Validation Report

Reference Number: PCV: KAZ 2009-07
Project Number: 31170
Loan Numbers: 1592-KAZ and 1593-KAZ(SF)
December 2009

Kazakhstan: Water Resources Management and Land Improvement Project

Independent Evaluation Department

Asian Development Bank

ABBREVIATIONS

ADB	–	Asian Development Bank
EA	–	executing agency
IED	–	Independent Evaluation Department
PCR	–	project completion report
RRP	–	report and recommendation of the President
VDW	–	vertical drainage well
WUA	–	water users' association

Key Words

adb, asian development bank, drainage, environmental protection, independent evaluation department, institutional strengthening, integrated pest management, irrigation, monitoring and evaluation, project completion report, salinity, training, validation

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PROJECT COMPLETION REPORT VALIDATION

A. Basic Project Data		**PCR Validation Date:**	December 2009	
Project Number: **Loan Numbers:**	31170 1592-KAZ and 1593-KAZ(SF)		**Approved**	**Actual**
Project Name:	Water Resources Management and Land Improvement Project	**Total Project Costs** ($ million):	55.1	50.5
Country:	Kazakhstan	**Loan/Grant** ($ million): (SDR equivalent)	40.0	30.4
Sector(s):	Agriculture and natural resources	**Total Cofinancing** ($ million):	0	0
ADB Financing ($ million):	**ADF:** 10.0	**Borrower** ($ million):	15.1	20.1
	OCR: 30.0	**Beneficiaries** ($ million):	0	0
Cofinanciers:	None	**Others** ($ million):	0	0
Approval Date:	17 December 1997	**Effectiveness Date:**	23 June 1998	11 August 1998
Signing Date:	25 March 1998	**Closing Date:**	30 June 2003	31 December 2006
Project Officers:	**Name:**	**Location (HQ or RM):**	**From:**	**To:**
	G. Bestari	HQ	December 1998	May 2001
	T. Bayarsaihan	HQ	June 2001	August 2004
	P. Bozakov	HQ	September 2004	April 2006
	T. Bayarsaihan	HQ	May 2006	September 2006
	T. Miyazato	HQ	October 2006	November 2007
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Validator:	D. Moffatt, Consultant	**Director:**	R. B. Adhikari, IED1	
Quality Control Reviewer/Peer Reviewer:	S. Shrestha, Evaluation Specialist, IED1			

ADB = Asian Development Bank, ADF = Asian Development Fund, HQ = headquarters, IED1 = Independent Evaluation Division 1, OCR = ordinary capital resources, PCR = project completion report.

B. Project Description (summarized from report and recommendation of the President[1])

(i) **Rationale.** Southern Kazakhstan's privatized state farms were badly deteriorating because of poor irrigation and drainage systems, which led to waterlogging, salinity, and consequent reduction in yield. These systems were also impacting the environment, with flooding leading to water contamination and ensuing disease (at the local level) and increased extraction of water from the Aral Sea (at the regional level). In the country's proposed continuing privatization process, irrigation management is to be turned over to the beneficiaries, but this can only be successfully accomplished if institutions managing the associated systems were restructured and physical facilities were rehabilitated. The Water Resources Management and Land Improvement Project (the Project) was designed to address these issues.

[1] ADB. 1997. *Report and Recommendation of the President to the Board of Directors on a Proposed Loan and Technical Assistance Grant to Kazakhstan for the Water Resources Management and Land Improvement Project*. Manila (Loans 1592-KAZ and 1593-KAZ, for $40 million, approved on 17 December).

(ii) **Impact.** The Project sought to increase and stabilize average farm family income and to improve and protect the environment.

(iii) **Objectives or expected outcomes.** The Project supported the Government of Kazakhstan's farm privatization policy. Irrigation management was to be turned over to newly established and trained water users' associations (WUAs), supported by strengthened government organizations. Irrigation and drainage systems were to be rehabilitated and improved, and private farms would be able to take advantage of new market opportunities while also taking ownership of the investments, requiring them to take responsibility for cost recovery.

(iv) **Components and/or outputs.** The Project comprised two components made up of five subcomponents. Component 1 focused on institutional support, monitoring, and evaluation. Subcomponent 1a comprised institutional support and training for WUAs, project management office and project implementation unit, local hydrogeological ameliorative expeditions, *raion*[2] water management staff, and local agronomists. Subcomponent 1b focused on monitoring environmental conditions in the project area; monitoring and evaluating economic, social, and health impacts; and assessing progress of integrated pest management.

Component 2 focused on irrigation and drainage improvement. Subcomponent 2a sought to replace or rehabilitate and maintain the system of vertical drainage wells (VDWs) and to rehabilitate the network of on-farm and interfarm collector drains. Subcomponent 2b, concerned with interfarm irrigation water supply system improvement, focused on diagnostic studies and hydraulic modeling, rehabilitation of structures and canal lining, and installation of weather stations and flow measurement devices. Subcomponent 2c, sought to optimize on-farm water and land management, was to conduct diagnostic studies, modeling, and reclamation of salt-affected land; improve on-farm irrigation; level land; and construct flow-control and measurement structures.

C. Evaluation of Design and Implementation (project completion report assessment and validation)

(i) **Relevance of design and formulation.** The project completion report (PCR)[3] assessed the design and formulation of the Project as being appropriate. It was aligned with the country strategy and program of the Asian Development Bank (ADB), the Government's strategy for improving the efficiency of agricultural water use, and met the concerns of the Committee for Water Resources over adverse environmental impacts from overexploitation of water resources and inefficient water use.

(ii) **Project outputs.** For component 1, the Project successfully established WUAs in the form of 22 rural consumer cooperatives and three water user federations, covering all users except those who receive water directly from the main canal. The PCR recorded a very high level of farmer participation in WUAs activities. The PCR reported that training targets were met, and a WUA support team was established and provided ongoing support. As a result, these WUAs now manage, operate, and maintain all irrigation and drainage networks in the project area, collect irrigation service fees, and have improved operations and maintenance. Validation essentially concurs with this positive view of achievements under this subcomponent. It should be noted, however, in the back-to-office report of the first project completion review mission (19–28 June 2007), issues were reported regarding possible inadequate provision for operation and maintenance, cessation of support to WUAs at the end of the Project, lack of awareness of farmers' cost recovery responsibilities, and the need for better agricultural advisory services. Various review missions also reported that the WUAs lack equipment required to carry out maintenance on the canals.

[2] A *raion* (or rayon) is a type of administrative unit of some post-Soviet states. The term, which is from French rayon 'honeycomb, department,' describes both a type of a subnational entity and a division of a city, and is almost always translated as "district." A *raion* is usually an entity two steps below the national level.

[3] ADB. 2007. *Project Completion Report on the Water Resources Management and Land Improvement Project in Kazakhstan*. Manila.

The PCR also confirmed a program of training, a baseline survey in 2000, and an initial impacts survey in 2004, but noted little systematic reporting on socioeconomic or environmental conditions. The PCR gave no details of the hydrogeological ameliorative expedition that was supposed to monitor water levels, water quality, and soil quality. Overall, it appears that despite the prominence given in the report and recommendation of the President (RRP) to a comprehensive monitoring and evaluation program, it did not occur in this Project.

Under component 2, 161 new VDWs were constructed (as compared to the RRP target of 250), but the PCR stated that the number is sufficient for the target area. The PCR also reported the rehabilitation of 245 water level monitoring wells; these are not mentioned in the RRP. The Project considerably exceeded its target for drainage channels (239 kilometers [km] against a target of 50 km), was very close to the target for drainage collectors (410 km against a target of 440 km), and greatly exceeded its target for rehabilitation of interfarm drainage collectors (410 km against a target of 130 km). Validation concludes that this subcomponent was successfully implemented, though it may be noted that ADB intervention was needed at the midterm review to accelerate progress and to bring about needed improvements in construction quality.

The PCR described subcomponent 2b as being an overall successful intervention. A total of 2,250 irrigation structures were planned in the RRP, and nearly 5,000 were improved. In addition, 318 km of water channels were constructed compared to a target of 7 km. The PCR offered no explanation for these differences. It should also be noted that the cost of this subcomponent rose from $3.7 million to $15.7 million, which may, in part, be a result of the PCR design and monitoring framework lumping on- and interfarm irrigation structures together, but costs for subcomponent 2c also rose. Therefore, it appears that the original project design misjudged the scale of the rehabilitation required for the irrigation supply system. The framework also showed that the diagnostic study was never done, that only one of four automatic weather stations was installed, and that there was no information on the number of flow measurement devices installed.

In addition, the framework stated that no diagnostic studies were carried out under subcomponent 2c, but the Project developed a computer model to optimize on-farm water use and distribution. The model demonstrated a need for land leveling over 2,200 hectares (ha) in phase 1, although the RRP provided for 5,000 ha of leveling. However, farmers baulked at the cost, and no land leveling was done. The proposed leaching identified in the model (though not provided for in the RRP) was also not carried out. Deep ripping that was part of project design was not done despite being specified in the implementation contracts. Twenty km of flumes were installed as provided for in the RRP, and as stated above, several irrigation structures were installed.

(iii) **Project cost, disbursements, borrower contribution, and conformance to schedule (as relevant to project performance).** The PCR presented an analysis of project costs and disbursements but did not discuss the considerable escalation in the cost of the two subcomponents for irrigation improvement. The actual cost of subcomponents 2b and 2c was $23.75 million, compared to the appraisal estimate of $7.50 million. Part of this may be offset against a reduction in the cost of subcomponent 2a from an appraisal estimate of $22.42 million to an actual cost of $18.93 million. Still, component 2 cost nearly $13 million more than the appraisal estimate—a more than 40% increase. The actual cost of component 1 was close to appraisal at $3.22 million. There would be merit in further analysis of these major changes in project costs.

The PCR presented an analysis of loan disbursements and reallocations—including reference to partial loan cancellation—but did not give an annualized schedule of disbursement. Though not stated in the PCR, it appears that the large increase in the costs of the interfarm and on-farm works has essentially been funded from the original unallocated line of the loan. The PCR should have explained this more clearly. The partial loan cancellation appears to have been offset by an increased borrower contribution. The total cost of the Project was $50.5 million,

compared to the appraisal estimate of $55.1 million. It should be noted that the actual base cost of the Project increased from $33.7 million to $45.9 million, the reduction in the total cost coming from not using all contingencies. The PCR considered implementation to have been *satisfactory*, and it presents the original proposed implementation schedule but no actual work schedule. Although the PCR gave various reasons for the delay, it is not possible to support a *satisfactory* rating for a project that should have taken 5 years but took more than 8 years to complete.

(iv) **Implementation arrangements, conditions and covenants, related technical assistance, and procurement and consultant performance.** The PCR noted that changes in the Ministry of Agriculture's administration structure contributed to project delays. However, it concludes that implementation was carried out largely through consultants. Although stating that most covenants were complied with, the PCR commented adversely on many aspects of management. Validation suggests that this should be taken into account in considering the performance of the Executing Agency (EA). The PCR regarded the associated advisory and operational technical assistance as having met its objectives, backing this up with the observation that important new laws have largely derived from the technical assistance recommendations. While procurement complied with ADB procedures, the process of appointing contractors for the two phases of construction took 43 and 39 months, respectively, and was a major factor in the much-delayed implementation schedule. The PCR deemed consultant performance as *satisfactory*, but validation finds no reason to qualify this assessment. The PCR provided a thorough review of both contractors' performance, concluding that the phase 1 contract was very poorly executed, and the phase 2 contractor—although performing considerably better—was still deficient. Some of this related to inadequate supervision by the EA, combined with pressure by the EA on contractors to maximize use of subcontractors. Validation has also taken note of the observation that "the importance of deep ripping was emphasized to the EA during the midterm review (May 2004), but despite its assurances, no action was or has been taken to address the problem" (p. 12, para. 34 of the PCR).

(v) **Performance of the Borrower and Executing Agency.** The PCR stated that the EA generally performed adequately. It then noted the considerable delays caused by EA, problems with the flow of funds, inadequate construction supervision, and reluctance to reject unacceptable works. Validation further draws attention to previous comments relating to the pressures brought by the EA relating to subcontracting, its failure to address the lack of deep ripping, the irregularity of interministerial committee meetings, and the lack of effective project oversight by the regional coordinating committees. The PCR also noted that implementation was largely carried out by the consultants. Despite all of this, the PCR rated the performance of the Borrower and EA as *satisfactory*. While the Borrower met its financial obligations and indeed increased its contributions, the problems and delays in project implementation have been largely attributed to failures of the EA. Therefore, it is proposed that performance should be downgraded to *partly satisfactory*.

(vi) **Performance of the Asian Development Bank.** Between inception and project completion, ADB carried out nine review missions, one midterm review, and three additional missions—a total of 13 missions over 8 years, which appears to be adequate. Validation has noted that these involved five different project officers, a number that is not unreasonable over an 8-year period and particularly since the majority of reviews were carried out by just three project officers. While the PCR stated that the missions sought to accommodate changing circumstances, it also concluded that ADB was, in part, to blame for some of the project delays, limited monitoring, and failure to ensure that vital land improvement measures were undertaken. The PCR, however, rated its overall performance as *satisfactory*. Yet this ignores the project design deficiencies that led to such major discrepancies between planned and actual outputs and, effectively, a low quality of entry. Therefore, the performance of ADB should be downgraded to *partly satisfactory*.

D. Evaluation of Performance (project completion report assessment and validation)

(i) **Relevance.** The PCR rated the Project as *highly relevant*. The Project tackled institutional and infrastructure problems that were leading to a decline in farm productivity and living standards. Validation concurs with these aspects of the assessment. However, there were obviously failures in the project design, resulting in large discrepancies between design and implementation. This implies that the project design did not adequately estimate nor analyze the needed interventions. This is a project design issue, which is one of the indicators for assessing relevance. Given these concerns, it would be inappropriate to rate it as *highly relevant;* this rating is downgraded to *relevant*.

(ii) **Effectiveness in achieving outcome.** The PCR noted the Project's effectiveness in improving the physical infrastructure and management of irrigation and drainage and hence increasing agricultural yields and farm incomes. However, then it states, "there is no evidence that the Project achieved its objectives to increase water use efficiency and to reduce land degradation" (p. 14, para. 46 of the PCR). Validation can find no further explanation or discussion of this point, other than the comment in PCR that water use has increased. The PCR still rated the Project as *effective*.

The PCR noted that where land underwent deep ripping, yields increased by 30%–35%. It also stated that "the importance of deep ripping was emphasized to the EA during the midterm review (May 2004), but despite its assurances, no action was or has been taken to address this problem" (p. 12, para. 34 of the PCR). Overall, it is clear that inadequate attention was given to the land management aspects of the Project, and without these, it could not reach its full potential. The PCR stated, "the decision taken not to implement these land improvements likely limited the improvements in yields and potential savings in water use" (p. 4, para. 15 of the PCR). No evidence is put forward to indicate that there had been any increase in water use efficiency or reduction in land degradation. On this basis, validation downgrades the rating to *less effective*.

(iii) **Efficiency in achieving outcome and outputs.** While the economic internal rate of return at 15.6% is well below the appraisal estimate of 25.6%, the PCR still rated the use of resources by the Project as *efficient*. The decrease is attributed to lower cotton prices and Kazakhstan's strengthening currency, with slightly lower-than-anticipated yields. The efficiency of the Project in terms of use of its financial resources was compromised by contracting procedures that resulted in long delays, and the poor performance of the first contractor and—to a much lesser extent—the second contractor. Despite these difficulties, the economic internal rate of return does exceed the opportunity cost of capital and qualifies for an *efficient* rating.

(iv) **Preliminary assessment of sustainability.** The PCR rated the Project as *less likely to be sustainable,* citing the lack of financial provision for long-term operation and maintenance at each level of the irrigation and drainage system, unavailability of specialized services needed for maintenance and repair of the VDWs, and cessation of technical support for WUAs that came with the termination of the Project. The Validation concurs with this assessment.

(v) **Impact (both intended and unintended).** Increased yields, increased income, and reduced poverty are direct impacts of the Project, and the PCR listed seven additional spin-off impacts. However, reference should be made to the earlier statement regarding increased water use and the negative impact that this has on the hydrology of the Aral Sea.

E. Overall Assessment, Lessons, and Recommendations (validation of PCR assessment)

(i) **Overall assessment.** The PCR rated the Project as *satisfactory* while acknowledging that it suffered serious delays and did not meet its environmental goal and objectives. However, validation rates the Project *partly successful* due to concerns over sustainability, lack of land management, and negative impact on the Aral Sea.

(ii) **Lessons.** Validation fully endorses the important lessons given in the PCR. It also notes the fundamental importance of clear reporting in review missions, back-to-office reports, and PCRs of variations between project design and implementation and associated reasons.

(iii) **Recommendations.** Recommendations in the PCR were split into those that are project-related comprising (a) funding of environmental monitoring, (b) setting irrigation service fees at a level that will sustain adequate operation and maintenance, and (c) reconciling accounts and timing of the project performance evaluation report. General recommendations essentially reflect the lessons learned. Validation regards these as all being relevant to this and any future similar project.

F. Monitoring and Evaluation Design, Implementation, and Utilization (PCR assessment and validation).

Monitoring and evaluation was a specific project subcomponent, which covered environmental monitoring of the project area and monitoring and evaluation of economic, social, and public health benefits. The RRP attributed resources in the form of consultancy, equipment, and provision of a sociologist and economist to support the *raion*. While the PCR stated that the project area's environment was monitored and that economic and statistical staff capacity was strengthened, it also stated that there was little systematic reporting on socioeconomic or environmental conditions. It also reported that only one of the four proposed automatic weather stations was purchased. However, a laboratory was established; thus, the PCR was able to compare physical conditions, yields, and incomes.

Overall, there were encouraging signs of a monitoring and evaluation process, and the PCR recommended that the Government ensure that a specific budget be made available for ongoing environmental monitoring by the laboratory established. However, the monitoring and evaluation process was not wholly satisfactory and did not meet its intended targets. Its status as a specific subcomponent with resources directly attributed to it does appear to have led to a more positive approach to monitoring and evaluation than in many other projects.

G. Other (e.g., Safeguards, Including Governance and Anticorruption; Fiduciary Aspects; Government Assessment of the Project, as Applicable) (PCR assessment and validation).

None.

H. Ratings	PCR	IED Review	Reason for Disagreement/Comments
Relevance	Highly relevant	Relevant	The Project addressed critical issues affecting livelihoods and the environment, but the design did not appear to accord with implementation, compromising relevance.
Effectiveness in Achieving Outcome	Effective	Less effective	The validation rating is downgraded due to increased water use and failure to achieve the intended standards of land management.
Efficiency in Achieving Outcome and Outputs	Efficient	Efficient	The efficiency was compromised by poor contracting procedures that resulted in long delays and the poor performance of the contractors, but the economic internal rate of return still exceeded the opportunity cost of capital.
Preliminary Assessment of Sustainability	Less likely to be sustainable	Less likely to be sustainable	
Borrower and EA	Satisfactory	Partly satisfactory	The PCR attributed much blame to the EA for the long delays in implementation, inadequate or inappropriate supervision of

H. Ratings	PCR	IED Review	Reason for Disagreement/Comments
			construction, failure to act on land management requirements, and failure to put in place the support needed for sustainability. On this basis, it is difficult to sustain a *satisfactory* rating.
Performance of ADB	Satisfactory	Partly satisfactory	The PCR blamed ADB for failing to facilitate contracting procedures and to ensure that land improvement measures were undertaken. ADB must also take some responsibility for project design, which clearly did not meet what was ultimately required.
Impact	Not rated	Moderate	The Project has had significant positive impact, but it should be noted that it has increased the extraction of water from the Aral Sea.
Overall Assessment	Satisfactory	Partly successful	There are concerns over sustainability, lack of land management, and negative impact on the Aral Sea.
Quality of PCR		Generally good	

I. Comments on Project Completion Report Quality

The PCR adequately addressed most aspects of the Project and provided a good analysis of and insight into the issues involved. It clearly recognized project weaknesses, strengths, and organizations' roles, though it did not always reflect the weaknesses in the ratings given. The PCR included a valuable design and monitoring framework showing achievements in relation to the RRP targets. There are, however, some important areas in which more information or comment should have been provided. In particular, the PCR was deficient in examining the considerable increase in the cost of the interfarm and on-farm irrigation system, reasons for increased water use, and why the Project failed to reduce land degradation. The PCR would also have benefited from more detail of the monitoring and evaluation design and execution.

J. Recommendation for Independent Evaluation Department Follow-Up

None.

K. Data Sources for Validation

Data sources for this validation report included back-to-office reports, project files, PCR, and RRP.

REGIONAL DEPARTMENT'S RESPONSE TO THE PROJECT COMPLETION REPORT VALIDATION REPORT

On 23 February 2009, the Independent Evaluation Department received the comments from the Energy and Natural Resources Division of the Central and West Asia Department stating that the department had no objection to the Validation's rating.