

**Document of
The World Bank**

Report No.: 38473

PROJECT PERFORMANCE ASSESSMENT REPORT

LEBANON

**EMERGENCY RECONSTRUCTION AND REHABILITATION PROJECT
(LOAN 3562-LE)
AND
SOLID WASTE AND ENVIRONMENTAL MANAGEMENT PROJECT
(LOAN 3899-LE)**

January 25, 2007

*Sector, Thematic and Global Evaluation Division
Independent Evaluation Group (World Bank)*

Currency Equivalents

Currency Unit = Lebanese Pound

1994 (May)	US\$ 1.00	LBP 1,690
1997 (October)	US\$ 1.00	LBP 1,531
2005 (November)	US\$ 1.00	LBP 1,5075

Abbreviations and Acronyms

ARLA	Assistance to the Rehabilitation of the Lebanese Administration (EU program)
BOT	Build – Operate – Transfer
CAS	Country Assistance Strategy
CDR	Council for Development and Reconstruction
CPPR	Country Portfolio Performance Review
CZM	Coastal Zone Management
EA	Environmental Assessment
EIB	European Investment Bank
EdL	Electricité du Liban
ERRP	Emergency Reconstruction and Rehabilitation Project
EU	European Union
GOL	Government of Lebanon
ICR	Implementation Completion Report
IMF	Independent Municipal Fund
MIM	Ministry of Interior and Municipalities
MMRA	Ministry of Municipal and Rural Affairs
MOE	Ministry of Environment
MOF	Ministry of Finance
MOI	Ministry of Interior
MPT	Ministry of Post and Telecommunications
NERP	National Emergency Recovery Program
NIMBY	Not In My BackYard syndrome
OECD	Overseas Economic Cooperation Fund
OMSAR	Office of the Minister of State for Administrative Reform
PCU	Project Coordination Unit
PMU	Project Management Unit
PPAR	Project Performance Assessment Report
QAG	Quality Assessment Group
SIU	Sector Implementation Unit
SWEMP	Solid Waste and Environmental Management Project
SWM	Solid Waste Management
TCC	Technical Coordination Committee
USAID	United States Agency for International Development

Fiscal Year

Government

January 1 – December 31

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IEGWB Mission: Enhancing development effectiveness through excellence and independence in evaluation.

About this Report

The Independent Evaluation Group assesses the programs and activities of the World Bank for two purposes: first, to ensure the integrity of the Bank's self-evaluation process and to verify that the Bank's work is producing the expected results, and second, to help develop improved directions, policies, and procedures through the dissemination of lessons drawn from experience. As part of this work, IEGWB annually assesses about 25 percent of the Bank's lending operations through field work. In selecting operations for assessment, preference is given to those that are innovative, large, or complex; those that are relevant to upcoming studies or country evaluations; those for which Executive Directors or Bank management have requested assessments; and those that are likely to generate important lessons.

To prepare a Project Performance Assessment Report (PPAR), IEGWB staff examine project files and other documents, interview operational staff, visit the borrowing country to discuss the operation with the government, and other in-country stakeholders, and interview Bank staff and other donor agency staff both at headquarters and in local offices as appropriate.

Each PPAR is subject to internal IEGWB peer review, Panel review, and management approval. Once cleared internally, the PPAR is commented on by the responsible Bank department. IEGWB incorporates the comments as relevant. The completed PPAR is then sent to the borrower for review; the borrowers' comments are attached to the document that is sent to the Bank's Board of Executive Directors. After an assessment report has been sent to the Board, it is disclosed to the public.

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Outcome: The extent to which the operation's major relevant objectives were achieved, or are expected to be achieved, efficiently. The rating has three dimensions: relevance, efficacy, and efficiency. *Relevance* includes relevance of objectives and relevance of design. Relevance of objectives is the extent to which the project's objectives are consistent with the country's current development priorities and with current Bank country and sectoral assistance strategies and corporate goals (expressed in Poverty Reduction Strategy Papers, Country Assistance Strategies, Sector Strategy Papers, Operational Policies). Relevance of design is the extent to which the project's design is consistent with the stated objectives. *Efficacy* is the extent to which the project's objectives were achieved, or are expected to be achieved, taking into account their relative importance. *Efficiency* is the extent to which the project achieved, or is expected to achieve, a return higher than the opportunity cost of capital and benefits at least cost compared to alternatives. The efficiency dimension generally is not applied to adjustment operations. *Possible ratings for Outcome:* Highly Satisfactory, Satisfactory, Moderately Satisfactory, Moderately Unsatisfactory, Unsatisfactory, Highly Unsatisfactory.

Risk to Development Outcome: The risk, at the time of evaluation, that development outcomes (or expected outcomes) will not be maintained (or realized). *Possible ratings for Risk to Development Outcome:* High, Significant, Moderate, Negligible to Low, Not Evaluable.

Bank Performance: The extent to which services provided by the Bank ensured quality at entry of the operation and supported effective implementation through appropriate supervision (including ensuring adequate transition arrangements for regular operation of supported activities after loan/credit closing, toward the achievement of development outcomes. The rating has two dimensions: quality at entry and quality of supervision. *Possible ratings for Bank Performance:* Highly Satisfactory, Satisfactory, Moderately Satisfactory, Moderately Unsatisfactory, Unsatisfactory, Highly Unsatisfactory.

Borrower Performance: The extent to which the borrower (including the government and implementing agency or agencies) ensured quality of preparation and implementation, and complied with covenants and agreements, toward the achievement of development outcomes. The rating has two dimensions: government performance and implementing agency(ies) performance. *Possible ratings for Borrower Performance:* Highly Satisfactory, Satisfactory, Moderately Satisfactory, Moderately Unsatisfactory, Unsatisfactory, Highly Unsatisfactory.

Contents

Preface.....	vii
Summary.....	ix
Background	1
The Projects.....	2
Objectives, Components and Costs.....	2
Implementation	2
Implementing Arrangements	2
Implementation Experience	4
Evaluation.....	6
Monitoring and Evaluation	6
Outcomes	6
Relevance	7
Efficacy	9
Emergency Reconstruction and Rehabilitation Project	9
Solid Waste and Environment Management Project	13
Efficiency	15
Emergency Reconstruction and Rehabilitation Project	15
Solid Waste and Environment Management Project	15
Risks to Development Outcomes.....	16
Bank Performance.....	16
Borrower Performance.....	17
Looking Forward and Lessons	18
Annex A. Basic Data Sheet.....	21

<p>This report was prepared by George T. K. Pitman and was based on the field work of Denis Robert (consultant) who assessed the project in February 2006. Soon-Won Pak provided administrative support.</p>
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PRINCIPAL RATINGS

	<i>ICR*</i>	<i>ICR Review*</i>	<i>PPAR</i>
Emergency Reconstruction and Rehabilitation Project (ERRP)			
Outcome	Satisfactory	Moderately Satisfactory	Satisfactory
Institutional Development Impact**	Modest	Modest	nr
Risks to Development Outcome	nr	nr	Significant
Sustainability***	Likely	Likely	nr
Bank Performance	Satisfactory	Satisfactory	Satisfactory
Borrower Performance	Satisfactory	Satisfactory	Satisfactory

Solid Waste and Environmental Management Project (SWEMP)

Outcome	Unsatisfactory	Unsatisfactory	Unsatisfactory
Institutional Development Impact**	Modest	Modest	nr
Risks to Development Outcome	nr	nr	Significant
Sustainability***	Unlikely	Unlikely	nr
Bank Performance	Satisfactory	Satisfactory	Unsatisfactory
Borrower Performance	Unsatisfactory	Satisfactory	Unsatisfactory

* The Implementation Completion Report (ICR) is a self-evaluation by the responsible operational division of the Bank. The ICR Review is an intermediate IEGWB product that seeks to independently verify the findings of the ICR.

** As of July 1, 2006, Institutional Development Impact is assessed as part of the Outcome rating.

*** As of July 1, 2006, Sustainability has been replaced by Risk to Development Outcome. As the scales are different, the ratings are not directly comparable.

nr = not rated

KEY STAFF RESPONSIBLE

<i>Project</i>	<i>Task Manager/Leader</i>	<i>Division Chief/ Sector Director</i>	<i>Country Director</i>
Emergency Reconstruction and Rehabilitation Project (ERRP)			
Appraisal	Youssef Choucair	Alastair J. McKechnie	Ram Chopra
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Solid Waste and Environmental Management Project (SWEMP)			
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Preface

This is the Project Performance Assessment Report (PPAR) on the Emergency Reconstruction and Rehabilitation Project and on the Solid Waste and Environmental Management Project in Lebanon.

The Emergency Reconstruction and Rehabilitation Project, estimated at appraisal to cost US\$ 224 million, was approved in March 1993 for an IBRD loan of US\$ 175 million. The European Investment Bank agreed to cofinance US\$10 million. A supplementary loan of US\$ 50 million was approved in May 1996 and the total estimated cost of the project increased to US\$ 293 million. Total project costs at completion were US\$ 294.8 million of which the IBRD provided US\$219.7 million, the Government of Lebanon US\$43.4 million and the EIB US\$30.4 million. The project closed on March 1, 2002, when US\$5.3 million was cancelled after four extensions totaling 62 months.

The Solid Waste and Environmental Management Project, estimated at appraisal to cost US\$135 million, was approved in June 1995 for an IBRD loan of US\$55 million. Japan (OECF) agreed to cofinance US\$55 million. In June 2001, the project was restructured and reduced in scope, \$30 million of the loan and all OECF cofinancing was cancelled, and the closing date was extended by two years. The final cost of the project was US\$11.2 million of which the IBRD disbursed US\$10.1 million and GOL US\$1.2 million. The loan closed in December 31, 2003 when US\$13.8 million was cancelled.

This report is based on the review of the Implementation Completion Reports (ICR) for the two projects (Report No 24728 dated August 28, 2002, and Report No 27575 dated June 21, 2004) by the Middle East and North Africa Region. This was supplemented by the respective Memoranda and Recommendations of the President, Staff Appraisal Reports and Project Appraisal Documents, credit and legal documents, project files at the World Bank's Headquarters and discussions with Bank staff in Washington and Beirut.

An Independent Evaluation Group (IEG) mission visited Lebanon in February 2006 to discuss the effectiveness of the Bank's assistance with the Government, development partners, implementing agencies, and beneficiaries. The cooperation and assistance of central government officials, management and staff of implementing agencies and other parties concerned are gratefully acknowledged.

These projects were selected for assessment because (a) IEG had only a few evaluations on Bank projects and programs in Lebanon, (b) Lebanon had been short-listed for a forthcoming IEG Country Assistance Evaluation covering the last 10 years and, (c) the environmental management aspects of these projects could provide valuable lessons for IEG's global evaluation of the Bank's assistance for environmental management.

Following standard IEG procedures, copies of the draft PPAR was sent to the Borrower for comments, but none were received.

Summary

The 1993 Emergency Reconstruction and Rehabilitation Project was the first World Bank project in Lebanon after the end of the 15-year civil war and was followed by the 1995 Solid Waste and Environmental Management Project. The Emergency Project focused on essential repairs of physical and social infrastructure in various sectors (power, water and sanitation, solid waste, education, housing, etc.) while paving the way for future sector reforms. Subsequently non-emergency works were incorporated into the Emergency Project after a supplementary loan was agreed in 1996. The follow-on Solid Waste Project was aimed at developing the solid waste sector in the country, through investments and institutional strengthening, and creating instruments for better planning and development of the Lebanese coastal zone.

The Emergency Project addressed critical post-conflict infrastructure reconstruction and it was highly relevant to the Government's objectives. After four extensions of the closing date due to optimistic initial assumptions and the resumption of hostilities in 1996, the project achieved most of its physical objectives, particularly in the power and water and sanitation sectors, but was less successful in the implementation of basic sector reforms. Overall the project outcome is rated as satisfactory.

The Solid Waste Project's objective to provide solid waste collection and treatment facilities for the whole country was overly ambitious. Although this objective was in line with Government's initial strategy, project design was only modestly relevant because it failed to take account of Lebanon's inexperience in solid waste management, lack of subsector capacity at the end of the civil war, and local political opposition to solid waste facilities and landfill sites. Specifically, the project did not learn sufficiently from the experience and difficulties encountered by the Emergency Project. Its implementation was particularly fraught because of unmitigated social resistance and government's changes in sector strategy that led to the withdrawal of Japanese cofinancing and the restructuring of the project in 2001. At completion, only one of the 15 sanitary landfills planned was completed. The project almost totally failed to achieve its objectives, and its outcome is rated as unsatisfactory.

Government efforts under the Emergency Reconstruction Project concentrated on slowly expanding infrastructure for water supply, solid waste management and electricity and less on sector reform, although there were notable achievements in the Ministry of Finance and Telecommunications. Little progress was made on institutional issues requiring cross-sectoral coordination. Subsequent attention to improving cost recovery, demand management and environmental conservation has languished as the government continues to subsidize the delivery of basic services in response to political considerations. What little attention there was to long-range planning, conservation, trade-offs, and efficiency improvements has become hostage to the uncertain political climate and inability to bridge sectarian differences for the common good. The most recent 34-day war between Hezbollah and Israel that started in July 2006 underscores the tremendous governance challenges in Lebanon caused by the diffusion of political authority among various sects and branches of government.

Both projects have significant risks to their development outcomes primarily because of the macroeconomic and political environment, social concerns and the recent Hezbollah-Israeli war. At the time the projects were assessed by IEG the good quality construction of the projects' infrastructure, allied with good standards of operation but modest standards of maintenance, posed moderate risks to their technical sustainability. Even so, these modest risks are threatened by generally inadequate cost recovery and dependence on government subsidies. While it is not known how much of the projects' infrastructure was damaged or destroyed by the recent war, it is likely that continued public subsidies may be reduced as a result of the burgeoning public debt and additional pressure from donors supporting the latest round of infrastructure reconstruction.

Bank and Borrower performance are rated as satisfactory for the Emergency Reconstruction and Rehabilitation Project, but unsatisfactory for the Solid Waste and Environmental Management Project, in light of the project's weak design and belated restructuring and of poor implementation by Government agencies.

These projects confirm three IEG lessons:

Lesson 1. *Avoid over-specifying the details of post-conflict reconstruction and give adequate attention to institutional reform and capacity-building.* One of the main reasons for the success of Lebanon's Emergency Project was the flexibility introduced at the very origin of the project that allowed re-allocations of funds between sectors according to demand and readiness for implementation. Unwillingness to address market failure, systemic institutional problems and capacity constraints in parallel with the restoration of physical infrastructure may allow continuation of out-dated practices and low levels of efficiency.

Lesson 2. *Big bang approaches to solid waste management do not work when political consensus and good governance are lacking.* The failure of Solid Waste Project stems mainly from the lack of consensus on the government's overall strategy for solid waste management albeit with some successful exceptions locally. Continued debate on the best way forward among national and local politicians, NGOs and businessmen, combined with strong local resistance to dump sites, effectively halted implementation and the project failed. In the few places where local political consensus was achieved – following long, patient and transparent dialogue built on clear information and sound technical advice on alternatives – the pilot project was successful.

Lesson 3. *In the absence of national consensus on environmental management it is better to develop local solutions that can later be scaled up.* In the case of Lebanon's solid waste management the primary issue appears to be lack of information dissemination and little practical experience with solid waste disposal. Development of pilots and study tours to orientate decision-makers and NGOs would inform the contentious debate and pave the way for practical solutions.

Background

1. Lebanon's economic growth before the start of the 1975-90 civil war had been largely driven by the service sectors, namely trade, tourism and finance, which attracted business from surrounding oil-based economies. Subsequently the economy and socio-economic conditions deteriorated markedly with intermittent recovery during periods of relative calm. By 1990 Lebanon's per capita GNP had declined to one third of the 1975 level, income inequalities became accentuated and many of the most skilled workers and professionals emigrated. Nearly one quarter of the population of 3.6 million had been displaced and lived in unhealthy shantytowns with severe overcrowding and inadequate housing due to war damage. Urban poverty problems were especially pressing in Beirut. By the end of the war, public utilities and social services were either non-existent or of poor quality. The total damage to physical assets was estimated by the United Nations at \$25 billion.
2. An ambitious master plan for the reconstruction of the Lebanese economy formed the basis for the National Emergency Recovery Program (NERP) that was prepared with the assistance of the Bank. The NERP was designed as a multi-sector operation focusing on emergency repairs and the rehabilitation of infrastructure (water/wastewater, solid waste, electricity, telecommunications, transport) and social components (education, health, social services, housing) as well as other components (production, government buildings, technical assistance). Initial investment of \$2.3 billion was envisaged over a four-year period (1993-1996). At the same time the Government initiated major initiatives to expand physical infrastructure and introduce private sector participation.
3. GDP grew rapidly during the reconstruction phase (1991-1997) and has progressively decelerated thereafter, with a recession in 2000. Even so, per capita incomes are about three to four times higher in late 2005 (\$3,800 against \$1,200) than they were at the end of the war.
4. The Emergency Reconstruction and Rehabilitation Project (ERRP) was one of the major components of the NERP. To induce other donors to participate in the financing of the NERP, the ERRP incorporated several sectors: power, water and sanitation, solid waste, education, housing, and technical assistance to the finance and telecommunication sectors.
5. The Solid Waste and Environmental Management Project (SWEMP) was an ERRP follow-on project. The solid waste sector, which was the responsibility of municipalities, was generally limited to the collection of urban waste and its disposal. Although solid waste was included in ERRP, it only addressed immediate needs and severe risk to public health and the environment remained because of haphazard dumping on the streets, vacant lots and the coastline, with frequent intermingling of hospital and other hazardous wastes. Political and public awareness in solid waste management was very low. Thus the SWEMP was designed to complement the solid waste component of the ERRP and to provide a countrywide solution for solid waste management.

The Projects

Objectives, Components and Costs

6. **The Emergency Reconstruction and Rehabilitation Project.** The objectives of the ERRP to implement a program to rehabilitate, repair and reconstruct damaged physical and social infrastructure facilities and housing and strengthen the Borrower's institutional capacity in implementing the NERP are clear and well-defined. As seen in Table 1 the project limited itself to the rehabilitation, repair and reconstruction of damaged physical and social infrastructure facilities and restoration to a basic level of service provision. These objectives did not change during implementation even though there were substantial alterations to the components. Although ERRP was not in itself a vehicle for policy reforms, it did expect to create viable service sectors that would be the platform for subsequent institutional and financial reforms.

7. Project components were wide-ranging and covered major subsectors in addition to overall institutional strengthening (Table 1). They included reconstruction and/or rehabilitation of water and wastewater facilities, electricity distribution facilities and provision of collection, treatment equipment and disposal facilities for solid waste management. Damaged housing, vocational and technical training facilities were to be reconstructed giving priority to the needs of displaced households.

8. **The Solid Waste and Environmental Management Project.** Soon after the start of ERRP the SWEMP was prepared and at its inception in 1996 the solid waste component of the ERRP was cancelled. SWEMP's objectives were to eliminate unsanitary and improper dumping of solid waste and strengthen the capabilities of central ministries and agencies and participating municipalities in the area of solid waste management. In most respects these were more detailed versions of ERRP objectives with the addition of enhanced support for sub-sector capacity building (Table 1). It was intended to meet the country's needs in solid waste management facilities, to strengthen the institutions responsible for solid waste management and encourage private sector participation in sector investment and management. A broader environmental component included assistance to develop a coastal zone management plan aimed at protecting of the Lebanese coast from further degradation. Physical components included refuse collection and waste disposal facilities incorporating sanitary landfills and compost plants and separate facilities for hospital waste.

Implementation

IMPLEMENTING ARRANGEMENTS

9. After the civil war, the professional capacities of the ministries were dramatically weak. To implement its reconstruction program, the government revived the Council of Development and Reconstruction (CDR) in 1991 and CDR was responsible for implementing both projects.

Table 1: Project Objectives, components and costs

<i>Original Objectives</i>	<i>Components</i>	<i>Cost \$ millions</i>		
		<i>Entry</i>	<i>Exit</i>	
<i>Emergency Reconstruction And Rehabilitation Project</i>				
1. Implement a program to rehabilitate, repair and reconstruct damaged physical and social infrastructure facilities and housing	• Water supply and waste water including protection of supplies from pollution, provision of water treatment and disinfection and rehabilitation of water distribution, sewerage networks and treatment facilities.	70.5	130.9	
	• Solid waste – procure 80 compactor trucks and 2,760 containers; create and operate suitable disposal sites to prevent further dumping along the sea coast; and prepare a long term strategy for solid waste management.	45.0	41.0	
	• Electricity – rehabilitate medium and low voltage networks in Beirut and restore supply to destroyed villages countrywide.	41.2	52.0	
	• Housing – <i>this was dropped in 1995 and remaining funds allocated to the electricity subcomponent.</i>	38.5	15.6	
	• Education – rehabilitate building, repair/replace equipment, prepare and produce textbooks and training seminars.	18.7	18.2	
2. Strengthen the Borrower's institutional capacity in implementing the NERP	• Institutional strengthening	10.0	20.1	
		<i>Total</i>	<i>223.9</i>	<i>294.9</i>
<i>Solid Waste And Environmental Management Project</i>				
1. Eliminate unsanitary and improper dumping of solid waste by: a) Improving methods of waste collection and disposal b) Improving the quality and marketability of compost through introduction of sorting prior to composting	• Provide 180 compactor trucks for solid waste • Provide 5,200 waste collection containers • Develop 15 sanitary landfill – <i>at restructuring in June 2001 this target was reduced to "2-4 locations"</i> • Rehabilitate old waste dumps	59.1	5.1	
	• Construct three compost plants, a new incinerator for hospital waste and modernize the incinerator at Amrousiyeh – <i>at restructuring this component to be financed by OECF was dropped</i>	64.9	0.0	
2. Strengthen the capabilities of CDR, MMRA and participating municipalities in the area of solid waste management by: a) Improving cost recovery of solid waste collection b) Modernizing municipal management and financial systems c) Increasing private sector involvement in solid waste management d) Create instruments for the more orderly planning and development of the Lebanese coastal zone	• Provide technical assistance and equipment to assist reparation a coastal zone management plan and to strengthen national and local institutions – <i>at restructuring TA was reduced to focus on solid waste management related studies, initiation of costs recovery systems and capacity building for selected local municipalities</i>	11.0	6.1	
		<i>Total</i>	<i>135.0</i>	<i>11.2</i>

10. **SWEMP.** The implementation arrangements followed those established for ERRP including EU funded support for the central Project Coordination Unit (PMU) and a Sector Implementation Unit (SIU) within the Ministry of Environment. In addition, the Ministry of Municipal and Rural Affairs provided a PCU. Overall coordination was carried out by a Technical Coordination Committee. Because of political changes and disagreements about precedence among ministries, these complex project managerial arrangements created implementation problems.

IMPLEMENTATION EXPERIENCE

11. **ERRP.** Project implementation had been optimistically estimated at three and a quarter years but subsequent events caused it to be extended by more than five years. The Project was amended three times and the original closing date (December 31, 1996) was extended four times. The first amendment was for the reallocation in 1995 of the housing component funds to the power component. In February 1996, because of implementation delays arising from of the inaccurate Damage Assessment Reports, the closing date was extended to the end of 1998. The resurgence of the hostilities in April 1996 led to the Supplementary Loan of \$50 million, and the second amendment of the original loan agreement. A third amendment permitted financing of accelerated courses under the education component. In 1998 the closing date was extended again to early 2000, to accommodate delays from a new administration taking office. It was extended by a further year to allow rehabilitation works in liberated territories in south Lebanon. Subsequently, an additional year's extension was approved to facilitate the completion of the ongoing works and the project closed in March 2002.

12. Although design and tender documents were prepared by the SIUs assisted by consulting firms, procurement under the ERRP was not done through the ministries but through the CDR, taking advantage of its more expeditious procurement procedures.

13. **SWEMP.** The loan was declared effective in August 1996. Initial implementation of the project was very slow due to the Government's intention to revise the design of the project by reducing the number of sanitary landfills sites after CDR revised its long-term strategy for the subsector. This revised strategy was endorsed by the Council of Ministers on January 22, 1997 (Decision Nr 18).

14. In early 1997 the Government decided on a major change in its solid waste management strategy. Whereas the initial design (one landfill for each individual *Caza*) aimed to avoid problems between *Cazas* and minimize transport of wastes, the government's new strategy provided for 8 regional schemes (not including Greater Beirut) each comprising one large landfill in less densely populated areas where land was available. Accordingly part of SWEMP was redesigned to include solid waste transfer stations, long-distance transportation and waste sorting.

15. There was strong social resistance to solid waste disposal and treatment sites. The type, magnitude and intensity of resistance, although very common all over the world, were not apparently anticipated during project preparation. Typically the population of a village, town or *Caza* objected to wastes from another village, town or *Caza*, and these objections were exacerbated by the ethnic and religious diversity and the pollution generated by the waste treatment facilities (Box 1.) In Greater Beirut, for example, angry

neighborhood residents destroyed the polluting Amrousiyeh incinerator. This resistance led to long delays in land acquisitions, and in many cases, to the abandonment of the land acquisition efforts.

Inadequate consultation on solid waste disposal sites led to local opposition

Landfilling is a land exhaustive waste disposal option. SWEMP envisioned constructing one landfill in the Koura region to serve three Cazas (Koura, Bsharre and Batroun). From a list of candidate sites prepared by the Design Engineer, the CDR selected a site in Kfar Hazir for constructing a sanitary landfill. An EIA was prepared, recognizing certain hydrogeological concerns that had to be mitigated. Public consultation was initiated – but only after the site had been selected. When local communities got word of the full extent and location of the proposed landfill, they united against the project. Several prominent academicians from local universities joined them in their efforts to halt the project. However, neither the local inhabitants nor the project supporters proposed an alternative waste management scheme. As a result, the project was aborted at the end of 1999 and no alternative waste management system has been proposed since. To date, local municipalities continue to dump their waste in open lands and valleys.

Source: Ministry of Environment. State of the Environment Report. 2001.

16. New actors and administrative changes further complicated implementation. The Ministry of Environment was only established in 1993. In 1998 the new government merged the Ministry of Interior and the Ministry of Municipal and Rural Affairs into the Ministry of Interior and Municipalities. The same year, municipal elections – the first since the 60's – took place, and fresh and inexperienced municipal councils, confronted with the project, expressed their concerns or disagreements. Some of them, approached by environmental NGOs or businessmen, challenged the landfill as the most appropriate and cost-effective option.

17. Early in 1999 the SWEMP came to a complete halt. Disbursements under the loan, including counterpart funds, were frozen by the Ministry of Interior that also prohibited the use of the Independent Municipal Fund to finance contracts for landfill management because of macroeconomic considerations and conditions imposed by the International Monetary Fund. Other restrictions were introduced. The Technical Coordination Committee was suspended. The PCU had to request Ministry's approval for any meeting regarding solid waste and, subsequently, the PCU – composed of consultants of an international firm selected by CDR after regular competitive bidding – was dismissed on the grounds they were paid prohibitive fees.

18. After protracted discussions between the Bank and the government it was agreed to cancel funds and formally restructure the project. Social resistance to the development of landfills, and major political changes at national level and elections of new municipal councils in 1998, challenged the sector organization and technical options being implemented by SWEMP. The Project remained almost dormant for more than two years, and was then restructured in June 2001 during the Country Portfolio Performance Review. When OECF (Japan) withdrew from the project the funding allocated to the waste treatment facilities, including 3 compost plants and an incinerator for the hospital waste, was cancelled. Even then, the project scope – to cover solid waste treatment for more than half of the country – was ambitious and unrealistic. Consequently the first objective was downsized. Its scope was limited to demonstrating improved solid waste

management in the collection and disposal services on 2 to 4 pilot sanitary landfills and private sector participation. As a result \$30 million of the \$55 million loan was cancelled, and the closing date – originally December 31, 2001 – was extended to December 31, 2003.

Evaluation

Monitoring and Evaluation

19. Taking account of the design of M&E, its implementation and utilization, both projects are rated modest.

20. **Design.** The ERRP is rated modest. Being an emergency project and multi-sectoral, ERRP was appraised in six months and had few specific outcomes defined because its primary objective was to implement open-ended rehabilitation and repair efforts. The initial baseline Damage Assessment Report was poor – a situation quite common in post-conflict operations. After re-estimation of damage project costs were revised upwards requiring supplementary financing. No indicators were defined to allow measurement of the efficacy and efficiency of rehabilitation and reconstruction or for measurement of outcomes or impacts. One of the main difficulties with monitoring the impacts and gauging how efficient they were was that there was no “without project” control. Attribution was a difficult design issue because the Bank was one of several donors that, together, covered almost all infrastructure sectors of the economy.

21. The SWEMP is also rated modest on design. A baseline was established and inputs, outputs and outcomes were described. Although a high poverty impact was highlighted at appraisal, there were neither indicators nor an M&E plan to estimate social outcomes and impacts. A comprehensive M&E plan for the project linking inputs to impacts in a results chain was not developed except for environmental issues. The environmental assessment clearly described indicators and standards for environmental impacts and its quality is substantial.

22. **Implementation.** ERRP M&E performance, primarily of inputs, outputs and other process indicators was substantial because inadequate counterpart staffing and insufficient capacity-building was mitigated by foreign consultants. SWEMP implementation of its M&E was substantial but because of the snail’s pace of implementation it focused primarily on input and output indicators.

23. **Utilization.** Both project effectively utilized the M&E indicators to monitor project performance, highlight problems and make appropriate adjustments to project scope and disbursement. Both projects are rated substantial on this dimension.

Outcomes

24. This rating is based on the relevance of the projects’ objectives and the efficacy and efficiency of efforts to achieve them (see Table 2). Because the SWEP officially restructured its objectives, particularly objective 1, the overall ratings for this objective

are weighted by the relative disbursements before and after restructuring. Explanation of these ratings is given below.

Table 2: Ratings for Achievement of Project Objectives

<i>Objectives</i>	<i>Overall Relevance*</i>	<i>Efficacy</i>	<i>Efficiency</i>	<i>OUTCOME</i>
<i><u>Emergency Reconstruction and Rehabilitation Project</u></i>				
1. Implement a program to rehabilitate, repair and reconstruct damaged physical and social infrastructure facilities and housing	High	Substantial	Substantial	Satisfactory
2. Strengthen the Borrower's institutional capacity in implementing the NERP	High	Modest	Substantial	Satisfactory
<i>Overall ratings(ERRP)</i>	<i>High</i>	<i>Substantial</i>	<i>Substantial</i>	<i>Satisfactory</i>
<i><u>Solid Waste and Environment Management Project</u></i>				
1 (Original – 78 % of project disbursement). Eliminate unsanitary and improper dumping of solid waste	Substantial	Negligible	Negligible	Unsatisfactory
1 (Revised – 22 % of project disbursement). Demonstrate improved solid waste management in the collection and disposal services through the establishment of 2-4 sanitary landfills with private sector participation.	Substantial	Negligible	Negligible	Unsatisfactory
<i>Weighted average for objective 1</i>	<i>Substantial</i>	<i>Negligible</i>	<i>Negligible</i>	<i>Unsatisfactory</i>
2. Strengthen the capabilities of CDR, MMRA and participating municipalities in the area of solid waste management	Substantial	Modest	Negligible	Moderately Unsatisfactory
<i>Overall ratings(SWEMP)</i>	<i>Substantial</i>	<i>Negligible</i>	<i>Negligible</i>	<i>Unsatisfactory</i>

NA = not available

* Relevance given in this column is the average rating for each objective and design of the project to achieve it.

Relevance

25. **Both projects were relevant to the Bank's Country Assistance Strategy.** The 1994 CAS justified ERRP because it would speed formation of a stable environment that would increase participation of the private sector thus increase confidence in Lebanon's fiscal management. Additionally, the government's view was that the presence of the Bank in the reconstruction effort would enhance their ability to coordinate international efforts to mobilize external resources and technical assistance. In the second CAS (1997) it was stated that the Bank's presence would further foster private sector participation through IFC and MIGA operations and activities, and that the Bank's lending and AAA and sector work would assist improvement of the environment and public health, thus improving sustainability.

ERRP

26. *The relevance of project objectives to the Borrower and country conditions was high.* Within the framework and the spirit of the NERP the objectives were totally consistent with the government's objectives and strategy for the reconstruction of the physical and social infrastructure. The institutional objectives were also highly relevant. In addition to large-scale financial support for reconstruction, Lebanon required considerable technical assistance to compensate for the absence of qualified and experienced staff that had left the country during the war and initiate systemic reform of the major infrastructure sectors.

27. *Design was highly relevant at appraisal but in hindsight perhaps more attention should have been given to institutional reform.* Thus overall design relevance is substantial. The large number of sectors addressed by the ERRP is, at first sight, excessive, and the Bank had wished to concentrate its intervention on two or three sectors, to maximize impact. But because other donors, supported by the government, made their support conditional on the Bank being involved in more sectors the Bank agreed to broaden its scope of activity. Design relevance was also increased by built-in flexibility that allowed adjustments to changing circumstances and priorities, including donor interests, and reallocation of funds among and within sector was demand-driven. Thus the Bank's assistance to eight sectors leveraged significant donor assistance and was highly relevant - even though this led to a much greater burden on supervision. With hindsight, if the Bank had focused on fewer sectors there may have been greater pressure for systemic institutional reform.

28. The use of extensive technical assistance was substantially relevant given the need to quickly rebuild local capacity. Thus, for example, TA to the Ministry of Finance to support cadastral surveys, automated system for customs data (ASYCUDA), and measures to strengthen economic and financial systems and the introduction of value-added tax (VAT) were and remain highly relevant given the imperative to generate government revenues and attain macroeconomic stability.

29. **SWEMP Objectives.** The Bank supported SWEMP because it believed that environmental and institutional issues would continue to receive insufficient attention because of preoccupation with reconstruction. Thus the Bank's presence was expected to assist government in halting environmental degradation, building local capacity and improving prospects for important economic growth areas such as tourism. Overall relevance of the objectives is rated substantial when considered in the context of the costs of environmental mismanagement in Lebanon.

30. Technically, recent Bank sector work on the costs to the economy of environmental degradation in the Mediterranean region placed solid waste issues at the bottom of the list in terms of economic impact in Lebanon, Table 3. Judged only in terms of solid waste, the project was of low relevance when there remained unresolved water supply problems – as was the case. However, when air pollution is considered, the relevance of the technical solutions proposed (under both original and revised objectives) increases to high. This is because the primary waste disposal method found at appraisal and restructuring was open dumping of wastes in and near towns and cities. Not only did

that gave rise to noxious odors but the standard method of waste disposal, open burning, caused extensive air pollution.

Table 3: Mean Annual Cost of Environmental Degradation to Health and Natural Resources, 2000

Environmental Component	Annual Cost, US\$ millions	Percent of GDP
Air	170	1.02
Water	175	1.07
Land and Wildlife	100	0.60
Coastal zones and cultural heritage	110	0.68
Waste	10	0.05
	<i>Sub-total</i>	<i>3.4</i>
Global Environment	90	0.5
	<i>Total</i>	<i>3.9</i>

Source: Sarraf, M, Larsen B and M. Owaygen. 2004. *Cost of Environmental Degradation – the Case of Lebanon and Tunisia*. Environmental Economic Series Paper No. 97. The World Bank.

31. Despite the relevant objectives and technical solutions, failure to properly address institutional concerns lowered overall design relevance to modest. The project scope was overly ambitious for the five-year implementation period. It was effectively starting from zero and expecting to meet the sanitary landfill and equipment needs for each of the 26 *Cazas* forming Lebanon, as well as building modern solid waste management systems and institutions for the whole of Lebanon.¹ Institutionally the project design was of low relevance also because of the lack of national political consensus on how the sector should be managed and financed. Restructuring the project significantly improved the design relevance because it was only possible to reach consensus as a local level.

Efficacy

EMERGENCY RECONSTRUCTION AND REHABILITATION PROJECT

32. Overall efficacy is rated substantial taking into account that fast infrastructure rehabilitation was relatively more important than building local capacity in the short term. With few and marginal exceptions the ERRP objectives were achieved thanks to four factors: the competent support of the CDR's PMU and SIUs funded by the EU in the line Ministries; the flexibility designed into the management of the funds that allowed easy re-allocation of funds as needed; that CDR procurement procedures were more efficient than the procedures applied by the line ministries and agencies; and vigilant and proactive supervision from the Bank.

Objective 1: Implementation of a program to rehabilitate, repair and reconstruct damaged physical and social infrastructure facilities and housing was successful and efficacy is rated substantial.

1. The Lebanese Republic is divided into five regional administrative districts, in Arabic *Mohafazat*. These districts are in turn divided into 29 counties, in Arabic *caza*.

33. **Water and wastewater.** The water and wastewater component was implemented quickly and effectively, thanks to the efficient SIU attached to the Ministry of Energy and Water. The Project was very successful in rehabilitating small water and wastewater systems where supplies could be put back into service quickly and where pollution from damaged facilities was the greatest. At the end of initial implementation period, 97 communities were provided with safe and reliable water systems, and 98 with small sewerage systems. After the liberation of South Lebanon, 5 additional water and sewerage systems were promptly rehabilitated, to the benefit of 140 urban and rural communities. All these systems are currently operated by the regional Water and Wastewater Offices.

34. Components financed by the supplementary loan were not so successful. The project rehabilitated or expanded three large water productions and distribution systems and wastewater treatment plants Ba'albeck, Metn and Barouk. Because complementary works, to be financed by other sources, have not been completed on time, these new facilities are partly or totally inoperative. In particular, the Ba'albeck wastewater treatment plant (13,000 cum/day capacity), completed in early 2002, is still inoperative because it is not connected to the sewerage system. The ongoing Bank-supported Ba'albeck Water and Wastewater Project (BWWP, Loan 71170-LE) has completed about 20 percent of the required sewer systems in the period 2003-2006 and selection of an operator for a two-year service contract is expected to be complete by the fall of 2006.

35. By the end of ERRP only about 38 percent of the population in the Ba'albeck – Nabi Chit area were connected to piped water supplies. Even then households were receiving only a third of the volume of water paid for due to intermittent supplies, a situation that is exacerbated by the proportion of subscribers not paying their bills – more than 65 percent.² The ongoing BWWP has completed by mid-2006 almost two-thirds of the new water distribution lines planned to connect the whole population of about 150,000 and full service delivery is expected by 2007-08.

36. **Solid Waste.** The implementation of the solid waste component by the newly established Ministry of Environment faced various obstacles that reduced its efficacy. These included lack of funds in municipalities (managed by the Ministry of Interior until the first municipal elections in 1998) that precluded purchase of lands for the sanitary landfills, local resistance, and a substantive change in the government's strategy in 1997. As a result, in 1996, at the inception of the SWEMP, the CDR decided not to go further with the solid waste component of the ERRP, and the undisbursed balance was allocated to the water and technical assistance components, the latter primarily for telecommunications.

37. The Project procured or repaired equipment for waste collection (2,760 containers, 80 compactor trucks, etc.) throughout the country. In Beirut, workshops were

2. Subscribers pay a flat fee of US\$90 per year for one cubic meter per day per household in the absence of metering; actual supply was about 330 liters per capita per day and thus the effective water tariff was US\$0.75 per cubic meter. Unserved households buy water from truck vendors and pay about US\$2.5 per cubic meter or ten times the tariff that connected households should have paid.

rehabilitated and 33 compactor trucks were rehabilitated or repaired. The project introduced successful participation in solid waste collection and treatment at Tripoli and in Greater Beirut. Tripoli and Beirut landfills are currently operated by private contractors, and in Tripoli, the existing coastal dumpsite was turned into a proper sanitary landfill, duly equipped.

38. Not all went as planned. In Greater Beirut, although the project rehabilitated the Karantina compost plant and the Amrossieh incinerator and briefly supported their operation and maintenance, the incinerator is no longer operational. Public protests about air pollution closed it down and it now functions as a sorting plant.

39. **Electricity.** The electricity component covering distribution and metering was implemented very quickly in Beirut and rural areas. Actually, the main actor in Project implementation was the Electricité du Liban (EdL) supported by a SIU and Electricité de France funded by the French Government; the role of the Ministry of Energy has been very marginal. To take into account the inaccuracies of the Damage Assessment Reports, flexible contracts were prepared with the Bank's approval. This allowed a rapid and visible improvement in the electricity services; in 1997, electricity was available on average 22 hours per day in Beirut compared with about 6 hours per day in 1992. A major accomplishment was rehabilitation of the 34 MW Markabi Hydroelectric Plant on the Litani River after the liberation of south Lebanon. Continued support for the sector and institutional reform was addressed through the Power Sector Restructuring Project approved in 1966. Although infrastructure was improved by ERRP the power sector has not solved substantial institutional and financing problems that jeopardize its viability.

40. **Education.** The physical rehabilitation of 21 schools and workshops, as well as the replacement of equipment, has been successful, although delayed by administrative constraints. On the other hand, the preparation of student textbooks and teacher guides has been a failure due to inappropriate consultant support and very few textbooks are reportedly still in use. An accelerated vocational training program in painting, plastering, bricklaying, carpentry, etc. successfully trained over 9,000 participants. A follow-on Bank project has built upon these initial rehabilitation efforts.³

41. **Housing.** This component was suspended after cheaper concessional financing made it irrelevant and the original funding was reallocated to the power sector rehabilitation. Subsequently it was revived following the liberation of south Lebanon and 14,175 housing grants were awarded to induce displaced families to return to the area.

Objective 2: The Borrower's institutional capacity in implementing the NERP was modestly strengthen and efficacy is rated modest.

42. The project financed the engineering, design and contract preparation activities for reconstruction or rehabilitation of the physical infrastructure and extensively supplemented the skills base of the participating ministries and line agencies. While it was anticipated that technical assistance would train and expand local capacity the impact

3. Vocational and Technical Education Project, part of the General Education Project.

was limited because of lack of counterparts. Many government posts remained vacant because most potential candidates were not interested in the working conditions and salaries of the public service.

43. The project had a substantial institutional impact on CDR's implementation of the NERP, particularly its facilitation of external support and measures aimed at raising the efficiency and transparency of public financial management and revenues. However, it should be recognized that many of the subsectoral institutional improvements in this period that were covered by the project also benefited from the assistance of other multilateral and bilateral partners involved in Lebanon's reconstruction.

44. An important achievement was the preparation of a Water Law (No. 221 of May 2000) that provides for the restructuring of the water and wastewater sector. The 22 local water companies operating in the 90's have been clustered in 5 regional Water Offices, public entities responsible for operation and maintenance of the water and wastewater facilities. The law also introduced the basis of cost recovery. A "Long Term Strategy for Solid Waste Management in Lebanon" was prepared by the CDR in 1995, based on the setting up of sanitary landfills in each of the 26 *Cazas* of the country, and composting plants in large cities. This strategy has not been officially endorsed.

45. During the preparation of the ERRP a study was completed that identified problems in all areas of operations of Electricité du Liban (EdL), the national electric power utility. Electricity losses (technical and non-technical) were over half of net available electricity and collections of billed electricity were only 80%. In addition, EdL lacked the financial and management autonomy for a normal operating utility, its organizational structure and human resources were inadequate to function effectively, internal financial management and controls were also weak and unreliable, and the operating deficit was about \$200 million per year requiring large government subsidies. The strategic program for Bank support that emerged out of the dialogue with the Government was to focus attention on the development of the new 220 kV transmission network since most of the generation investments had almost been completed. Unresolved issues included the internal restructuring of EdL to achieve efficiency and viability in the shortest possible time frame, and reforms of the power sector to attract private investments to support the needed improvements in distribution and future development of the sector. These were addressed in the follow-on Power Sector Restructuring and Transmission Expansion Project (Loan 41120-LN, 1996-2002) whose outcome was highly unsatisfactory because there was negligible progress on institutional reform.

46. In the telecommunication sector the TA financed a study of restructuring of the sector and a management contract to help the Ministry of Post and Telecommunications (MPT) to reconstruct, expand and manage the telephone systems. Due to the reluctance of the MPT to delegate the management to a private operator this support to the MPT was not very successful.

47. The TA also assisted in the preparation of the law on privatization, which was approved and ratified in 2002. Private mobile phone operators have been active until 2004, when the Government decided to terminate their licenses. As a result, the whole

telecommunication sector is currently operated by the Ministry utilizing two private sector management contractors.

48. Support to the Ministry of Finance was probably the most successful institutional intervention. Revenue collection was enhanced, economic and financial management was strengthened and the Value Added Tax system (VAT) was introduced to Lebanon.

SOLID WASTE AND ENVIRONMENT MANAGEMENT PROJECT

Objective 1, taking into account its reformulation at restructuring, was only partly achieved with considerable shortcomings and efficacy is rated negligible.

49. The initial objective, “the elimination of unsanitary and improper dumping of solid waste” was too ambitious and was not achieved and its efficacy is rated negligible. Efficacy was dominated by landfill issues. On project restructuring the scope of this objective was substantially reduced to only “demonstrate improved solid waste management in the collection and disposal services through the establishment of 2-4 sanitary landfills with private sector participation.” Even this revised objective was only partly achieved and efficacy is rated modest. Only one demonstration plant has been successful and private sector participation is gradually gaining momentum after a very slow start. Given that 78 percent of the project disbursement was against the initial development objective, the overall efficacy (weighted by disbursements) is rated negligible.

50. The effect of strong social resistance to solid waste disposal and treatment sites caused the initial development objective to be abandoned *de facto* in 1999 and officially in 2001. Project activities were focusing on only three landfills, Zahle, Ba'albeck and Jbeil. In Zahle, the landfill, completed in 1999, remained un-operated for the next two years due to local level financing problems - municipal resources are for waste collection, not for treatment. Subsequently, it started site operation in 2001 through a contract with private operator financed by the project. At the same time, another private operator was contracted by the project to collect waste.

51. Since project closure, operator remuneration has been provided by government subsidy through the CDR in accordance with the government’s decision in 2003 to finance all treatment costs throughout the country. This arrangement, although only properly working since January 2006, remains unsatisfactory because of the deteriorating macroeconomic situation and the risks of government cost-cutting.

52. Today, Zahle sanitary landfill is clearly a reference – and the only one – for the secondary cities in Lebanon, thanks to the sense of responsibilities of the Municipal Council and the professionalism of the operator. Thus, the municipality has been able to attract USAID funds for the extension of the sorting plan, the construction of a compost plant and a treatment plant, to be commissioned late 2006. More and more municipalities of the *Caza* (currently 16 out of 26) are now using the Zahle landfill services. The participating municipalities contribute to a fund managed by the municipality of Zahle, to cover the cost of replacing the landfill equipment, extending the landfill and other activities.

53. In Ba'albeck the municipality acquired land for the waste disposal site, an environmental impact assessment and bidding documents for the works were completed. Currently, the new municipal council – elected in 2004 – is looking for funds for the construction of the new sanitary landfill, and the closure and removal of the old dump, located on an historical site. Grant financing for the construction of a sorting plant and a compost plant has been awarded by the European Union but the issue of the landfill remains unsolved.

54. The site for the Jbeil sanitary landfill (Hbeline) has been acquired, and the EA satisfactorily completed. Because of considerable public concern that the landfill will also serve part of the Greater Beirut no significant progress has been made since 2002.

Objective 2, to strengthen the capabilities of CDR, MMRA and participating municipalities in the area of solid waste management was only partially achieved and its efficacy is rated modest.

55. Training manuals on waste collection, environmental assessment, public consultation, litter management, street sweeping services and technical notes on sanitary landfills were prepared, and workshops on their use were completed but there are no indicators that can be used to assess impact. Although the compost marketing study was fully completed, the hospital waste study was abandoned because of the social resistance to the proposed site for the hospital specialized incinerator.

56. A national strategy for solid waste management was developed by the Ministry of Environment from the recommendation of a national workshop in 1999.⁴ The strategy promoted waste minimization programs and a gradual phase-in of source separation, and use continued use sanitary landfills for the foreseeable future. The strategy falls short on setting waste reduction targets and defining incentives and instruments to encourage waste minimization. Subsequently this strategy ran into problems because key institutional stakeholders could not reach a consensus on how to manage and regulate the sector and allocate responsibility. Currently, municipalities manage solid waste independently and because of diseconomies of scale this severely disadvantages rural areas and small towns.

57. The project substantially supported development of technical options and training for solid waste management but there are no indicators for its impact on overall sector management and strategy that still appears to be under discussion a decade after the project was approved. Private sector participation (PPP) in solid waste collection and management did occur at the Zahle project site but is not clear if this can be unambiguously attributed to the Bank's support. USAID, the EU and UNDP supported PPP and community participation for solid waste management during this period, as did the government for Greater Beirut, and these efforts continue.

4. Workshop on "Waste Management Strategy for Lebanon." Organized by the MoE, METAP and the World Bank. Beirut. May 7-9, 1999.

58. The Coastal Zone Management Study was dropped at restructuring and a separate Coastal Zone Pollution Control and Water Supply project costing US\$308 million was approved by the Bank in 1997 (Loan 4136-LE).⁵ Like the SWEMP, the coastal zone project ran into strong public and political opposition because of site specific objections to the Kesrouan wastewater treatment works. In consequence, because the government could not obtain parliamentary ratification, the loan never became effective and lapsed after 18 months.

Efficiency

EMERGENCY RECONSTRUCTION AND REHABILITATION PROJECT

59. There were no indicators for efficiency because of the nature of the project and the lack of ex-ante formal economic or financial analysis, and lack of a reliable baseline. Total Bank preparation and preparation costs were only 0.5 percent of total project cost and this is relatively low by Bank standards. Within the project several infrastructure improvements yielded acceptable and satisfactory rates of return – the Markabi Hydropower plant for example yields an estimated economic rate of return of 12 percent. During the field assessment IEG requested additional information on the financial aspects of utility performance but none was made available.⁶ Overall, despite the paucity of indicators, efficiency is rated as substantial.

SOLID WASTE AND ENVIRONMENT MANAGEMENT PROJECT

60. The principle project benefit was to be a substantial improvement to the environment. Specifically this was to include cleaning up accumulated refuse in urban areas and along the coastline, improving the management of existing sites and eliminating unsanitary and improper piles of refuse in public areas. Overall the project contributed only very modest improvements to the environment although the efficiency obtained at Zahle was substantial. The average costs of solid waste management using the low costs approaches piloted by the project is \$28/tonne at Zahle compared with the more technically demanding system independently established by the government in Beirut that costs \$110/tonne. On a technical basis and considering the shortfall on physical targets, efficiency is rated modest.

61. In terms of the Bank's efficiency, the Bank's costs were almost 8 percent of the total project costs – an order of magnitude greater than they would have been if the project had disbursed as planned – yet little was achieved even on the institutional objectives. On both counts, implementation efficiency is rated negligible particularly as many of the initial risks had been successfully negotiated by ERRP. Considering the efficiency of physical components and institutional aspects together, the overall efficiency is rated negligible.

5. Project Completion Note. January 1, 2001. This project is a good example of the convening power of the World Bank highlighted in para 20. The World Bank loan of US\$53.1 million was cofinanced by the European Investment Bank (US\$62 million) and Japan (OECF – 123.9 million) and the EU (US\$17.1 million.) With the non-effectiveness of this loan the EIB withdrew its funding that had been contingent on the Bank. Japan (OECF) proceeded to independently finance the components it had agreed to support.

6. Subsequent follow-up was frustrated by the outbreak of hostilities in July 2006.

Risks to Development Outcomes

62. Both projects have substantial risks to their development outcomes primarily because of the macroeconomic and political environment, and social concerns. At the time the projects were assessed by IEG (February 2006) good quality construction of the projects' infrastructure, allied with good standards of operation but modest standards of maintenance, posed moderate risks to their technical sustainability. Even so, these modest risks are threatened by generally inadequate cost recovery (para 35) and dependence on government subsidies. The damage caused by the recent Hezbollah-Israeli war to some infrastructure built by the ERRP was substantial; conversely the single successful solid waste disposal site at Zahle was unaffected.

63. Economic growth at 2 to 3 percent is less than half of that experienced immediately post-war. Much of this is because Lebanon's current economic policies are not conducive to productivity increasing investments (CAS 2006). By the end of 2005 Lebanon's public debt had reached US\$38 billion or about 170 percent of GDP, the highest ratio in the world. While debt restructuring following the 2003 Paris II Conference reduced the debt service by about a third to 11 percent of GDP this still puts considerable pressure on government to reform its finances, particularly for subsidies to the 64 public sector utilities and enterprises.

64. Prime areas of risk to the projects' development outcomes are the large subsidies to Electricité du Liban (discussed in para 45) that were about 1.5 percent of GDP (US\$326 million) in 2004, and municipal finances. Municipal finances are heavily burdened with the operational costs of solid waste management and in 2003, for example, this formed almost half of the budgetary support (US\$ 116 million) supplied through the extra-budgetary Independent Municipal Fund that is not subject to parliamentary approval. Recent Bank AAA – the Country Financial Accountability Assessment (May 2005) – makes a strong recommendation that this lack of public accountability for IMF's budget be rectified. Should it be then it is likely that budget request will be challenged by parliament as has happened for public works and transportation, hydraulic and electric resources, and environment – all sectors supported by the assessed projects. In the period up to 2003, parliament reduced their budget requests of these sectors by 50 to 60 percent compared with the national average reduction of about 11 percent. And recently the head of the Association of Banks in Lebanon (the largest holders of the government's debt) argued that “the state must end waste in many ministries and named Electricité du Liban as the best example of squandered resources” (The Daily Star, September 27, 2006.) Thus external and internal pressure for reform may jeopardize future financing of solid waste management in Lebanon.

Bank Performance

65. Bank performance on ERRP is rated as satisfactory on quality at entry and supervision and was overall rated as satisfactory. The Bank was extremely receptive and responsive to the country's urgent reconstruction needs, preparing the project in six months, and was very effective in garnering and coordinating support with other development partners. Although initial damage estimates proved faulty, the design of the project allowed the Bank to make timely adjustments as rehabilitation priorities changed.

While the Bank was overoptimistic about the time needed to complete rehabilitation and the existing capacity, this is not unusual in emergency situations, particularly as the Bank had been absent from Lebanon during the period 1977-91. The extension of the project by more than 5 years was unsatisfactory but it did enable several key policy reforms to be introduced.

66. Overall Bank performance on SWEMP is rated as unsatisfactory. The primary reasons are that problems emanating from inadequate appraisal plagued project implementation and led to extremely modest outcomes. The weak institutional status and capacity of the municipalities was overlooked, the social aspects of consensus building were underestimated, and insufficient resources were allotted to understanding and mitigating social distrust on the government and the technical solutions proposed – and this continued for most of the project’s implementation.

67. Quality of SWEMP at entry was unsatisfactory. An in-depth socio-economic assessment would have revealed that there was a wide range of differing views in the municipalities and *Cazas* about how solid waste should be managed in Lebanon notwithstanding the government’s sector strategy. There would have been time to forge a consensus on a solid waste management strategy before embarking on a national program because the ERRP had provided basic equipment to enable waste collection. If more attention had been given to building local and national awareness in project design the subsequent public objections to project activities may have been averted. Local municipalities outside the project had proved to be quite creative – and highly aware of local feelings on associated environmental impacts and what was acceptable to their constituents. Thus in the short term the problems were contained and managed at local levels according to local preferences, as for example in Greater Beirut.

68. Supervision of SWEMP was unsatisfactory. The Bank should have been more proactive in restructuring the project and/or cancelling the loan when implementation faltered soon after effectiveness. Even then it took the Bank until 1999 before it exerted pressure on the government to substantially modify the project scope and objectives. Subsequently restructuring was delayed because of resistance from Ministry of Finance to any cancellation of World Bank loans in order to avoid loss of confidence in Lebanon’s financial markets under the prevailing macroeconomic situation. In the circumstances, and because of continued inability of project design to factor in measures to assuage public and political concerns on technical solutions, it would have been better to cancel the project and use alternative and more appropriate instruments to address macroeconomic issues.

Borrower Performance

69. Borrower performance on ERRP was satisfactory. CDR, as the government’s implementing agency, was very effective at coordinating with the donors that contributed to the NERP and ERRP, planning the rehabilitation effort and managing the complex array of government activities needed to establish the recovery program, and at contract management. CDR was also directly involved in managing the studies and consultants in the technical assistance component except those for the Ministry of Finance. Government was effective in passing new laws and regulations (for water, telecommunications and

electricity) but subsequent implementation has been patchy. Thus the implementing agency and government performance is rated as satisfactory.

70. In SWEMP the performance of government and implementing agencies is rated unsatisfactory. In this project the foci of activities moved to sector ministries, line agencies and municipalities, specifically the Ministry of Environment (MoE) and the Ministry of the Interior and Municipalities (MIM.) MIM froze funding to the project 1999-2001 effectively closing it down and obstructing progress. MIM's and MOE's support to CDR on site selection and public consultations was also very poor. Both ministries proved to be very weak at sector coordination because of inadequate capacity and the politicization of policies affecting municipal management of utilities. While there was much discussion of sector policy within government, academia the NGOs and civil society, ineffective ministerial leadership led to indeterminate outcomes on critical policy issues. Unfamiliarity with Bank procedures, particularly for procurement, also slowed project implementation. As a result, for SWEMP the rating for overall borrower performance is rated as unsatisfactory.

Looking Forward and Lessons

71. Government efforts remain concentrated on slowly expanding infrastructure for water supply, solid waste management and electricity and less on sector reform, although there were notable achievements in the Ministry of Finance and Telecommunications. Institutional issues requiring cross-sectoral coordination have made little progress. Attention to improving cost recovery, demand management and environmental conservation has languished as government continues to subsidize the delivery of basic services on response to political pressure. What little attention there was to long-range planning, conservation, trade-offs, and efficiency improvements has become hostage to the uncertain political climate and inability to bridge sectarian differences for the common good. The most recent 34-day war between Hezbollah and Israeli starting July 2006 underscores the tremendous governance challenges in Lebanon in which political authority is diffused, by design, among various sects and branches of government.

72. The war killed 1,100, injured 4,000, displaced over a million people and devastated infrastructure and the economy. In many respects the sectarian divides and poor governance has recreated the emergency rehabilitation situation that Lebanon found itself in the early 1990s. The damage to infrastructure assisted by ERRP and SWEMP is unknown. According to preliminary estimates, overall direct and indirect damage may have reached \$7-9 billion. Direct damage to civilian infrastructure such as bridges, roads, power stations, telecommunication systems and the airport, as well as damage to residential and commercial buildings, is estimated at \$3.6 billion. Indirect economic losses and opportunity costs amount to \$3-6 billion. The hardest hit sector is tourism, which was expected to bring in 2-3 billion dollars to the economy and the government has registered a drop of \$1 billion in projected revenues from VAT, other taxes and customs. The losses of the private sector, which has recorded a sharp fall in business

activity, have varied widely and have been hardest to assess as this sector is still suffering from the general economic slowdown.⁷

73. A major consequence of the war has been a sharp setback to public finances. The Paris II reform plan agreed in 2002 aimed to assist government to reduce fiscal imbalances, maintain fiscal stability and restore growth. The CAS (2006) notes that only the second pillar – fiscal stability – was achieved through an injection of \$2.4 billion for restructuring of loans. Lack of consensus on the role of public enterprises and provision of public goods and insufficient technical preparation hindered reduction of fiscal imbalances, as did growing opposition to further fiscal adjustment. The effects of the war exacerbate an already difficult situation. Government revenues are projected to drop by \$1 billion while spending is set to increase by \$600 million to pay for emergency relief and reconstruction. More recently, the Finance Minister stated that the total budget deficit is projected to reach \$3.85 billion dollars by the end of the year, almost twice the total deficit for 2005. This will add to the already massive public debt, which is now expected to reach \$41 billion by the end of the year pushing up the debt-to-GDP ratio to record highs, from 175% in 2005 to more than 190% by the end of 2006. Likely consequences of the growing public debt will be that financing for operation and maintenance of public infrastructure provided by ERRP and SWEMP will be further threatened (para 64.)

74. Generally, inefficient water authorities charge prices considerably below the cost of supply and unaccounted-for-water are typically about 60 percent due to faulty distribution systems and theft. Cost recovery is low and this threatens the sustainability of existing infrastructure. Lack of national resolve on solid waste management threatens health and environmental quality. The master plan for solid waste management is focused on landfills contracted to the private sector utilizing a modern fleet of waste disposal trucks and equipment, covers 40 percent of the population living in greater Beirut and large coastal cities – but neglects rural areas. Inadequate collection and disposal of solid waste, particularly in rural areas, has led to indiscriminate dumping in 80 percent of villages and open burning in the remainder. Little has changed in 15 years.

75. The continued importance of sustainable natural resource and environmental management is recognized by the Bank and forms the third pillar of the 2006 CAS. However, even though a Bank proposal has been drafted to address this strategically and to seek support and consensus of key stakeholders, the CAS proposes that no action will be taken until there is a national consensus on strategy and solution to the governance issues. And it is likely, as before, that essential institutional strengthening and reform in the primary water supply, sanitation, solid waste and electricity service sectors will be sidelined in the new national reconstruction program following the July 2006 war. As a national consensus on solid waste management seems unlikely in the short to medium term, the Bank may consider supporting additional pilot projects and PPP in the sector to overcome the information asymmetry that thwarts a consensus on how to proceed.

76. An international Donor Conference held in Stockholm at the end of August 2006 agreed on initial steps to assist Lebanon's reconstruction. About \$940 million was

7. Economic Intelligence Unit. Lebanon – Country Report. September 2006.

pledged for emergency relief projects, the rehabilitation of infrastructure and schools in the south and the de-mining of border areas. This added to earlier pledges by Arab countries of more than \$1 billion that including \$500 million from Saudi Arabia, \$300 million from Kuwait, and a further \$300 million from Qatar. The actual disbursement of these funds has been slowed by concerns over the government's efficiency, the transparency of reconstruction procedures, and intense competition between the government and Hezbollah for the management of, and control over, the reconstruction process.⁸ To alleviate concerns that the reconstruction process will not be marred, as in the past, by lack of transparency, waste, corruption and mismanagement, Lebanese officials have indicated that the funds will be placed in a special account to be overseen by the Lebanese government, the UN and the World Bank.

Lessons

77. Experience with this project confirms three IEG lessons:

Lesson 1. *Avoid over-specifying the details of post-conflict reconstruction and give adequate attention to institutional reform and capacity-building.* One of the main reasons for the success of Lebanon's ERRP was the flexibility introduced at the very origin of the project that allowed re-allocations of funds between sectors according to demand and readiness for implementation. Failure to address systemic institutional problems and capacity constraints in parallel with the restoration of physical infrastructure may allow continuation of out-dated practices, market failures and low levels of efficiency.

Lesson 2. *Big bang approaches to solid waste management do not work when political consensus and good governance are lacking.* The failure of SWEMP stems mainly from the lack of consensus on the government's overall strategy for solid waste management albeit with some successful exceptions locally. Continued debate on the best way forward among national and local politicians, NGOs and businessmen, combined with strong local resistance to dump sites, effectively halted implementation and the project failed. In the few places where local political consensus was achieved – following long, patient and transparent dialogue built on clear information and sound technical advice on alternatives – the pilot project was successful.

Lesson 3. *In the absence of national consensus on environmental management it is better to develop local solutions that can later be scaled up.* In the case of Lebanon's solid waste management the primary issue appears to be lack of information dissemination and little practical experience with solid waste disposal. Development of pilots and study tours to orientate decision-makers and NGOs would inform the contentious debate and pave the way for practical solutions.

8. Oxford Analytica. October 4, 2006.

Annex A. Basic Data Sheet

Emergency Reconstruction and Rehabilitation Project (Loan 3562-LE)

KEY PROJECT DATA (AMOUNTS IN US\$ MILLION)

	<i>Appraisal estimate</i>	<i>Actual or current estimate</i>	<i>Actual as % of appraisal estimate</i>
Total project costs	224	294.8	131
Loan amount	175	219.7	125
Cofinancing	10	30.4	304
Cancellation	-	5.3	-

CUMULATIVE ESTIMATED AND ACTUAL DISBURSEMENTS

	<i>FY93</i>	<i>FY94</i>	<i>FY95</i>	<i>FY96</i>	<i>FY97</i>	<i>FY98</i>	<i>FY99</i>	<i>FY00</i>	<i>FY01</i>	<i>FY02</i>	<i>FY03</i>
Appraisal estimate (US\$M)	20.0	70.0	135.0	165.0	175.0	175.0	175.0	175.0	175.0	175.0	175.0
Actual (US\$M)	0	23.9	81.7	110.0	134.9	155.5	174.9	186.7	196.6	212.1	219.6
Actual as % of appraisal	0	34	60	66	77	88	99	106	112	121	125

Date of final disbursement:

PROJECT DATES

	<i>Original</i>	<i>Actual</i>
PCD	-	02/06/1992
Appraisal	-	11/17/1992
Board approval	-	03/04/1993
Effectiveness	-	09/17/1993
Closing date	12/31/1996	03/01/2002

STAFF INPUTS (STAFF WEEKS)

	<i>No of staff weeks</i>	<i>US\$ ('000)</i>
Identification/preparation	-	380,258
Appraisal/negotiations	-	-
Supervision	-	937,465
Completion	-	20,000
Total	-	1,337,723

Notes: The costs figures shown above associated with Identification/Preparation and Supervision exclude:

(1) Identification/Preparation TF026410 - \$ 10,070

(2) Supervision TF039389 - \$ 37,774

MISSION DATA

<i>Stage of project cycle (Month/date/year)</i>	<i>No. of persons</i>	<i>Specializations represented</i>	<i>Implementati on progress</i>	<i>Develop ment objective</i>
Identification/Preparation*				
12/30/1992				
Appraisal/Negotiation				
12/30/1992	7	SR.MUNICIPAL ENGINEER, REG. PROC. ADVISOR, SR. FIN. ANALYST, SR. FIN. OFFICER, PR.MUNICIPAL ENGINEER, POWER ENGINEER, URBAN SPECIALIST		
5/8/1993	7	SR.MUNICIPAL ENGINEER, REG. PROC. ADVISOR, SR. FIN. ANALYST, SR FIN. OFFICER, PR.MUNICIPAL ENGINEER, POWER ENGINEER, URBAN SPECIALIST		
Supervision				
8/19/1993	3	URBAN SPEC. SR. FIN. ANALYST, SR. FIN. OFFICER, PR. MUNICIPAL ENGINEER		
11/16/1993	5	SR.MUNICIPAL ENGINEER, SR. FIN. ANALYST, ENVIR. SPECIALIST, PR. MUNICIPAL ENGINEER, POWER SPECIALIST		
2/4/1994	3	SR. FIN. SNALYST, PRIVATE SECTOR SPEC., SR. POWER SPEC.		
4/30/1994	5	CONSULTANT, SR. FIN. ANALYST, PRIV. SECT. SPEC., PR. MUNICIPAL ENGINEER, SR. POWER SPEC.		

<i>Stage of project cycle (Month/date/year)</i>	<i>No. of persons</i>	<i>Specializations represented</i>	<i>Implementati on progress</i>	<i>Develop ment objective</i>
7/23/1994	5	CONSULTANT, SR. FIN. ANALYST, PRIV. SECT. SPEC., PR. MUNICIPAL ENGINEER, SR. POWER SPEC.	HS	S
10/14/1004	4	CONSULTANT, SR. FIN. ANALYST, PRIV. SECT. SPEC., PR. MUNICIPAL ENGINEER	HS	HS
7/19/1995	4	CONSULTANT, SR. FIN. ANALYST, SR. PSD SPEC., PRINC. ENGINEER	HS	S
2/11/1996	3	CONSULTANT, SR. FIN. ANALYST, SR. PROJECTS OFFICER	S	S
7/25/1996	3	SR. FIN. ANALYST, 2 HUMAN RESOURCES SPEC.	S	S
7/14/1997	1	SR. SANITARY ENG.	S	S
9/30/1997	1	SR. SANITARY ENG.	S	S
12/15/1997	2	SR. SANITARY ENG., ENGINEER	S	S
5/12/1998	2	SR. SANITARY ENG. ENGINEER-CONSULTANT	S	S
2/16/1999	3	SECTOR LEADER, FIN. ANALYST, SANITARY ENG.	S	S
11/18/1999	2	FIN. ANALYST, SANITARY ENG.	S	U
2/2/2000	2	FIN. ANALYST, SANITARY ENG.	S	S
6/25/2000	2	FIN. ANALYST, SANITARY ENG.	S	S
12/8/2000	2	FIN. ANALYST, SANITARY ENG.	S	S
4/20/2001	2	FIN. ANALYST, SANITARY ENG.	S	S
12/1/2001	4	FIN. ANALYST, SANITARY ENG., FINANCIAL MANAGEMENT SPEC., PROC. SPEC.	S	S
ICR				
5/31/2002	2	SR. FIN. ANALYST, SR. ECONOMIST - CONSULTANT		

* Because of the emergency nature of the project, there was no identification/preparation missions prior to Appraisal. The date shown above for identification/preparation mission implies it was done along with appraisal.

OTHER PROJECT DATA

Borrower/Executing Agency:

FOLLOW-ON OPERATIONS

<i>Operation</i>	<i>Credit no.</i>	<i>Amount (US\$ million)</i>	<i>Board date</i>
Ba'albeck Water and Wastewater Project	IBRD 71170	43.1	06/04/2002
Industrial/Hazardous Waste Mgmt Project	Technical assistance	0.18	12/31/2001
First Municipal Infrastructure Project	Ln. 7026	80.0	06/22/2000

Solid Waste Environmental Management Project (Loan 3899-LE)**KEY PROJECT DATA (AMOUNTS IN US\$ MILLION)**

	<i>Appraisal estimate</i>	<i>Actual or current estimate</i>	<i>Actual as % of appraisal estimate</i>
Total project costs	135	11.2	8
Loan amount	55	10.1	18
Cofinancing	55	0	-
Cancellation	-	13.8	-

CUMULATIVE ESTIMATED AND ACTUAL DISBURSEMENTS

	<i>FY96</i>	<i>FY97</i>	<i>FY98</i>	<i>FY99</i>	<i>FY00</i>	<i>FY01</i>	<i>FY02</i>	<i>FY03</i>	<i>FY04</i>	<i>FY05</i>
Appraisal estimate (US\$M)	2.6	9.2	24.8	38.2	49.2	53.4	55	55	55	55
Actual (US\$M)	0	0.2	0.4	3.9	4.5	5.9	6.1	8.2	9.9	9.9
Actual as % of appraisal	-	2	16	10	9	11	11	14	18	18

Date of final disbursement:

PROJECT DATES

	<i>Original</i>	<i>Actual</i>
PCD	-	12/10/1993
Appraisal	-	10/16/1994
Board approval	-	06/06/1995
Effectiveness	-	08/13/1996
Closing date	12/31/2001	12/31/2003

STAFF INPUTS (STAFF WEEKS)

	<i>No of staff weeks</i>	<i>US\$ ('000)</i>
Identification/preparation	n.a.	n.a.
Appraisal/negotiations	n.a.	n.a.
Supervision	161.3	654.9
Completion	6.8	45.5
Total	213.3	861.0

MISSION DATA

<i>Stage of project cycle (Month/date/year)</i>	<i>No. of persons</i>	<i>Specializations represented</i>	<i>Implementati on progress</i>	<i>Developme nt objective</i>
Supervision				
07/19/1995	4	MUNICIPAL ENGINEER (1); ENVIRONMENTALIST (1); SR. FINANCIAL ANALYST (1); PRIVATE SECTOR DEV. (1)	S	S
02/11/1996	5	CONSULTANT (1); ENVIRONMENTALIST (2); SR. FINANCIAL ANALYST (1); PRIV. SPECIALIST (1)	S	S
05/17/1996	1	SR FINANCIAL ANALYST (1)	S	S
00/00/0000	1	SR. ENV. SPEC. (1)	S	S
10/30/1996	2	SR. OPERATIONS OFFICER (1); SR. ENVIRONMENTAL SPEC (1)	U	S
04/16/1997	2	PR. ENVIRONMENTAL SPEC (1); SOLID WASTE SPECIALIST (1)	S	S
01/27/1998	3	PR. ENVIRONMENTAL SPEC (1); SOLID WASTE SPECIALIST (1); WASTE MANAGEMENT SPEC (1)	U	S
08/13/1998	1	PR. ENV. SPECIALIST (1)	S	S

<i>Stage of project cycle (Month/date/year)</i>	<i>No. of persons</i>	<i>Specializations represented</i>	<i>Implementati on progress</i>	<i>Developme nt objective</i>
05/16/1999	3	REGIONAL ENVIR. COORD. (1); SOLID WASTE MGT SPEC. (1); SR. ENVIRON. SPECIALIS (1)	U	U
12/22/1999	3	PORTFOLIO MANAGER (1); TASK TEAM LEADER (1); ENVIRONMENTAL SPECIAL. (1)	U	U
05/27/2000	4	TEAM LEADER (1); SOLID WASTE/ENVIRONMEN (1); SOLID WASTE (1); PROCUREMENT (1)	U	U
11/25/2000	1	TEAM LEADER (1)	U	U
01/26/2001	6	TEAM LEADER (1); SOLID WASTE SPECIALIST (1); PRIN. FIN. SPECIALIST (1); PROCUREMENT SPECIALIST (1); FM SPECIALIST (1); ENVIRON. SPECIALIST (1)	U	U
06/16/2001	2	TEAM LEADER (1); SOLID WASTE MANAGEMENT (1)	U	U
09/15/2001	1	TASK TEAM LEADER (1)	S	S
04/23/2002	4	TEAM LEADER (1); CO- TEAM LEADER (1); PROCUREMENT SEPCIALIST (1); FM SPECIALIST (1)	S	S
11/13/2002	1	TTL & ENV SPECIALIST (1)	U	S
08/26/2003	4	TASK TEAM LEADER (1); PUBLIC PARTICIPTION (1); PROCUREMENT SPECIALIST (1); FINANCIAL MANAGMENT (1)	U	U
ICR				
08/26/2003	4	TASK TEAM LEADER (1); PUBLIC PARTICIPTION (1); PROCUREMENT SPECIALIST (1); FINANCIAL MANAGMENT (1)		

OTHER PROJECT DATA

Borrower/Executing Agency:

FOLLOW-ON OPERATIONS

<i>Operation</i>	<i>Credit/Loan no.</i>	<i>Amount (US\$ million)</i>	<i>Board date</i>
Ba'albeck Water and Wastewater Project	IBRD 71170	43.1	06/04/2002
Industrial/Hazardous Waste Mgmt Project	Technical assistance	0.18	12/31/2001
First Municipal Infrastructure Project	Ln. 7026	80.0	06/22/2000