



1. Project Data

Project ID

P107666

Project Name

PE Water Resources Mgmt.

Country

Peru

Practice Area(Lead)

Water

L/C/TF Number(s)

IBRD-77010

Closing Date (Original)

30-Jun-2015

Total Project Cost (USD)

23,670,000.00

Bank Approval Date

02-Jul-2009

Closing Date (Actual)

31-Dec-2015

IBRD/IDA (USD)
Grants (USD)

Original Commitment

10,000,000.00

0.00

Revised Commitment

9,897,622.96

0.00

Actual

9,897,622.96

0.00

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2. Project Objectives and Components

a. Objectives

According to the Project Appraisal Documents (PAD) (p. 5) the objective of the project was “to improve the management of water resources through the strengthening of the Borrower’s capacity for participatory, integrated, basin-scale water resources management (WRM) at the central level and in selected river basins.”

The objective stated in the Loan Agreement of December 3, 2009 is the same.



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

No

c. Will a split evaluation be undertaken?

d. Components

The project included two components:

Component 1: Improving WRM capacity at the national level (appraisal estimate total of US\$6.62 million, IBRD loan US\$3.03 million, actual US\$8.33 million, 125.8% of appraisal estimate): The component was to finance the strengthening of the National Water Authority's (ANA) capacity through financing equipment, hiring consultants and providing technical assistance. Furthermore, this component was to finance the establishment of a national water information system, formulation of a national water quality management strategy, and carrying out of activities aimed at promoting a new "water culture" among decision makers, water professionals and the general public.

Component 2: Improving WRM in selected river basins (appraisal estimate total of US\$17.05 million, IBRD loan of US\$6.97 million, actual US\$13.37 million, 78.4% of appraisal estimate): This component was to finance the implementation of participatory Integrated Water Resource Management in selected river basins. Also, this component was to finance the discussion, improvement and validation of preliminary diagnostics and water management plans with key stakeholders in four of the selected river basins.

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

Project Cost: The project was estimated to cost US\$23.67 million, actual cost was US\$21.80 million, 92.1% of the appraisal estimate.

Financing: The project was to be financed by a US\$10 million IBRD loan of which US\$9.90 million was disbursed and US\$13.67 million of local funds.

Borrower Contribution: The borrower was to contribute US\$13.67 million. Actual contribution was US\$11.90 million, 87% of appraisal estimate.

Dates: The project was restructured twice:

- On April 4, 2015 the project was restructured (Level 2) to reallocate funds across disbursement categories to fully disburse the loan.
- On June 18, 2015 the project was restructured (Level 2) to extend the closing date by six months from June 30, 2015 to December 31, 2015 to allow for the completion of project activities.

3. Relevance of Objectives & Design

a. Relevance of Objectives



High: The objective of the project was highly relevant since growing water scarcity was becoming an obstacle to further economic and social development in the country. Also, less than 25 percent of municipal and industrial wastewater was treated before being released into the environment. The deterioration of water quality had a negative impact on the population's health and agricultural exports, and increased the cost of treatment for potable water supply.

The project's objective was in line with the government's National Water Resources Policy, which was approved in August 2012 and declared Integrated Water Resource Management and its principles as a national priority. The project's objective is also in line with the current National Water Sector Strategy which states the importance of the policy in the need to pursue IWRM through strengthening ANA at the central and river basin levels. Also, the project's objective was in line with the Bank's Country Partnership Strategy (2007-2011) at the time of appraisal. One of the three pillars aimed at making growth environmentally sustainable. The objective was also in line with the Bank's Country Partnership Strategy (2012-2016) at project closing which emphasizes the importance of "sustainable growth and productivity" and "sustainable rural development and water resource management".

Rating

High

b. Relevance of Design

Substantial: The planned activities were logically and plausibly linked to the achievement of the project objectives. Activities to improve the management of water resources included the strengthening of the National Water Authority's (ANA), establishing the national water information system, developing the national water quality management strategy and implementing activities to promote a new "water culture".

Furthermore, in three pilot river basins a participatory Integrated Water Resource Management approach was implemented. Also, preliminary diagnostics and water management plans were discussed with key stakeholders in four additional river basins. However, the project design did not take the exogenous risk of delays in project effectiveness and availability of IBRD funds in the first year of implementation as well as staff changes within the government and ANA sufficiently into account, resulting in implementation delays.

Rating

Substantial

4. Achievement of Objectives (Efficacy)

Objective 1

Objective

To improve the management of water resources through the strengthening of the Borrower's capacity for



participatory, integrated, basin-scale water resources management (WRM) at the central level and in selected river basins”:

Rationale

The following results reported by the ICR at output and outcome levels are grouped according to three headings: (1) Participatory Water Resource Management; (2) Integrated Water Resource Management; and (3) Decentralized Water Resource Management. The results reported under these headings taken together form the basis for deriving an efficacy rating for achievement of the project development objective.”

Participatory Water Resource Management:

Outputs:

- Operational units of ANA and the Meteorological and Hydrological National Service (SENAMHI) were established and fully staffed, achieving the target.
- An agreement between ANA and the Ministry of Education to introduce courses promoting the new “water culture” in the standard curriculum of primary and secondary schools, was signed, achieving the target.
- A multi-sectoral working group was established to formulate the water quality strategy through a participatory process, achieving the target.
- The National Water Resources Management System was strengthened. The water information system was improved, a new water culture was promoted, a multi-sectoral water quality group was created and a strategy was formulated and implemented. The target was achieved.
- River Basins Organizations in the three pilot basins and participatory river basin plans were formulated and adopted, achieving the target.
- Multi-sectoral river basin committees were created in two river basins, and two river basins are in the process of creating basin committees, not achieving the target of creating committees in four river basins.

Outcomes:

- The Framework Agreement resulted in effective and free sharing of data with ANA to ensure the sustainability of the hydromet networks in the three pilot basins.
- The creation of River Basin Councils and multi-sectoral committees resulted in a more participatory process for river basin planning and water quality monitoring.

Integrated Water Resource Management

Outputs:

- Specific agreements to set up a hydromet network in pilot basins and define operations & maintenance responsibilities and data exchange protocols were implemented, achieving the target.
- A general methodology for cost calculation of Water Resource Management at the river basin level was designed and implemented, achieving the target.
- The National Water Information System became operational, achieving the target.
- Nodes in SENAMHI and in local water administrations responsible for each of the three pilot river basins,



are disseminating information for integrated water resource management including water availability, quality, water rights, discharge and infrastructure, achieving the target.

- The website to disseminate water resources information is fully operational, achieving the target.
- 35,545 annual hits were counted on the water resource webpage. This indicator lacked a target.
- All staff of the National Water Resources Management System Office received on the job training for the operation and the maintenance of the National Water Resource Management System and its information application, achieving the target.
- The water quality management policy, strategy and responsibilities were defined, achieving the target.
- 605 mid-level management decision-makers and professionals were trained, surpassing the target of 100 decision-makers.
- 233 water professionals and decision makers were trained were trained in Integrated Water Resource Management, surpassing the target of 185 professionals and decision makers.
- 28 meteorological and hydrological stations were installed, upgraded, automated and/or relocated, achieving the target.
- 331 discharges were identified, classified and monitored in the Chili and Chancay-Lambayeque basins, surpassing the target of 40 discharges.
- 39 water quality points were measured annually in the Chili basin, surpassing the target of 15 water quality points.
- 73,950 agricultural and non-agricultural water rights were consolidated, surpassing the target of 40,000 water rights.
- 1,236 agricultural and non-agricultural water rights were formalized, surpassing the target of 310 water rights.

Outcomes:

- The revenue collected for Integrated Water Resource Management increased from S/.37,038,348 in 2009 to S/.129,946,494 in 2015, surpassing the target of S/.68,160,143.
- Stakeholders, through the multi-sectoral committee, do not participate in the updating and validation of the preliminary Integrated Water Resource Management plans, not achieving the target.

Decentralized Water Resource Management

Outputs:

- River Basin Councils were established and are operational in three pilot basins, achieving the target.
- A methodology for designing an Integrated Water Resource Management plan was established, taking into account social and environmental safeguards, in addition to climate change considerations for pilot basins, achieving the target.
- Water resources models for each river basin were developed and calibrated, achieving the target.
- Integrated Water Resource Management plans were endorsed by each River Basin Council and formally approved by ANA, achieving the target.
- Three learning campaigns were delivered each year in each pilot river basin. Integrated Water Resource



Management applications and materials were published on ANA's website. Also, a mobile educational unit disseminated information on the "water culture" program, achieving the target.

Outcomes:

- The project contributed to the decentralized management of WRM at the basin level.
- Management tools such as internal regulations, annual work plans and annual water allocation plans were developed.
- Technical secretariats and working groups were established to enable the River Basin Councils to make informed decisions.
- Through the project information nodes and decision-support rooms for basin stakeholders were established and operated, water rights and discharge permits were formalized and registered. Also, the capacity of staff at local water administrations and administrative water authorities was strengthened through training.

Rating

Substantial

5. Efficiency

Substantial: The PAD did not conduct an Economic analysis due to the institutional strengthening nature of the project. The ICR conducted a combination of three valuation methods: i) a benchmarking process; ii) following the Water Resource Management methodology by the World Meteorological Organization to estimate the benefits of the water information component; and iii) estimating the Net Present Value for the development of financing mechanisms and Contingent Evaluation for the establishment of river basin organizations. However, these calculations estimate more the efficacy of the project rather than the efficiency.

In terms of cost effectiveness, the project implemented all planned activities at a lower cost than originally planned (project cost estimate at appraisal US\$22.45 million, actual project cost US\$21.8 million). Due to cost savings, the implementation of additional activities such as the development of two additional River Basin Councils in non-pilot basins, the financing of key pre-feasibility studies in support of the implementation of the Integrated Water Resource management plans, participatory water quality monitoring and a review of the institutional framework of dam safety committees, were possible. However, the project also experienced several implementation delays due to delays in project effectiveness, availability of Bank funds in the first year, and the signing of inter-ministerial coordination agreement. However, the project's implementation period was only extended by six months to allow for the completion of all original and additional activities. Therefore, 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		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

Relevance of objective was rated High since Peru's growing water scarcity was becoming an obstacle to its further economic and social development. Relevance of design was rated Substantial since the planned activities were logically and plausibly linked to the achievement of the project objectives. Achievement of the objective and Efficiency were rated Substantial. Taking everything together, the project's outcome is rated Satisfactory.

a. Outcome Rating

Satisfactory

7. Rationale for Risk to Development Outcome Rating

Modest: Water resource management continuous to be a key area to the government and the three regional governments which participated in the pilot basins. Therefore, the government is likely to be committed to improving water resource management in the future. From a financial perspective, the project's achieved outcomes are likely to be sustainable. ANA included the costs for the river basins' technical secretariats in its annual budget. Furthermore, ANA has been able to increase its revenues from water use and pollution discharge fees consistently. These fees present 77 percent of ANA's budget. Also, the Meteorological and Hydrological National Service has included its cost for operation & maintenance for upgrading the hydrometeorological stations in its operating budget.



a. Risk to Development Outcome Rating

Modest

8. Assessment of Bank Performance

a. Quality-at-Entry

The project was built on the principles for promoting Integrated Water Resource Management. Also, the design took international good practices and lessons learned from other countries into account. The Bank team identified relevant risk factors. ANA's weak financial management and procurement capacity were rated Substantial. Mitigation activities were adequate and included clarifying the activities and responsibilities of each implementing agency, simplifying flow of funds arrangements, and training staff in financial management and procurement.

The Results Framework was adequate to track progress towards the project's objective. However, it was overly complex since it included 29 indicators.

Quality-at-Entry Rating

Satisfactory

b. Quality of supervision

The Bank team consisted of multidisciplinary specialists and international experts. The Bank team conducted regular supervision missions and provided the PIU with technical support when needed. Furthermore, the Bank team monitored the project's compliance with the Bank's environmental and indigenous safeguards on a regular basis.

When the regional government of one of the pilot river basin was reluctant to participate in the project, the Bank team worked closely with ANA to identify a new pilot river basin. Also, the Bank supported ANA by identifying additional financing sources such as various Trust Funds, and the Water and Sanitation Program by the Swiss Cooperation and The Nature Conservancy.

Quality of Supervision Rating

Satisfactory

Overall Bank Performance Rating

Satisfactory

9. Assessment of Borrower Performance

a. Government Performance

The government was committed to the implementation of the project despite an administration change in



2011. The government showed its commitment by establishing the National Water Authority (ANA), issuing a water resources law, and increasing the budget for water resources management in the central government's annual budget.

In order to ensure stakeholder buy-in at the national and sub-national levels, the government designed participation and coordination mechanisms. Also, the government established a multi-sectoral Project Steering Committee responsible for providing high-level guidance and oversight. Furthermore, the committee ensured that the PIU was equipped with sufficient and qualified staff.

The project experienced some initial implementation delays. The project became effective 16 months after Board approval and ten months after the signing of the Loan Agreement. Reason for this delay was the government's request to have the Bank's and the Inter-American Development Bank's projects effective at the same time and the project signing taking place in December 2009 which was too late for incorporating the Bank's loan into the government's budget for 2010. **However, overall government performance was Satisfactory.**

Government Performance Rating

Satisfactory

b. Implementing Agency Performance

ANA was responsible for the implementation of the project. ANA was committed to the implementation of the project and to achieving the development objective. ANA's limited capacity in Financial Management and Procurement was identified as substantial risk during project preparation. However, through the Bank's support ANA produced progress, financial management and procurement reports on a regular basis and performed its fiduciary function adequately.

The project experienced implementation delays in 2011 due to the replacement of the head of ANA. However, the PIU staff remained the same and implementation picked up rapidly again.

A M&E specialist within ANA was responsible for measuring progress towards the project's objective which allowed to use M&E data to inform decision making.

Implementing Agency Performance Rating

Satisfactory

Overall Borrower Performance Rating

Satisfactory

10. M&E Design, Implementation, & Utilization

a. M&E Design

The objective of the project was clearly specified and well reflected in the selected indicators. The Results Framework included a large amount of indicators - three PDO indicators and 29 Intermediate Outcome indicators. Most indicators were measurable in terms of numbers, timing and location. However, the target of the first PDO indicator "NWRMS strengthened" was not sufficiently precise. Also, most indicators were focusing



on outputs rather than outcomes.

b. M&E Implementation

The Results Framework was implemented properly. A full-time M&E specialist within the PIU worked closely with the coordinators of the components at the national and river basin levels. Baseline studies, a mid-term review, semi-annual project reviews and a final evaluation were conducted to assess implementation progress, delays and the need to relocate funds between subcomponents.

The Bank team did not simplify the Results Framework by reducing the large amount of indicators.

c. M&E Utilization

M&E data was used to identify implementation delays and the need to relocate resources from subcomponents that had reached their targets ahead of time to subcomponents which needed additional funds. Furthermore, M&E data informed the decision to extend the closing date by six months to allow for the implementation of some activities.

M&E Quality Rating

Modest

11. Other Issues

a. Safeguards

The project was categorized as category B and triggered the Bank's Environmental Assessment (OP/BP 4.01) and Indigenous People (OP/BP 4.10) safeguards. The Environmental Assessment safeguard was triggered due to the potential environmental impacts of small works financed under component 2. The project prepared an Environmental Management Framework that would apply to all works financed by the project.

The Indigenous People safeguard was triggered since it was expected that some of the pilot basins would affect indigenous people. An Indigenous People Planning Framework was developed to guide the preparation of Indigenous People Plans if necessary. Since different locations for the pilot basins were selected than was originally planned, no indigenous people were affected by the pilots. The compliance with the Bank's safeguards was rated Satisfactory throughout the entire project implementation.

b. Fiduciary Compliance

The project experienced some challenges such as the use of Excel records to produce financial reports, which



were subject to errors if adequate controls were not in place, and changes in fiduciary staff who was responsible for managing project-closing activities within ANA. However, intermediate financial reports and annual financial audit reports were submitted in a timely manner. The auditors' opinions were unqualified. Financial Management was rated Moderately Satisfactory throughout project implementation.

Procurement

The project did not encounter any procurement challenges. Four ex-post procurement reviews were conducted in June 2012, June 2013, March 2014 and June 2015. Recommendations, which were made in the ex-post reports and Aide Memoires were addressed by ANA.

c. Unintended impacts (Positive or Negative)

NA

d. Other

12. Ratings

Ratings	ICR	IEG	Reason for Disagreements/Comment
Outcome	Satisfactory	Satisfactory	---
Risk to Development Outcome	Modest	Modest	---
Bank Performance	Satisfactory	Satisfactory	---
Borrower Performance	Satisfactory	Satisfactory	---
Quality of ICR		Substantial	---

Note

When insufficient information is provided by the Bank for IEG to arrive at a clear rating, IEG will downgrade the relevant ratings as warranted beginning July 1, 2006.

The "Reason for Disagreement/Comments" column could cross-reference other sections of the ICR Review, as appropriate.

13. Lessons

The following lessons are selected, with some modification of language, from ten lessons formulated by the ICR (p. 23-24):

- Piloting river basins to implement a new institutional and legal framework before expanding it in the rest of the country is useful. In this project it provided the opportunity to revise guidelines based on the



implementation experience and generate interest among stakeholders in other river basins.

- In order to develop sufficient participation by stakeholders it is important to identify potential stakeholders and support the election of representatives of each group. In this project such a process allowed for a balanced representation of views and interests.
- Promoting an education program such as “water culture” is critical for strengthening institutional capacity and communication with the public. In this project the “water culture” program was critical for sharing project results and improving ANA’s communication with the public.

14. Assessment Recommended?

No

15. Comments on Quality of ICR

The ICR provides a good overview of project preparation and implementation. The ICR is concise, candid and makes a good attempt to conduct an Economic Analysis. The ICR mainly focuses on the outputs which the project produced, but reports on achieved outcomes were for the most part expressed in relatively vague and general terms.

a. Quality of ICR Rating

Substantial