

**Validation Report**  
July 2020

# Kyrgyz Republic: Issyk-Kul Sustainable Development Project

Reference Number: PVR-670  
Project Number: 41548-013  
Loan Number: 2556  
Grant Number: 0163



*Raising development impact through evaluation*

## ABBREVIATIONS

ADB	–	Asian Development Bank
ADF	–	Asian Development Fund
DSC	–	design and supervision consultant
EIRR	–	economic internal rate of return
ERM	–	enterprise resource management
FIRR	–	financial internal rate of return
GIS	–	geographic information system
IEC	–	information, education and communication
ISDP	–	Issyk-Kul Sustainable Development Project
MOF	–	Ministry of Finance
NRW	–	nonrevenue water
O&M	–	operations and management
PBMC	–	performance-based management contract
PCR	–	project completion report
PAF	–	project assistance facility
PIO	–	project implementation office
PMO	–	project management office
PPP	–	public–private partnership
SAEPF	–	State Agency on Environmental Protection and Forestry
SDR	–	special drawing rights
SWM	–	solid waste management
TOR	–	terms of reference
WSS	–	water supply and sanitation

## NOTE

In this report, “\$” refers to United States dollars.

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## PROJECT BASIC DATA

<b>Project number</b>	41548-013	<b>PCR circulation date</b>	5 August 2019	
<b>Loan/Grant numbers</b>	2556, 0163	<b>PCR validation date</b>	Jul 2020	
<b>Program name</b>	Issyk-Kul Sustainable Development Project			
<b>Sector and subsector</b>	Water and other urban infrastructure and services	Urban policy, institutional and capacity development Urban sanitation Urban sewerage Urban solid waste management Urban water supply		
<b>Strategic agenda</b>	Environmentally sustainable growth			
<b>Safeguard categories</b>	Environment		A	
	Involuntary resettlement		C	
	Indigenous peoples		C	
<b>Country</b>	Kyrgyz Republic		<b>Approved</b> (\$ million)	<b>Actual</b> (\$ million)
<b>ADB financing</b> (\$ million)	<b>ADF: 13.50</b>	<b>Total project costs</b>	37.50	30.06
	<b>OCR: 16.50</b>	<b>Loan/Grant</b>		
		L2556	16.50	11.67
		G0163	13.50	12.09
		<b>Borrower</b>	7.50	6.30
		<b>Beneficiaries</b>	0.00	0.00
	<b>Others</b>	0.00	0.00	
<b>Cofinancier</b>		<b>Total cofinancing</b>	0.00	0.00
<b>Approval date</b>	30 Sep 2009	<b>Effectiveness date</b>	4 Jan 2010	29 Jan 2010
<b>Signing date</b>	5 Nov 2009	<b>Closing date</b>	30 Jun 2015	2 Aug 2018
<b>Project officers</b>	V. Padmanabhan C. Llorence M. Davila H. Zhang M. Paniagua A. Amanova	<b>Location</b>	<b>From</b>	<b>To</b>
		ADB headquarters	Jan 2011	Mar 2011
		ADB headquarters	Mar 2011	Apr 2012
		ADB headquarters	Jan 2011	Jul 2015
		ADB headquarters	Jun 2015	Mar 2016
		KYRM	Mar 2016	Apr 2017
KYRM	Apr 2017	Dec 2017		
<b>IED review</b> <b>Director</b> <b>Team leader</b>	N. Subramaniam, IESP Tomoo Ueda, Principal Evaluation Specialist, IETC*			

ADB = Asian Development Bank, ADF = Asian Development Fund, IED = Independent Evaluation Department, IESP = Sector and Project Division, IETC = Thematic and Country Division, OCR = ordinary capital resources, PCR = project completion report, KYRM = Kyrgyz Republic Resident Mission.

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## I. PROJECT DESCRIPTION

### A. Rationale

1. Most water supply and sanitation (WSS) infrastructure in the Kyrgyz Republic was built 40–50 years ago under the former Soviet Union. The systems were part of the Soviet strategy to

provide full service to all communities based on an economy driven by 5-year development plans. As the Soviet Union's economy stagnated in the 1970s, WSS service provision declined. Service delivery further worsened after the Kyrgyz Republic gained independence in 1991. With increasing operating costs due to inflation and stagnating tariffs, WSS services were abandoned in some areas of the country that led to a serious rural typhoid outbreak in the early 2000s and deteriorating utility operations.

2. Under the National Sustainable Development Strategy for 2013–2017,<sup>1</sup> the government planned to promote regional development, including the development of secondary cities beyond the established and wealthier regions of Bishkek, Chui, and Issyk-Kul provinces. The strategy cited the need to improve WSS and develop sector policy but without specific investment plans.

3. Asian Development Bank's (ADB) Issyk-Kul Sustainable Development Project (ISDP) aimed to improve urban basic sewerage, sanitation, solid waste management (SWM), and water supply in the cities of Balykchy, Cholpon-Ata, and Karakol. The project covered services and urban infrastructure that most needed improvement. The infrastructure was dilapidated and without adequate operation and maintenance (O&M) and investments for more than 18 years. The project also aimed to develop the capacity of responsible city-level agencies to maintain the system.<sup>2</sup>

4. Being the world's second-largest saline lake, a Ramsar<sup>3</sup> site of globally significant biodiversity, and a United Nations Educational, Scientific, and Cultural Organization (UNESCO)-designated biosphere reserve, Lake Issyk-Kul is a significant part of Issyk-Kul Oblast's area and has contributed to its economic growth through tourism. Attracting about 1 million tourists annually, equivalent to 70% of the country's annual tourist, the lake has been a major economic driver in the region (footnote 2).

5. The lake region has attracted sizable tourism from neighboring countries and afar, with active construction and resorts sprawling around the lake's northern shores, primarily in Balykchy, Cholpon-Ata, and Karakol. Existing WSS infrastructure—including SWM—has been noted being decrepit, dysfunctional, and poorly maintained. It has become a challenge to serve booming tourists—four times the resident population—and their expectations. Excessive pressure on WSS and SWM has been partially responsible for the lake's pollution.

6. The project addressed both improved health outcomes and economic activity through development of new WSS and SWM interventions. The project's expected outcome would expand water supply,<sup>4</sup> sewerage and sanitation,<sup>5</sup> and SWM<sup>6</sup> infrastructure. Additional interventions would address enterprise resource management (ERM) with new accounting and financial systems,<sup>7</sup> geographic information system (GIS), twinning with compatible regional partners, and

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<sup>1</sup> Government of the Kyrgyz Republic, National Council for Sustainable Development. 2013. *National Sustainable Development Strategy for 2013–2017*. Bishkek.

<sup>2</sup> ADB. 2009. *Report and Recommendation of the President to the Board of Directors: Proposed Loan and Asian Development Fund Grant to the Kyrgyz Republic for the Issyk-Kul Sustainable Development Project*. Manila.

<sup>3</sup> The Ramsar Convention on Wetlands of International Importance, signed in 1971, is an international treaty for the conservation and sustainable use of wetlands.

<sup>4</sup> Directly benefiting 43,000 persons with new boreholes, water meters, and water main replacement.

<sup>5</sup> Directly benefiting 45,000 persons in the cities of Balykchy and Karakol, and will include (i) replacing 13.4 kilometers (km) of the sewer network including pumping mains to sewage treatment plants; (ii) rehabilitating pumping stations in both cities; and (iii) expanding 12 km of the sewer network to uncovered areas in Karakol.

<sup>6</sup> Benefiting 133,500 persons in all three project cities and including (i) re-engineering 42.5 hectares of existing waste dumps into sanitary landfills, and (ii) procuring vehicles and equipment for waste collection and transport.

<sup>7</sup> Directed at improved utility management, billing and collection, and financial reporting.

performance management contract. Further development was envisioned through institutional development in design and implementation; information, education, and communication (IEC); and project management.

## **B. Expected Impacts, Outcomes, and Outputs**

7. The project's expected impact was improved health of the resident population in the Issyk-Kul Oblast and environmental preservation of Lake Issyk-Kul. The project's envisaged outcome was improved urban basic services comprising sewerage, sanitation, SWM, and water supply in Balykchy, Cholpon-Ata, and Karakol.

8. The project had three outputs. Output 1 covered urban infrastructure improvement, including the rehabilitation, improvement, and expansion of WSS services; and upgrading common WSS facilities in schools, neighborhoods, health care organizations, markets, public centers, and public institutions. Output 2 covered strengthening ERM to improve service delivery and sustain investments in the long term. Output 3 supported project management and implementation activities at project management office (PMO), project implementation office (PIO), and cities. The project was to develop monitoring capacities of the Biosphere Reserve Directorate (BRD) and the Issyk-Kul Territorial Department of Environmental Protection and Forestry (IDEP) through providing equipment and training.

## **C. Provision of Inputs**

9. The project was approved on 30 September 2009. The initial implementation period was scheduled for 5 years from the fourth quarter of 2009 to the end of 2014. The implementation schedule was revised in January 2011 because of civil unrest in 2010, affecting the executing agency's project activities including procurement. As a result, the detailed design preparation was rescheduled from January to December 2011, and procurement and civil works followed from January 2012 to the end of 2014. The design and supervision consultant (DSC) was recruited in December 2010. The government's project completion report (PCR)<sup>8</sup> noted that the DSC was underfunded, had inadequate capable staff, and was unqualified to accept the assignment. The second-ranked consultant, whose bid was approximately half the cost of the top-ranked consultant, was hired. However, the winning bidder failed to include substantial elements of the terms of reference (TOR) in their bid. Subsequently, the DSC contract was terminated in June 2011, and the second DSC was engaged in June 2012. More procurement irregularities continued in 2013 including noncompliant technical bid evaluation, misrepresented qualifications of several bidders, and potential cost inflation in initial design all of which resulted in further delays.<sup>9</sup> The project was substantially completed in August 2017.

10. Project investment cost was estimated at \$37.5 million, including taxes and duties of \$3.2 million. The government requested a loan of \$16.5 million equivalent (SDR10,566,000) and a grant of \$13.5 million from the Asian Development Fund (ADF) to help finance the project. ADB anticipated financing a total of \$30 million, and the government was to finance \$7.5 million. The ADF loan financed civil works under the sewerage and water supply subcomponents, project assistance facility (PAF) components, contingencies, and financing charges. The ADF grant financed civil works and goods under sanitary landfills and community upgrading subcomponents,

<sup>8</sup> Government of the Kyrgyz Republic. 2017. *Project Completion Report: Issyk-Kul Sustainable Development Project*. Bishkek. para. 30; Appendix 2, para. 13; and Appendix 4, paras. 1 to 4.

<sup>9</sup> ADB, Central and West Asia Department. 2014. *Reconnaissance and Loan and Grant Missions to Kyrgyz Republic: Issyk-Kul Sustainable Development Project*. Back-to-office-report. 14 May (internal).

ERM and PAF components, and contingencies. The government financed 100% of the taxes and duties and 63% of the contingencies.

11. For the ADF loan, the civil works contracts amounted to \$15.4 million at project completion, compared to \$23.1 million estimated at appraisal. The cost reduction resulted from (i) the canceled sanitary landfill<sup>10</sup> and (ii) decreased cost for the sewage system of \$4.4 million, although the cost of the water supply subcomponent increased by \$0.7 million or 14.1% of the estimated cost. For the community upgrading subcomponent, the total cost was \$1.6 million, compared to the \$1.6 million estimated at appraisal. The appraisal allowed \$1.0 million of financing charges as interest during implementation, but the interest payments amounted to \$0.3 million. As a result, the ADF loan amounted to \$11.7 million against the \$16.6 million originally budgeted.

12. As the sanitary landfill was not pursued, O&M equipment and vehicles for the SWM subcomponent were added, totaling \$3.3 million against the \$1.5 million at appraisal. Equipment and materials costs were \$5.6 million compared to the \$2.7 million estimated at appraisal. Funds were reallocated from the civil works category for sanitary landfill to equipment and materials. The actual cost of the ERM amounted to \$0.8 million against the estimate of \$1.8 million. As a result, the total expenditure from the ADF grant amounted to \$12.1 million against the estimated \$13.5 million.

13. The political turmoil in early and mid-2010 initially delayed hiring consulting services. However, the initial decision to hire an unqualified, underfunded domestic DSC resulted in contract termination. The revised procurement of an international DSC took another 12 months. The rationale for hiring the initial consultants was based on a quality- and cost-based selection structure that applied an 80/20 formula between technical capacity and cost. To address this concern, the latter procurement was changed to a 90/10 evaluation mechanism. As a result, an international consulting firm associated with local consultants was engaged in June 2012, about 30 months after loan effectiveness. The limited capacity of the second DSC also failed to fulfill its responsibility in a satisfactory manner. The detailed design works were completed in June 2014, more than 1 year behind schedule, delaying the engagement of civil works contractors and suppliers. The consultants' performance for the feasibility study and design for the Second Issyk-Kul Sustainable Development Project (ISDP II) was also unsatisfactory.<sup>11</sup> They failed to complete the work, including the feasibility study, within the extended 17-month contract period ending on 30 June 2015.

14. Four international (WSS, environment, SWM, and network modeling) and three national (civil engineering, environment, and financial and economic) consultants were employed from November 2010 to June 2012. In addition, three international consultants were engaged in March 2016 to prepare the Cholpon-Ata sewerage and sanitation improvement feasibility study. The performance of each consultant was generally satisfactory.

15. Consultant services planned for the DSC were 708 person-months: 99 person-months for planning, feasibility, and design; 186 person-months for IEC; 120 person-months for management information systems; and 150 person-months for GIS. The report and recommendation of the

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<sup>10</sup> The sanitary landfill component was initially expected to be completed as a design, build, and operate (DBO) for the three small landfills. However, due in part to the small scale of the project and lack of available capacity, it was determined that alternative procurement was required. It was later determined that each landfill was inadequate for local needs and a regional landfill would be more appropriate. Land acquisition, approvals, and community compliance had made the inclusion problematic. This component was rescheduled for Phase II.

<sup>11</sup> The next phase project, ISDP II, was also prepared under ADB technical assistance. ADB. 2016. *Technical Assistance to the Kyrgyz Republic for Preparing the Second Issyk-Kul Sustainable Development Project*. Manila.

President (RRP) did not break down consulting services between international and domestic consultants. The PCR did not mention the consultant services used in person-months making it difficult to compare projected to actual usage.<sup>12</sup>

16. The project was classified category A under ADB's Environment Policy. The project's subcomponents were in the Issyk-Kul Biosphere Reserve, including several protected wetlands registered under the Ramsar Convention. As part of the project preparatory technical assistance, an environmental impact assessment was done for all subcomponents. The project did not have any land acquisition and resettlement. Due diligence reports recognized ADB's Policy on Involuntary Resettlement and applicable laws and regulations of the Kyrgyz Republic. The project did not affect indigenous people as defined under ADB's Policy on Indigenous Peoples. The project areas were homogenous, with majority Kyrgyz and other ethnic minorities comprising Kazakhs, Russians, and Uzbeks. These ethnic groups did not differ in their needs or levels of water supply or sanitation services, and all would benefit from project activities.

17. Rehabilitated toilets and washing facilities in the schools benefited 27,800 pupils, including 6,166 girls of reproductive age, in the three cities. Sanitation hygiene and reproductive health trainings focused on women's and girls' needs. About 25 gender awareness and development trainings for *vodokanal* and *tazalyk* enterprises, PMO, PIO, key municipality staff, and some subcontractors, were conducted. Increased awareness of the different needs of women and men as employees and beneficiaries allowed for (i) integration of gender-responsive provisions into organizational human resources policies, such as paid leave for family and childcare for *vodokanal* and *tazalyk* employees; and (ii) improved work conditions and sanitation facilities for male and female employees of the *vodokanal* and *tazalyk* enterprises.

18. Gender was mainstreamed in the project as designed in the gender action plan (GAP). Based on the retrospective analysis of the GAP, 11 out of 13 original gender targets were successfully implemented. The remaining three original gender targets became irrelevant due to change of project scope. The project improved women's living conditions, created employment opportunities, and reduced waterborne illnesses and associated costs. The project enhanced benefits to women through a training and awareness-raising program. As a result, women played an important role in educating their families and communities about sanitation and hygiene practices.

#### **D. Implementation Arrangements**

19. The PMO under the Ministry of Finance (MOF) at the central level and the PIO under the Issyk-Kul oblast administration at the local level were established with outsourced staff. A steering committee headed by a representative of the Prime Minister's office supervised the function and activities of the executing agency and PMO. The steering committee had to be reconstituted resulting from government transition, and it generally functioned as expected. The BRD and IDEP implemented the environmental management and monitoring plans and supported compliance with ADB and Kyrgyz Republic environmental safeguards.

20. Procurement irregularities and performance deficiencies contributed to both delays and failure to meet certain objectives. This mainly concerned the hiring of the initial DSC contractor

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<sup>12</sup> Consultant cost contained in ERM and PAF were \$1.34 million and \$5.46 million, respectively, or a total of \$6.8 million. Actual expenditure was \$0.56 million and \$5.97 million, respectively. ERM overspent the planned expense by \$0.5 million and PAF underspent planned expenditure by \$0.78 million. Net expenditure was \$0.27 million less than originally budgeted.

and the replacement's subsequent performance failures. Procurement of an unqualified and inadequately financed consultant would have been evident in qualification and in the bid evaluation. The DSC contract was completed in June 2014, more than 1 year behind schedule. The feasibility and design for the ISDP II were unsatisfactory and incomplete despite the 17-month contract extension. ADB decided to prepare the feasibility study under a separate technical assistance. Failures resulted in canceling the first procurement and terminating the second late in the project. Bid evaluation irregularities continued through the end of 2013 when ADB hired an international procurement specialist to address the matter.

21. At the beginning of project implementation, the viability of establishing a regional landfill to cover the three cities noted in the RRP was examined. The State Agency on Environmental Protection and Forestry (SAEPF) did not accept the regional landfill as the proposed design failed to include leachate interception and treatment facilities. Since establishing a regional sanitary landfill would cost more than the original allocated funds and no adequate land could be secured in time, the existing dump sites were improved. To increase the life of the dump sites and expand solid waste collection service coverage, each tazalyk strengthened its control over the dumping of waste within the designated areas, weighing waste delivered to the site, and compacting and covering accumulated waste with soil at regular intervals. Pillars with nylon mesh fences were erected around the dump sites to intercept windblown debris. Providing O&M vehicles, public waste bins, bucket trucks, mini-tractors, and landfill equipment improved the solid waste collection services. Failure of the original design to clear administrative hurdles has delayed the regional landfill development at least until the ISPD II implementation.

22. In general, all 24 conditions and covenants included in the financing agreement were complied, three covenants were partially complied, and the others were complied with delays. Among the partially complied covenants, one was concerning the steering committee created on 14 July 2011, but it met only once in the initial stages of the project. A coordination council replaced the steering committee on 30 March 2013, and held its first meeting on 14 February 2014. In 2016, the PMO requested the MOF to form a new steering committee, but in vain. The absence of a steering committee had little negative impact on project implementation since the executing agency and/or the implementing agency resolved most issues.

23. The RRP identified potential risks associated with the project: (i) city administrations' lack of commitment to undertake or implement reforms in urban and financial management, and inability to implement the financial improvement action plan; (ii) government staff's inability to implement the environmental management and monitoring plan; (iii) sudden increase in cost of construction items; (iv) the government's insufficient incentives to ensure *vodokanal* and *tazalyk* enterprises' staff efficient service delivery; and (v) the government's lack of viability gap funding<sup>13</sup> to sustain urban services.

24. The PCR did not discuss risk mitigation measures instituted, but city administrations embraced reforms in urban and financial management readily accepting new accounting and GIS software. ADB assistance on IEC functioned well to generate community acceptance. Several issues surrounding the PMO and PIO increased concerns over risk mitigation, including the accidental death of the PMO director and the difficulties experienced in finding a replacement. Efficient service delivery risks were expected to be mitigated using performance service contracts.

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<sup>13</sup> It should be noted that the term viability gap funding is normally associated with public–private partnerships, whereby government provides capital cost funding (not operational funding or subsidies) to lower construction costs, and, hence, debt service commitments to allow user charges to meet economic shadow costs under user pays agreements. In this instance, the use of the term viability gap funding is a State transfer to provide subsidies to users charge deficits or cover operating inefficiencies.

However, these contracts were abandoned due to lack of qualified parties and a lack of interest. It was unclear if a business case analysis was performed to determine the potential value for money added through these contracts or if a market sounding was accomplished. Viability gap funding as defined in the RRP is being implemented starting 2018 and continuing until 2024.

## II. EVALUATION OF PERFORMANCE AND RATINGS

### A. Relevance of Design and Formulation

25. The PCR rated the project relevant and was consistent with the Kyrgyz Republic's and ADB's strategies at the time of project formulation and completion. ADB's country partnership strategy for the Kyrgyz Republic, 2013–2017, and the National Sustainable Development Strategy for the Kyrgyz Republic, 2013–2017, shared a common goal of poverty reduction through inclusive economic growth. The project design and formulation were appropriate and focused on rehabilitating major deficiencies in the water supply, sewerage networks, and landfill sites. However, the PCR highlighted the major change in scope under the SWM component.

26. It is understood that changes in the original concept and design in the SWM component were a result of a fundamental flaw in project design. SAEPF approvals along with land acquisition were essential to the viability of the SWM component. Design changes included (i) constructing a new sewage pump station in Balykchy, as the existing building was unsuitable for rehabilitation; (ii) rehabilitating the water reservoir and pump station within the Cholpon-Ata *vodokanal* property; and (iii) canceling the re-engineering of waste dumps into sanitary landfills and the procurement of more solid waste collection vehicles and bins. While the sanitary landfills were not implemented, the project design met the immediate needs of the three cities in the context of a multi-staged development to protect the lake environment and improve people's well-being. The re-engineering resulted from local rejection of the revised SWM plan. The plan was previously agreed with the central and regional governments. However, failure to obtain buy-in from local councils at design was the driver for the scope changes.<sup>14</sup>

27. The reduced scope resulted in cost savings of approximately \$7.4 million, or 20% of anticipated cost. Project completion anticipated at the end of December 2014 was extended until the end of December 2017, approximately 8 years from loan effectiveness date.

28. Also, the project anticipated utility operation management would be improved by procuring the services of an operator under a performance-based management contract (PBMC). One of the consultants was advised to abandon this option due to potential lack of interest based on the failure to develop a regional SWM program. However, neither technical/financial analysis nor market analysis was prepared to support the conclusion of the consultant. Regionally, public–private partnerships (PPPs) including PBMC are applied in WSS, SWM, communications, and electrical power operations, among others. There is no way to amend this conclusion. However, it seems likely that a further review of the PBMC option should be undertaken to determine further interest, including the conditions under which such interest can be engaged.

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<sup>14</sup> The Central West and Asia Department (CWRD) argues that the scope changes did not prevent the project from delivering its intended outcome, and was necessary to maintain the relevance of the project in the face of the unexpected events. Those unexpected events were political changes, i.e., the revolution, change of the regime in the country from a Presidential to a Parliamentary system, and changes in legislation related to land transfers were put on hold for several years. Further, CWRD argues that the project resulted in a follow-on phase II project, the Issyk-Kul Wastewater Management Project, which builds on key development gains of the completed project.

29. Based on these major scope changes, this validation assesses the project less than relevant.<sup>15</sup> The project exposed inadequate design, including lack of thorough capacity assessment of the executing agency and implementing agency on their past experience with international aid agencies, and unclear understanding of roles and responsibilities of various government bodies and agencies. Given that the Issyk-Kul Lake region is situated in the Ramsar site biosphere reserve, it seems like an ideal project to undertake strategic environmental assessment. In addition, there was a major issue with contract packaging during the PPTA, and adequate agreement with the government on land availability for the SWM component.

## **B. Effectiveness in Achieving Project Outcomes and Outputs**

30. The PCR rated the project effective in achieving the outcome envisaged at appraisal. Upon project completion, beneficiaries' access to safe and reliable sanitation, water supply, and solid waste collection services increased in Balykchy, Cholpon-Ata, and Karakol. According to the executing agency and the baseline survey upon completion, the number of beneficiaries with access to the sewerage network and on-site sanitation increased from 45,000 in 2015 to 108,600 in 2016. The rehabilitated water production and supply system supported the supply of safe, reliable water to connected consumers. Despite the alteration in scope, solid waste collection coverage was extended to 140,000 people in 2018 against 133,500 people originally envisaged. The achievement of improved urban services in the three cities was due to the project intervention and the substantial achievement of project outputs.

31. **Output 1: Infrastructure improvement.** Achievements in subcomponents included: (a) Sewerage and sanitation—(i) access to sewerage network increased to 73,500 persons (against 45,000 target); (ii) average sewage flow increased to 13,772 cubic meters (cum)/day (target 5,500 cum/day); (iii) 4 operating sewerage pumps and 18 vehicles purchased (against target of 10 vehicles); (b) Solid waste management—(i) municipal solid waste collection expanded to 122,500 people (partially achieved against target of 133,500); (ii) 106.1 metric tons (MT) of waste collected and disposed daily (against target of 100 MT); and 41 collection vehicles were operational (against target of 22); (c) Water supply—(i) nonrevenue water (NRW) for three cities was estimated at 45% (not yet achieved given the 20% target which is unrealistic); (ii) energy savings through efficient pumping was partially achieved including the rehabilitation of six boreholes, one new borehole and three pumps; and (iii) residual chlorine at tail ends was maintained at 0.3 parts per million in two cities (target was to maintain residual chlorine between 0.2 and 0.4 parts per million); and (iv) Community upgrading: 27,800 persons, mainly teachers and students, benefited from improved water supply in 2015 (target was 23,000).<sup>16</sup>

32. **Output 2: Enterprise resource management.** This output aimed to improve information management systems, accounting and financial management, GIS, asset inventory and management, twinning and capacity building,<sup>17</sup> and performance-based service contracts for WSS and SWM. Achievements included (a) Accounting systems developed—(i) improved average operating ratio for the three cities of 1.0 in 2016 (target was 0.8 by 2015 indicating improved financial management); (ii) only two out of three cities achieved *vodokanal* collection efficiency greater than 90% (against 90% target for all three); and (iii) 32 women staff from the

<sup>15</sup> CWRD disagrees with this validation's assessment of relevance (see Appendix).

<sup>16</sup> ADB. 2019. *Project Completion Report: Issyk-Kul Sustainable Development Project*. Manila. Appendix 1.

<sup>17</sup> Included (i) improve urban infrastructure asset planning and management practices, (ii) improve human resources management, (iii) introduce measures to reduce nonrevenue water, and (iv) ensure environmentally compliant effluent discharge and sludge disposal. A twinning agreement will be entered into with a WSS utility from a developed or developing ADB member country, and specific improvement targets will agree to be achieved at the end of the twinning program.

three cities were trained in database and financial management; (b) GIS developed and infrastructure assets mapped—(i) satellite images and land cadastral maps were purchased for the three cities to be hopefully used for network model in the future and (ii) GIS maps installed in 3 *vodokanals*; (c) Management capacity enhanced—(i) twinning program was partly achieved as program initially designed with Metro Cebu Water District was canceled, instead a study tour of the management staff to New Zealand was conducted; (ii) *vodokanal* enterprise staff from two cities were trained on metering and leak rectification; (iii) the target for *vodokanal* enterprise staff to ensure safe sewage disposal will be achievable by upgrading sewage treatment plants through ISDP II; and (iv) trained 32 women staff on GIS and MIS program; and (d) awarding of the performance-based service contracts was not achieved.

33. **Output 3: Project assistance facility.** This output was to provide (i) consulting services and support for infrastructure design and implementation to strengthen project management capacity; (ii) IEC to allow government to communicate and educate beneficiaries on project outcomes, and thus stimulating demand; and (iii) project management and administration with assistance from domestic and international experts. Consultants completed IEC service in August 2017. As a result, the community and stakeholders became aware of project benefits and were educated on hygiene and sanitation projects.

34. Sanitation outcomes were achieved through replacing sewerage pipe, increasing flows, rehabilitating pumping stations, and increasing access by 73,500 in excess of the 52,500 target. Water supply coverage increases met targets, but reductions in NRW were significantly below target and not achieved. The original design failed to include a comprehensive design for NRW management over and above new bulk and household meters. The PCR implied that the prevalent NRW in the region might be still as high as 60%. Further intervention is likely needed to include an NRW management plan, comprehensive district metering zones, and realistic NRW reduction targets that consider the complexities of reducing losses.

35. Environmental concerns were effectively monitored through an environmental monitoring and evaluation plan recognizing that the project was classified category A under ADB's Environmental Policy. No serious sanitation impacts occurred during construction. Any exhaust gas, oil, fuel spills, and storage impact were mitigated. Solid waste collection services were improved through additional O&M vehicles and equipment, and pillars with nylon mesh fences were erected around the dump sites to intercept windblown debris. However, there remains a low risk of contamination of underground water from leachate. No leachate treatment system was provided. Effective implementation of operating and safeguard plans must be established to mitigate impacts on the surrounding environment.

36. No land acquisition or resettlement occurred and, hence, no reference to ADB's Policy on Involuntary Resettlement was included. Further, the project did not affect indigenous peoples as defined in ADB's Policy on Indigenous Peoples.

37. Gender issues are paramount in WSS and SWM as women have significant involvement in water use and as health-care givers. The project mainstreamed gender sensitivity in the GAP. The project included trainings in hygiene and reproductive health focusing on women and girls, and 25 gender awareness and development training program focusing on local, regional, and central governments.

38. Based on the beneficial outcomes noted above, this validation assesses the project effective.

### C. Efficiency of Resource Use

39. The PCR rated the project economically efficient. Economic internal rates of return (EIRR) calculations reviewed indicated that all cases exceeded the 12% social discount rate. However, the delays in project completion contributed to a lower than anticipated economic opportunity cost of capital. The PCR included a recalculation at completion of the EIRR used at the appraisal stage, based on updated actual costs and benefits undertaken in the RRP. The recalculation measured all components of the project WSS and SWM component.

40. In terms of project implementation, substantial reductions in outcomes were noted due in large part to the substantial delay in project completion. However, each component and the project achieved the hurdle rate that ADB recommended. The whole-of-project analysis properly weighted the individual components. There was another ADB loan<sup>18</sup> later processed in December 2018 to tackle the canceled sanitary landfill component.

41. Despite the lower than originally projected EIRR and based on ensuring that project benefits exceeded the 12% hurdle rate (each component calculated separately, lowest was 13.5% for Cholpon-Ata area for WSS; which at appraisal was 27%), this validation assesses the project efficient.

### D. Preliminary Assessment of Sustainability

42. The PCR rated the project less than likely sustainable. This rating was based on the recalculated financial rates for return (FIRR) compared to those returns noted in the RRP. The reduction was related to the delay in completion, lower user charges, and uncertainty of government support characterized as “viability gap funding,” which frankly was a state transfer and not PPP characterized as viability gap funding.

43. The FIRR for WSS and SWM only achieved 3.7% with weighted average costs of capital of 2.3% and 2.2%, respectively. It should be noted that these calculations assumed that the viability gap fund<sup>19</sup> would support tariffs. The return on investment was structured to meet full cost recovery of O&M costs and did not anticipate any debt service payment. In addition, there was no legal certainty that the viability gap funding would continue throughout the project to support low-income households based on affordability analyses. With viability gap funding, in the case of PPPs, the law requires government’s payment responsibility and budget processes are designed to comply with the legal requirements. In this instance, there is no legal instrument that requires fund appropriation to support the viability gap fund.

44. Despite the representations noted, without a legal commitment to ensure that payments are made, a process is in place to plan, budget, and enforce payment including a process to adjudicate any disputes, the viability gap funding process is uncertain. Since the viability gap funding is vital to sustainability, if it is not available, project sustainability is uncertain.

45. There are still overlaps and complicated line of responsibilities and authority on physical infrastructure funding allocations and environmental management in the central government

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<sup>18</sup> ADB. 2018. *Issyk-Kul Wastewater Management Project*. Manila.

<sup>19</sup> As earlier noted, viability gap funding is normally used for PPP projects where the fund is used to reduce capital costs and hence debt service to ensure project viability through the life of the project. In this circumstance the funding is in actuality a state transfer or direct subsidy to support user charges at a rate lower than full cost recovery.

agencies and local municipalities in the Kyrgyz Republic. This should be regularly and constantly checked and monitored by ADB during project design and implementation.

46. These low rates of return that are based on state transfers to cover the cost of O&M and without legal certainty that funds will be appropriated are unclear. This validation assesses the project less than likely sustainable.

### III. OTHER PERFORMANCE ASSESSMENTS

#### A. Preliminary Assessment of Development Impact

47. The PCR rated the project impact satisfactory. Any community's health depends largely on lifestyle. However, improved WSS is most likely to result in improved health of resident populations. That is certainly the case in this project with measurable reduction in waterborne illnesses and reductions in average annual household expenditure. Improved toilet facilities were beneficial for school-age children including reduced waterborne diseases. The PCR stated that Issyk-Kul Lake's environment improved resulting from improved sewerage and sanitation and solid waste systems. Finally, satisfaction surveys demonstrated knowledge of environmental improvements and cleanliness as a result of specialized equipment and waste collection bins.

48. During project implementation, there was only one minor negative impact on the people or the environment. The environmental control and safeguard mitigation measures were included in detailed supplementary environmental management plans that contractors need to comply to reduce the environmental impact of their operations. The municipal offices and traffic police were involved in communicating with the community on planned activities and possible restrictions in traffic flow by adopting one-way traffic provisions.

49. In view of the significant role in domestic work, family and childcare, health and hygiene maintenance, benefits to women are distinct. The positive impacts on women included improved family health, reduced workloads for women and girls, and associated monetary and non-monetary benefits.

50. Anecdotal evidence has noted that the Issyk-Kul Lake's environment has continued to deteriorate despite these interventions. There is concern that the project's outcome may have been too little, too late. However, this validation assesses that on the whole, the project is satisfactory. It is vital to sustain ADB's and government's continued commitment, especially through the Issyk-Kul Wastewater Management Project, to pursue the originally intended sustainable environmental management in the lake region.

#### B. Performance of the Borrower and Executing Agency

51. The PCR rated the performance of the executing agency, PMO, and PIO less than satisfactory. The financing agreement became effective 1 month behind schedule. As defined in the financing agreement, the MOF generally fulfilled its responsibility for project implementation. However, a lack of close communication and coordination between the MOF, municipal authorities, and ADB at the time of project preparation and implementation left the *vodokanals* and *tazalyks* not fully satisfied.

52. The changes in the SWM project scope resulted in part from MOF's inability to find an acceptable regional site for the proposed sanitary landfill. In addition, time-consuming approvals in the SWM component aggravated delays in implementation. Delays in procuring contract

packages were partly due to the limited capacity of the PMO staff assigned for bid evaluation. As for financing and disbursement, the executing agency submitted financing documents to ADB in a timely manner. The executing agency generally made a timely release of the government contribution to the project. It played an active role in all financial matters, monitoring the resource management component efficiently. For these reasons, this validation assesses the performance of the executing agency, PMO, and PIO less than satisfactory.

### **C. Performance of the Asian Development Bank and Cofinanciers**

53. The PCR rated ADB's performance satisfactory. ADB dispatched numerous missions to address the delays and the change in scope of the SWM component. Review missions made every effort to address and solve problems that they were confronted with as well as hiring consultants to assist implementation. The PCR noted implementation and decision-making delays as implementation monitoring was conducted in the home office rather than at the resident mission.

54. Despite ADB's continuous missions and attempts to address problems as they occurred, significant delays and changes in the project scope resulted from project preparation misunderstandings and several procurement irregularities. Failure at the project's inception had lasting and material impacts on project effectiveness. The PCR indicated that a lack of close cooperation between the MOF, municipal authorities, and ADB during project preparation and implementation was the reason for the *vodokanals* and *tazalyks* not being fully satisfied. However, ADB due diligence requires a full understanding of any issues and risks that may arise before funding can be approved. This clearly indicates that results on the ground were inconsistent with expectations.

55. Some delays were clearly beyond ADB's control, but the failure to adequately address the initial procurement irregularities that resulted in the dismissal of the initial DSC resulted in further procurement deficiencies. Eventually, these were addressed by hiring an international procurement specialist. ADB was responsible to ensure that all ADB procurement procedures were followed and chosen contractors were financially and technically capable of performance. The initial DSC procurement chose a contractor whose bid was almost half of the price of the highest rated technical proposal. It was later learned that the winning bidder failed to include a significant portion of the TOR in its bid. In addition, the winning bidder had never completed a project of the size and scope required and its financial and staff capacity was inadequate for the size of this venture. To address the irregularity, ADB changed the quality- and cost-based selection evaluation criteria from 80% quality and 20% cost (80/20) to 90/10 in the procurement of the replacement.

56. The re-procurement resulted in a 1-year delay not including the time it took to procure the initial DSC or the 6 months of operation until dismissal. The misprocurement was determined to be a result of the unavailability of the national procurement specialist. However, the errors in qualifying bidders, analyzing the technical proposal, or determining if the financial proposal included all elements and pricing any elements of the TOR that were not included should have been evident. ADB did not respond in a manner that would have ensured that no future failures would occur. Instead, further procurement irregularities occurred in 2013. At that time, ADB addressed procurement by ensuring that the national procurement specialist participated in all procurement activities and managed the bid evaluation process. ADB also hired a full-time international procurement specialist in January 2014.

57. To support PMO operations, ADB hired several international consultants. The SWM specialist was hired to review the SWM sanitary landfill proposed as part of the project design. The SWM specialist found that the initially proposed regional landfill was infeasible and land had yet to be acquired for the landfill site. Also, community opposition was likely to make land acquisition problematic. The SWM proposed several alterations to the project scope that, if implemented, would provide improved SWM for substantially lower cost and 20% reduction in cost. Scope changes occur regularly in all projects. However, such significant changes are unusual. The project design should have determined that (i) lower cost alternatives were available to meet current needs, (ii) land availability was certain, and (iii) community opposition had been addressed during loan appraisal.

58. For these reasons, this validation assesses the performance of ADB less than satisfactory.

#### **D. Others**

59. Delays in approval process resulted from project monitoring by various departments in ADB headquarters. The first request for extension of project completion took more than 1 year. Approvals were expedited when missions were fielded. The transfer of project administration from ADB headquarters to the Kyrgyz Republic Resident Mission in March 2016 would likely have expedited approvals. Disbursements from the loan and grant accounts were made in a timely manner, following the submission of withdrawal applications by the executing agency.

### **IV. OVERALL ASSESSMENT, LESSONS, AND RECOMMENDATIONS**

#### **A. Overall Assessment and Ratings**

60. The PCR rated the project successful and relevant. However, the change in scope to eliminate the re-engineering of the waste dumps into sanitary waste dumps, while mitigated by increased collection vehicles and waste bins, lower waste management investments than anticipated to meet economic needs, and the failure to pursue the PBMC without justification through either technical financial or market analysis, led to the conclusion that the project was less than relevant.

61. The project was rated effective as outcomes achieved the thresholds noted in the design and monitoring framework (DMF), despite the reduced recalculated EIRR. While project completion delays contributed to the EIRR reduction, the EIRR still exceeded the ADB-recommended economic opportunity cost of capital. The project was also rated less than likely sustainable. The FIRR was marginal and dependent on the viability gap fund, which is neither legally mandated nor certain to be budgeted annually. Also, there was no process in place to determine the size of the fund or how it will be disbursed. The development impact was rated satisfactory.

62. The performance of the borrower and executing agency was rated less than satisfactory. The deficiency stems from a lack of coordination between the MOF, municipal authorities, and ADB during project preparation. The PCR rated ADB performance satisfactory, however, ADB performance was less than satisfactory because the coordination issues noted between MOF and ADB were not addressed prior to loan appraisal approval and procurement irregularities were not addressed satisfactorily.

63. Two of the four core criteria were rated less than satisfactory (less than relevant and less than likely sustainable) and the other two rated satisfactory (effective and efficient). Overall, based

on the weighted average coefficient of 1.5, this validation assesses the project less than successful. The PCR did not reflect the consequences of the delays. The Issyk-Kul Lake residents and tourists were expected to be the beneficiaries of these interventions, but anecdotal evidence has shown that environmental degradation of the lake has continued rapidly. The project met DMF targets. However, it must be taken in the context of the almost 3-year delay from initial completion.

### Overall Ratings

Validation Criteria	PCR	IED Review	Reason for Disagreement and/or Comments
Relevance	Relevant	Less than relevant	The major scope changes altered SWM interventions. PBMC was abandoned.
Effectiveness	Effective	Effective	
Efficiency	Efficient	Efficient	
Sustainability	Less than likely sustainable	Less than likely sustainable	
<b>Overall Assessment</b>	<b>Successful</b>	<b>Less than Successful</b>	
Preliminary Assessment of Impact	Satisfactory	Satisfactory	
Borrower and executing agency	Less than satisfactory	Less than satisfactory	
Performance of ADB	Satisfactory	Less than satisfactory	Procurement and project design negatively impacted implementation. While reasons for delay were beyond ADB control, ADB's reaction to complications must be decisive and due diligence comprehensive.
Quality of PCR		Satisfactory	Para. 70.

ADB = Asian Development Bank, IED = Independent Evaluation Department, PBMC = performance-based management contract, PCR = project completion report, SWM = solid waste management.

Source: ADB (IED).

## B. Lessons

64. The PCR identified the following lessons:

- (i) **Project design and formulation.** The concerns expressed in the PCR parallel the issues articulated above. The PCR noted that the change in scope in SWM resulted from SAEPF's disagreement to the sanitary landfills and lack of suitable land. Yet the PCR noted that the DMF did not detail specific linkages between outputs and targets such as NRW. It is agreed. However, the flaw resulted in both delays and less than satisfactory outcomes.
- (ii) **Project implementation management and capacity building.** The PCR noted that the PMO and PIO were staffed with outsourced experts and no government officials were included. Despite outsourcing, the PMO and PIO lacked the knowledge to fulfill their roles.
- (iii) **Employment of consultants and procurement.** The PCR noted that the selection method and evaluation failed to follow established rules. More precise and effective procurement was needed including rationalizing the packages to encourage participation.

- (iv) **Cost estimates.** Cost estimates were prepared based on exchange rates prevailing since 1991. Rates need adjustment and methods modernized.
- (v) **Materials.** ADB rules require all goods, works, and services originate from member countries. The PCR noted that due to the long dependency of the Kyrgyz Republic on the former Soviet Union, equipment is still procured from the Russian Federation. The PCR noted that a waiver should be temporarily issued to allow procurement from the Russian Federation. It is agreed that the waiver should be temporary. However, limits should be clearly determined and procedures put in place to encourage procurement from member countries. It is only in rare and exceptional cases that this is allowed, even in former Soviet countries in the region.
- (vi) **Nonrevenue water.** NRW reduction has not been substantially reduced. The PCR attributed some of this to the failure of the twinning program since the partner chosen was culturally unacceptable. It is not clear how this concerns NRW reduction. However, recommendation for an NRW management program that includes a zoning approach is on point.
- (vii) **Land acquisition.** The PCR indicated that land acquisition was discussed and agreed by central and municipal administration. However, land acquisition did not occur because of local council rejection. Land acquisition is always problematic and future projects should identify potential impediments and attempt to address this at appraisal rather than after approval.
- (viii) **Institutional issues.** Project implementation delays and sustainability concerns require closer engagement of local governments and *vodokanals* and *tazalyks* in project management.

65. Additional lessons identified by this validation include:

- (i) **Twinning.** Twinning of utilities can have a positive impact on utility performance and specific results. However, two issues arise concerning compatibility and outcome targets. In this instance, it was always uncertain whether the Metro Cebu Water District would be a compatible match. Both language and religion disparities made the match problematic, and twinning program works effectively where a targeted outcome is expected. One example is the assistance in local mapping for the implementation of a GIS program. In this instance, a more thorough assistance was needed to improve management and efficiencies. General experience has shown that more long-term technical assistance through bilateral donor funding is more specific to the needs of the utility. A more thoughtful and cooperative approach where ADB provides hard inputs and another bilateral donor provides the soft inputs is warranted.
- (ii) **Nonrevenue water.** Realistic outcomes in NRW normally suggest that NRW reduction take time and are not capital intensive or asset specific. It requires a plan, funding, capacity building, and incentives for utility operators to understand the benefit of NRW reduction. Incentives must be devised for the utility, its managers, and employees.
- (iii) **Consultant procurement.** Project procurement activities resulted in three misprocurements and the final procurement of a DSC that failed to perform. A thorough and thoughtful review of those procurement results and what could have been done to avoid the negative outcomes is needed. To seek ways to avoid recurrence, these issues are paramount: (a) ensuring proper pre-qualification of bidders; and (b) defining clear evaluation guideline that will allow for skeptical

review of bids that are well below a defined threshold<sup>20</sup> to ensure that the winning bidder has the financial and technical capacity to perform.

- (iv) **Environmental impact assessment.** To justify and strengthen ADB's continued commitment and presence in the Issyk-Kul region, strategic environmental impact assessment should be considered to clearly provide ADB's value addition.

### **C. Recommendations for Follow-Up**

66. Selecting twinning partners requires both an understanding of compatibility and is targeted to specific outcomes. ADB has for many years encouraged twinning programs between WSS utilities. It would be wise to review the lessons learned from successful and unsuccessful partnerships before engaging any future twinning.

67. Where capacity building on a utility-wide level is needed, a cooperative approach with other donors will usually yield better results. Encouraging donor coordination to address hard and soft components of service delivery is normally the most effective approach.

68. ADB approval is required for all procurements. Ensuring that procedures and internal capacity are available to meet procurement requirements is essential. However, where errors occur, addressing errors, poor performance, or inconsistencies with contractual requirements require rapid and decisive action.

## **V. OTHER CONSIDERATIONS AND FOLLOW-UP**

### **A. Monitoring and Reporting**

69. Monitoring and reporting to ADB and higher government authorities on the project implementation progress in compliance with DMF was in place as well as project performance management system reports, baseline survey reports, and the PCR. Audited project financial statements were prepared and submitted to ADB with the assistance of an audit specialist in a timely manner.

### **B. Comments on Project Completion Report Quality**

70. This validation assesses the quality of the PCR satisfactory. The PCR was clearly written, consistent with the appropriate guidelines, and provided adequate discussions on key features of the project, including safeguards, fiduciary issues, and loan covenants. The DMF was clear and supported justification of the ratings.

### **C. Data Sources for Validation**

71. This validation was based on review of the RRP, loan review mission reports, economic and financial analyses, and the government's PCR.

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<sup>20</sup> In this instance, if the lowest bid was say 10% below any other bid, offering the bidder the option of forfeiting the bid bond to allow the bidder to walk away without incurring costs and penalties for poor performance.

**D. Recommendation for Independent Evaluation Department Follow-Up**

72. A program performance evaluation report should be prepared and evaluated against the projects impacts, inputs outputs and outcomes at appraisal. Particular attention should be given to assessing the effects of delays in implementation.

## **APPENDIX: LINKED DOCUMENTS**

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PCR Validation Report: Kyrgyz Republic: Issyk-Kul Sustainable Development Project

a. CWRD Comments on Final PVR

Document available upon request.

b. IED Response to CWRD Comments

<https://www.adb.org/sites/default/files/evaluation-document/623291/files/ied-response-cwr-d-comments-pvr-670.pdf>