. All project funds were accounted for at project closing. Overall, fiduciary compliance was Satisfactory (Financial Management Supervision Report, October 2021).
**Procurement.** WAPDA and the PMPIU were responsible for procurement of contracts under their components. The PMPIU also provide procurement assistance to IRSA, IPDF and Planning Commission. Procurement risk after mitigation was assessed as moderate.

Procurement the most part was carried out as per the Financing Agreement and the World Bank’s Procurement Framework for Investment Project Financing, although with significant delays, given client reluctance to follow the Bank’s procurement advice on how to deal with the confusing provisions in the Financing Agreement (Aide Memoire, for the June 2019 mission, paragraph 9). Delays were also due to the absence of a qualified procurement specialist at the PMPIU for significant periods of time.

Procurement complaints at the IPDF were proactively addressed by the implementing agency and the World Bank. No mis-procurement was declared. Overall, procurement was rated Moderately Satisfactory.

c. Unintended impacts (Positive or Negative)
---

d. Other
---

### 11. Ratings

<table>
<thead>
<tr>
<th>Ratings</th>
<th>ICR</th>
<th>IEG</th>
<th>Reason for Disagreements/Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outcome</td>
<td>Moderately Unsatisfactory</td>
<td>Moderately Unsatisfactory</td>
<td></td>
</tr>
<tr>
<td>Bank Performance</td>
<td>Moderately Satisfactory</td>
<td>Moderately Unsatisfactory</td>
<td>Both quality at entry and quality of supervision had significant shortcomings.</td>
</tr>
<tr>
<td>Quality of M&amp;E</td>
<td>Modest</td>
<td>Modest</td>
<td></td>
</tr>
<tr>
<td>Quality of ICR</td>
<td>---</td>
<td>Substantial</td>
<td></td>
</tr>
</tbody>
</table>

### 12. Lessons

IEG derives the following lessons drawn from the ICR:

- **To avoid implementation delays, the role of the PSC should be limited in its terms of reference to providing overall policy guidance and general oversight of Project implementation, and not to making decisions on adjustments to project activities.** The PSC was given responsibility to make decisions regarding changes in project activities, in the expectation that this would be faster and more flexible than seeking government approval for each change. However, the PSC, which comprised representatives of multiple stakeholders, proved difficult to convene, which significantly slowed implementation.
• Where the results frameworks focus on outputs, supplementary data are required to measure the outcomes of institutional strengthening projects. The outcomes of projects that support capacity building and technical assistance are difficult to assess on the basis of outputs alone. Additional data are required to monitor the changes that take place as a result of training, upgrading decision support tools, constructing and rehabilitating laboratories, and preparing feasibility studies. These data can be collected through surveys and other data collection methods.

• Overcoming capacity gaps requires continuous and tailored support. The agencies implementing the project had very different capacities for implementation. To build the capacity of the weaker agencies requires precise identification of capacity gaps and the provision of expertise from outside of the agencies. Capacity building should also comprise more than just trainings, and include study tours, ad hoc technical assistance, and support in “soft skills” such as capacity for coordination. More intensive efforts to build the capacity of weaker implementing agencies would help to close the capacity gaps.

• Project management arrangements need to be maintained throughout the project period to ensure smooth implementation. A key reason for the underperformance of the AF was the lack of a full-time dedicated project director and the frequent turnover of staff, and the chronic understaffing of the PMPIU. The following measures could strengthen management of future projects: (a) use existing government systems and staff as much as possible to avoid creating parallel systems and build their capacity aimed at fostering a dedicated cadre of experts in the public sector, (b) encourage implementing agencies to procure experts with compensation commensurate with the market.

13. Assessment Recommended?

No

14. Comments on Quality of ICR

The ICR provides a detailed overview of the project. It is clearly written and is largely consistent with the guidelines. It provides adequate details of the project’s activities, including a detailed annex summarizing the efficiency analysis. The ICR also provides a good theory of change analysis in regard to the causal links and the full results chain.

However, the ICR could have been more outcome-focused, providing evidence of how the outputs generated by the project have been used to improve the management and planning of water resources. Moreover, it could have been more forthright about the strategic issues that needed addressing to avoid the delays that plagued the project. It could have provided information on compliance with procurement, the timeliness of submission of interim financial reports, the opinions of the external audits, and whether all outstanding funds had been returned to the Bank at project closure.
a. Quality of ICR Rating
   Substantial