

1. Project Data:		Date Posted : 12/29/2013	
Country:	Lebanon		
Project ID:	P103885	Appraisal	Actual
Project Name:	Bekaa Emergency Water Supply Project	Project Costs (US\$M):	15.0
L/C Number:		Loan/Credit (US\$M):	15.0
Sector Board:	Water	Cofinancing (US\$M):	
Cofinanciers:		Board Approval Date:	04/02/2007
		Closing Date:	05/20/2010
Sector(s):	Water supply (95%); Sub-national government administration (5%)		
Theme(s):	Other human development (50% - P); Pollution management and environmental health (25% - S); Environmental policies and institutions (25% - S)		
Prepared by:	Reviewed by:	ICR Review Coordinator:	Group:
Maha J. Armaly	Robert Mark Lacey	Soniya Carvalho	IEGPS1

2. Project Objectives and Components:

a. Objectives:

The Trust Fund* Grant Agreement (TFGA) states the project development objectives as follows: “To improve health conditions of the population in the Project Selected Area, through the provision of non-contaminated water in increased quantities by completely rehabilitating the water network.”

According to the Technical Annex to the request for Grant approval, “the key development objective [DO] of the proposed government program for the West Beka’a and the World Bank-financed project is to alleviate the precarious conditions of the area’s water supply system which has been further aggravated by the recent hostilities and long term neglect. More specifically, the project is expected to improve health conditions of the population of the West Beka’a through the provision of non-contaminated water in increased quantities by completely rehabilitating the area’s network. The project should also contribute to increased sustainability of the Beka’a Regional Water Authority [BRWA] through the regularization/metering of large proportion of beneficiaries in the area which are currently illegally tapping water from the network.”

This review is based on the development objectives as stated in the TFGA.

*The Lebanon Trust Fund set up by the World Bank and the Kuwaiti Government, administered by the Kuwait Fund

for Arab Economic Development

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

No

c. Components:

The project includes two components:

Component I: Construction of Water Networks and Facilities (appraisal cost US\$13.75 million, actual cost US\$13.89 million) including (i) drilling of approximately six water wells in the Chamsine spring basin; (ii) rehabilitation of the Chamsine Spring Catchment; (iii) construction of regional reservoir in the village of Anjar and two distribution reservoirs in the villages of El Khiara and Haouche El Harime; (iv) the construction of new pumping station near the Chamsine spring basin; (v) the construction of approximately 29 kilometers (km) of transmission mains; and (vi) construction and/or rehabilitation of approximately 80 km of water distribution networks and house connections of villages.

Component II. Technical Assistance (appraisal cost US\$0.8 million, actual cost US\$0.60 million): Support for management and implementation including (a) Design and supervision of construction; (b) implementation and reporting on Environmental Management Plan (EMP), (Resettlement Framework Policy (RPF), and Resettlement Action Plans (RAP), (c) technical audits.

Contingencies were estimated at US\$0.45 million at appraisal and US\$0.51 million at completion and are not included in project costs.

d. Comments on Project Cost, Financing, Borrower Contribution, and Dates:

Project cost. Total actual project costs were the same as those at appraisal (US\$15.0 million, with no significant increase in the cost of the physical component). However, the total actual cost in Annex 2 of the ICR includes a separate line item for contingencies of US\$0.5 million (a 13% increase from original estimates), but which should not be included in actual costs.

Financing. The project was totally financed by a US\$15 million Grant from the Lebanon Trust Fund administered by IDA. There were no other external sources of financing.

Borrower contribution. None was planned or provided.

Dates. The project was granted two extensions totaling 2 years from May 20, 2010 to May 20, 2012. The first extension, of 18 months, was due to the security situation that delayed the start up by two years. The second extension, of 6 months, was granted to enable the contractor to extend more metered connections to the final beneficiaries, which remained behind schedule until project closure.

3. Relevance of Objectives & Design:

a. Relevance of Objectives:

Substantial.

The objective of World Bank Group's Country Partnership Strategy (CPS) for Lebanon dated

July 28, 2010 (FY11-FY14) is to "put the Lebanese economy on a path to sustained high and broad-based economic growth which is critical for Lebanon to continue to provide adequate infrastructure and social services." (CPS para. 56) The CPS stated that the water sector is not keeping up with demand, and investments are needed to reconstruct, rehabilitate and expand water supply.

The Government's Progress and Development Program seeks to improve the "quality of Lebanese life through better safeguarding the environment, widening access to better quality and more affordable health care and education..." (CPS page 11). The CPS identifies infrastructure services (electricity, water, environment, telecommunications, and transport) as well as education, and social protection as the sectors that need attention to achieve the objective. The main problems identified under the health sector relate to access and affordability, and the CPS was to address these issues through reform of the health insurance system. Although, according to the CPS (page 3), Lebanon achieves relatively good health outcomes compared with most other middle income countries, it recognizes the link between health and contaminated water due to the discharge of waste water (CPS p. 25) into streams and aquifers. This is further elaborated in the Technical Annex of the project, where the built up area around the project discharge their untreated sewage into watercourses. The consequences are a direct and real threat to the water supply and public health (page 1). As a result of the degraded water quality, a number of water borne diseases are reported in the project area (page 4).

b. Relevance of Design:

Modest.

Although improvements in health through improvements in water service delivery are stated as the main objective, design does not identify the health outcomes that are expected from the project interventions, but focuses on outcomes related specifically to quality and quantity improvements in water supply delivery. Nor did design or the results framework address the link between intended health outcomes (the stated project objective) and the activities supported in the water sector in the project area.

Water sector reforms, particularly stopping illegal connections, were envisaged as necessary for the success of the project and for the financial sustainability of the utility. However, such reforms were not supported by this operation, but were meant to be addressed in a separate project with the same utility (Ba'albeck Water and Wastewater Project – BWWP). The ICR indicates that, while some progress was made, the reforms had not been accomplished by the end of the BWWP. The availability of other sources for potable water used by the final consumers, for which the latter were not obliged to pay (e.g. water from the pre-existing system), was not addressed; and methods to influence a shift in demand to, and willingness to pay for, the new and improved water supply system were not included in the design of the project (ICR p. 25).

4. Achievement of Objectives (Efficacy):

The degree of achievement of the project objective -- *to improve health conditions of the population in the Project Selected Area, through the provision of non-contaminated water in increased quantities by completely rehabilitating the water network* – is assessed as **modest**.

Outputs

- (a) Rehabilitation of the Chamsine pumping station which included (i) installation of 4 new pumps, chlorination system, a surge tank, and a small sewage treatment plant for the guard room; (ii) rehabilitation of the pumps area and the laboratory room (iii) construction or reconstruction of chlorination rooms, guard house; and (iv) improvements in lighting systems, windows and tiling.
- (b) Improvements in the Kefraya well stations included the installation of new submersible pump.
- (c) Improvements in the Rmasa well station included: (i) increasing well depth from 512 to 620 meters and (ii) replacing the submersible pump.
- (d) Construction of strategic reservoirs included: (i) construction of two circular reinforced reservoirs with a total capacity of 7000 m³.
- (e) Rehabilitation of two existing elevated reservoirs with 300 m³ capacity each at Al-Rawda and al-Khiyara.
- (f) Consulting services were provided for construction supervision and for implementation of the Environmental Management Plan.

Outcomes

- (a) According to the ICR (page 9), a sample of monthly reports examined by the ICR team demonstrate that the water supply financed by the project “has consistently achieved [World Health Organization] drinking water quality standards with the exception of some instances where residual chlorine was not found.” Prior to the project, nitrates were at 100 milligrams per liter (mg/l) and fecal coliforms at 10/100 milliliters (ml). By project closure, nitrates had fallen to below 1.5 mg/l and fecal coliforms were “typically measured at 0/100 ml” (ICR, page 9). The appraisal targets of nitrates lower than 10 mg/l and fecal coliforms below 1/100 were, therefore, exceeded.
- (b) The capacity to supply potable water to commercial establishments and households rose from 60 liters per capita per day (l/c/d) to 100 l/c/d, meeting the target set at appraisal. “The upgraded water supply system produces sufficient water to meet the output goals under the project” (ICR, page 10).
However, these amounts refer to *the capacity to supply* rather than *the quantity of water actually supplied* to the intended final beneficiaries.
- (c) The proportion of households legally connected fell far short of the target of 90%. According to utility records, 5,310 households out of a total of 16,962 – or 31.3% -- were legally connected as of October, 2012. This is only a small improvement compared to the 30% prevailing in 2007. There were a number of reasons for the shortfall. Until 2010, the Beka’a Regional Water Authority (BRWA) followed a policy of connecting all potential users whether or not they immediately subscribed to the upgraded service. It was assumed that the demonstrated benefits of the service would lead users to subscribe. However, there is a long tradition of non-subscription in West Beka’a stemming from a history of poor service provision and weak enforcement capacity in the BRWA (disconnection is considered difficult and is rarely carried out). The policy of connecting all potential users whether they paid or not reinforced this

tendency since consumers were able to access water without paying for it. Even after the policy was changed in 2010 (high quality water would only be supplied to those households who first subscribe), households have been slow to connect to the new system and pay for non-contaminated water. This is because BRWA has continued to supply them with water through the old, low pressure West Beka's distribution system, thereby providing them with an alternative source given the political unacceptability of disconnection. A significant proportion of the consumers identified in the PAD as potential project beneficiaries, therefore, were not receiving improved quality water even though the capacity existed to provide this service.

(d) No evidence or analysis is provided with regard to the *final intended outcome* of improved health conditions of the population in the Project Selected Area. As the ICR (page 8) points out, "the team did not document the state of network water-related health issues in the [project] area at appraisal and made no provision to follow up on this issue during implementation. The [project development objectives] would thus more appropriately have either not raised the health issue or would have made an effort to document it."

5. Efficiency:

No economic or financial analysis was conducted at appraisal owing to the emergency nature of the operation. The analysis at closure was limited to the general observation that since only one-third of consumers were billed, the financial rate of return for the investments would be negative. However, neither a financial nor an economic rate of return was calculated: as noted earlier, no attempt was made to assess the health impact of the investments. As the ICR (page 14) acknowledges, costs per subscriber were considerably higher than foreseen at appraisal, and this is an indicator of "very low efficiency." Project completion was delayed by two years due to political instability and to implementation inefficiencies.

The ICR indicates (p. 2) that cost savings were achieved which allowed the project potentially to reach more beneficiaries. The project built 174 kms of distribution lines vs. the 80 kms planned. This was partly achieved by reducing the planned transmission lines from 29 to 20 kms (note to indicator 3 in the ICR). However, the detailed description of the project outputs (Annex 3) does not provide sufficient information to compare appraisal estimates with final outputs in order to substantiate that significant cost savings were achieved.

Efficiency is rated negligible.

a. If available, enter the Economic Rate of Return (ERR)/Financial Rate of Return (FRR) at appraisal and the re-estimated value at evaluation :

	Rate Available?	Point Value	Coverage/Scope*
Appraisal	No		
ICR estimate	No		

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

6. Outcome:

The relevance of the objective is rated substantial and that of design modest. Given the absence of direct evidence related to the intended objective of improving health conditions in the project area, as well as lower than expected demand for tariffed connections, efficacy of the

single project objective is rated modest. Efficiency is rated as negligible. Overall outcome is rated unsatisfactory.

a. Outcome Rating : Unsatisfactory

7. Rationale for Risk to Development Outcome Rating:

The main risks to the project's development outcome are:

(a) the likelihood is low that the government would change its policies regarding supply of free water or cutting off supply to those who do not pay. Consequently, the population's demand for legal, tariffed connections is likely to continue to be weak, thus limiting the intended impact of the project (access to quality water and utility reform);

(b) political and security risks continue to prevail in the region and are likely to impact the adequate maintenance of the facilities; and

(c) low collection rates continue to pose a challenge to the viability of the BRWA. Government subsidies are insufficient to protect the system against renewed degradation. .

a. Risk to Development Outcome Rating : Significant

8. Assessment of Bank Performance:

a. Quality at entry:

The project was prepared in two months under OP 8.5 for Emergency Recovery Assistance. The concept review took place on January 19, 2007, appraisal on February 6, 2007, Board approval on March 20, 2007, and effectiveness on August 2, 2007. Procurement and financial management procedures were in place at the Council for Development and Reconstruction (CDR). Procurement was simplified in order to avoid delays encountered in other projects. Safeguard issues were identified and dealt with in the legal agreements under emergency provisions. The Water Authority was made responsible for the monitoring of the outcome indicators, while the CDR was made responsible for the implementation of the project. Institutional and policy reforms were not considered to be required under this project because they were being addressed under a special component in a parallel project with the same agency (The Ba'albeck Water and Wastewater Project).

There were significant shortcomings in Quality at Entry, some of them because of the limited time devoted to preparation: (a) misalignment between the strategic objectives as stated in the CPS with its emphasis on the water sector against the emphasis of the project on the health objective, thereby leading to weak analysis of the health dimension and a deficient M&E framework; (b) the risks inherent in providing free connections and the availability of water from the old system were not taken into account (ICR para 19); and (c) the reliance of the population on other sources of potable water such as bottled or home treated water was not addressed (ICR Annex 4).

Quality-at-Entry Rating : Moderately Unsatisfactory

b. Quality of supervision:

Supervision took place under difficult circumstances, and the project was delayed for two years due to the security situation at the outset. Procurement was simplified to one contract in order to focus on the progress of work and monitor contracts to avoid delays.

There were a number of significant shortcomings in the Quality of Supervision: (1) no action was taken to correct for the discrepancy between the project's stated objective (health improvements) and the focus of the results framework only on water quality and quantity improvements (the ICR acknowledges this issue in the "Lessons Learned" section), consequently, monitoring and analysis of the health dimension did not take place; (2) compliance or supervision of the cultural heritage safeguard policy which was triggered by the project is not addressed; (3) Implementation Status Reports were less than fully candid and realistic: the project was rated satisfactory or moderately satisfactory in implementation and progress towards achievement development objectives throughout its life which delayed or prevented the undertaking of appropriate corrective actions.

Quality of Supervision Rating : Moderately Unsatisfactory

Overall Bank Performance Rating : Moderately Unsatisfactory

9. Assessment of Borrower Performance:

a. Government Performance:

The Government outlined the objectives of improving the health and water sectors in its Reconstruction, Recovery and Reform program covering 2007-2011 (CPS p. 11). The institutional arrangements for implementation were ready and relied on a tested and long standing framework for implementing Bank financed projects, particularly with regard to the fiduciary aspects.

However, the Government (a) did not take the necessary actions or create the necessary enabling environment to support institutional policies for the sector (e.g. cost recovery, connections policy) that were discussed with the Bank; and (b) delayed the appointment of the project director; and (c) did not take agreed policy actions to implement reform (ICR p. 17)

Government Performance Rating Moderately Unsatisfactory

b. Implementing Agency Performance:

The Council for Development and Reconstruction (CDR) and the Bekaa Regional Water Authority (BRWA) were responsible for the implementation of the project. Both entities showed commitment to the project's goals. The CDR is responsible for implementing Bank financed projects in Lebanon, and had the necessary staff, skills and knowledge to adhere to Bank procedures throughout preparation and implementation. The CDR was also responsible for monitoring project progress through the monitoring indicators. The ICR reports that fiduciary and safeguard issues did not arise during implementation.

The BRWA was responsible for implementation of actions to facilitate the achievement of the objectives, mainly (a) coordination with high levels of government and requesting corrective actions (e.g. funding, tariffs) and (b) coordination with the community in terms of public information and encouragement to connect legally to the water supply. However, the BRWA

did not have sufficient influence to change government policies. Once the director was appointed, the BRWA had increasing but insufficient and delayed success with its customers to encourage them to connect legally to the water supply system.

Implementing Agency Performance Rating : Moderately Satisfactory

Overall Borrower Performance Rating : Moderately Unsatisfactory

10. M&E Design, Implementation, & Utilization:

a. M&E Design:

The main deficiency of the M&E system as designed is that it did not take into consideration the stated objective of the project in terms of health improvements, for which there were no indicators. To monitor the water related aspects of the project, the system was designed to be simple and required minimum data. Outcome indicators were to measure the quality and quantity of water delivered as well as the connections completed. Quality targets were set at levels recommended by the World Health Organization. Work progress and output indicators were collected and monitored by the CDR, and focused on engineering and quantitative outcomes (Kms of network, implementation progress). Monitoring indicators were to be reported to the Bank in semi-annual reports. The water authority was responsible for the monitoring of the outcome indicators

b. M&E Implementation:

The monitoring and evaluation system was implemented and reported as designed. Monitoring focused on engineering outcomes during early implementation. Monitoring of the number of new connections was added as the rehabilitated system became operational. No attempt was made to modify the M&E system to include monitoring of health or poverty outcomes.

In March 2012, the BRWA carried out a region-wide survey of 800 households to better identify community needs and approaches that would increase subscription levels (ICR, Annex 6: List of Supporting Documents). The BRWA has reportedly drawn from the survey results to better address specific concerns with water operations in select neighborhoods.

c. M&E Utilization:

The ICR states that indicators were used during implementation to (a) take action to improve water quality; (b) monitor progress of procurement and construction schedules; (c) adjust network design to increase distribution lines at the cost of a decrease in transmission lines; and (d) alert the government to the lack of progress on the success of legalizing connections/institutional reform.

M&E Quality Rating : Modest

11. Other Issues

a. Safeguards:

The project was classified under Category “B” for environmental assessment purposes. According to the PAD (page 12), three safeguards policies were triggered OP 4.01 (Environmental Assessment), OP 4.11 (Cultural Property), and OP 4.12 (Involuntary Resettlement). An Environment Management Plan (EMP) and Resettlement Policy Framework were prepared during project preparation.

Environment : The ICR states (para 35) that no significant environmental impacts were reported or noted by the client or by Bank supervision missions. No further information is provided and there is no statement on adherence to the EMP. The project team reiterated that no safeguard issues arose during implementation.

Involuntary Resettlement : The ICR indicates (para 36) that records presented to the ICR mission (April 2012) show that all construction was on public land and there was no land acquisition or involuntary settlement.

Cultural Property : There is no discussion in the ICR (or the PAD) of OP 4.11, which is triggered in the PAD. The project is, however, located near important cultural sites (Baalbeck, Anjar), and a discussion of the project's potential impact or lack of it would have been warranted.

b. Fiduciary Compliance:

Financial Management : The ICR reports that financial management capacity existed within the CDR. Supervision teams reviewed CDR approval documents and stated that the internal financial management system was adequate. The ICR does not include a statement on receipt of annual audits and opinions. The project team informed IEG that annual audit reports were received and reviewed by the Bank’s Financial Management Specialist.

Procurement : The CDR prepared procurement plans and monitored them against actual implementation. Delays in implementation (2 years) were caused by the security situation, but proceeded on schedule once the project restarted. The project procurement process was simplified considerably with one works contract and one design and supervision contract. There were no reported cases of misprocurement.

c. Unintended Impacts (positive or negative):

None

d. Other:

12. Ratings:	ICR	IEG Review	Reason for Disagreement / Comments
Outcome:	Moderately Unsatisfactory	Unsatisfactory	The relevance of the objective is rated substantial and that of design modest, efficacy of the single project objective is rated modest, and efficiency is negligible.
Risk to Development Outcome:	Significant	Significant	
Bank Performance :	Moderately Unsatisfactory	Moderately Unsatisfactory	
Borrower Performance :	Moderately Unsatisfactory	Moderately Unsatisfactory	
Quality of ICR :		Satisfactory	

NOTES:

- 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 drawn by the ICR and IEG from the experience of preparing and implementing this project:

Given the limited time for preparation, emergency operations require additional attention and review steps during implementation (in this case with regard to M&E, risks, and safeguards)

Where policy and institutional reforms are critical to the success of the project, it is important to ensure that they are actually undertaken. If, as in this case, they are meant to be supported by a parallel Bank-supported operation, then it would be appropriate to ensure during preparation and implementation that the interface between the two projects is functioning as intended.

Careful attention to consumer incentives to pay for improved water needs to be factored into project design.

Coherence between the project development objectives as written and the proposed activities is critical for project success.

14. Assessment Recommended? Yes No

15. Comments on Quality of ICR:

The ICR is candid in its ratings, and in recognizing the shortcomings of the project particularly in the (a) definition of the health objective; (b) lack of health monitoring; and (c) overall limited achievement of the project objectives.

The ICR has the following shortcomings:

(a) It sometimes confuses actual and potential achievements (for example, paragraph 7 indicates that the project has already benefitted 16,000 households/85,000 people, whereas Annex 4 reports actual connections of 5,310 households).

(b) The ICR reports on cost savings due to modest design and procurement efficiencies (para 15), but there is no cost analysis to provide evidence of savings from the reduced scope of other work.

(c) The discussion of safeguard and fiduciary compliance is incomplete

a. Quality of ICR Rating : Satisfactory