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PROJECT PERFORMANCE ASSESSMENT REPORT

LATVIA

LIEPAJA ENVIRONMENT PROJECT
LOAN 3814 -LV

October 7, 2003

Sector and Thematic Evaluation Group
Operations Evaluation Department

CURRENCY EQUIVALENTS (ANNUAL AVERAGES)

Currency Unit = Latvian Lats (LVL)

1995	US$1.00	LVL 0.57
2000	US$1.00	LVL 0.59

ABBREVIATIONS AND ACRONYMS

BOD	Biochemical oxygen demand
CEM	Country Economic Memorandum
ECA	Europe and Central Asia Region
EMC	Environmental Management Component
ERR	economic rate of return
EU-LSIF	European Union Large Scale Infrastructure Facility
EU PHARE	European Union Assistance Program to Eastern and Central Europe
FRR	financial rate of return
FSU	Former Soviet Union
HELCOM	Helsinki Commission
ICR	Implementation Completion Report
IFI	international financial institution
JCP	Joint Comprehensive Environmental Action Program
LWWE	Liepaja Water and Wastewater Enterprise
LWC	Liepaja Water Company Limited
MTR	Mid-term Review
O&M	operations and maintenance
OED	Operations Evaluation Department of the World Bank
PAD	Project Appraisal Document
PCD	Project Concept Document
PIU	Project Implementation Unit
PPAR	Project Performance Assessment Report
QAG	Quality Assurance Group
SAR	Staff Appraisal Report (a predecessor of the PAD)
TA	technical assistance
WTP	willingness to pay
UFW	unaccounted-for water
WWF	World Wide Fund for Nature
WWTP	Wastewater Treatment Plant

FISCAL YEAR

Government: January 1—December 31

Director-General, Operations Evaluation	:	Mr. Gregory K. Ingram
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OED Mission: Enhancing development effectiveness through excellence and independence in evaluation.

About this Report

The Operations Evaluation Department 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, OED annually assesses about 25 percent of the Bank's lending operations. 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. The projects, topics, and analytical approaches selected for assessment support larger evaluation studies.

A Project Performance Assessment Report (PPAR) is based on a review of the Implementation Completion Report (a self-evaluation by the responsible Bank department) and fieldwork conducted by OED. To prepare PPARs, OED staff examine project files and other documents, interview operational staff, and in most cases visit the borrowing country for onsite discussions with project staff and beneficiaries. The PPAR thereby seeks to validate and augment the information provided in the ICR, as well as examine issues of special interest to broader OED studies.

Each PPAR is subject to a peer review process and OED management approval. Once cleared internally, the PPAR is reviewed by the responsible Bank department and amended as necessary. 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.

About the OED Rating System

The time-tested evaluation methods used by OED are suited to the broad range of the World Bank's work. The methods offer both rigor and a necessary level of flexibility to adapt to lending instrument, project design, or sectoral approach. OED evaluators all apply the same basic method to arrive at their project ratings. Following is the definition and rating scale used for each evaluation criterion (more information is available on the OED website: http://worldbank.org/oed/eta-mainpage.html).

Relevance of Objectives: 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). *Possible ratings:* High, Substantial, Modest, Negligible.

Efficacy: The extent to which the project's objectives were achieved, or expected to be achieved, taking into account their relative importance. *Possible ratings:* High, Substantial, Modest, Negligible.

Efficiency: 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. *Possible ratings:* High, Substantial, Modest, Negligible. This rating is not generally applied to adjustment operations.

Sustainability: The resilience to risk of net benefits flows over time. *Possible ratings:* Highly Likely, Likely, Unlikely, Highly Unlikely, Not Evaluable.

Institutional Development Impact: The extent to which a project improves the ability of a country or region to make more efficient, equitable and sustainable use of its human, financial, and natural resources through: (a) better definition, stability, transparency, enforceability, and predictability of institutional arrangements and/or (b) better alignment of the mission and capacity of an organization with its mandate, which derives from these institutional arrangements. Institutional Development Impact includes both intended and unintended effects of a project. *Possible ratings:* High, Substantial, Modest, Negligible.

Outcome: The extent to which the project's major relevant objectives were achieved, or are expected to be achieved, efficiently. *Possible ratings:* Highly Satisfactory, Satisfactory, Moderately Satisfactory, Moderately Unsatisfactory, Unsatisfactory, Highly Unsatisfactory.

Bank Performance: The extent to which services provided by the Bank ensured quality at entry and supported implementation through appropriate supervision (including ensuring adequate transition arrangements for regular operation of the project). *Possible ratings:* Highly Satisfactory, Satisfactory, Unsatisfactory, Highly Unsatisfactory.

Borrower Performance: The extent to which the borrower assumed ownership and responsibility to ensure quality of preparation and implementation, and complied with covenants and agreements, towards the achievement of development objectives and sustainability. Possible ratings: Highly Satisfactory, Satisfactory, Unsatisfactory, Highly Unsatisfactory.

Contents

This report was prepared by George T. Keith Pitman, who assessed the project in July 2002. The report was edited by William Hurlbut, and Soon-Won Pak provided administrative support.

Principal Ratings

	*ICR**	*ES**	*PPAR*
Outcome	Satisfactory	Satisfactory	Satisfactory
Sustainability	Likely	Likely	Likely
Institutional Development Impact	Substantial	Substantial	High
Bank Performance	Satisfactory	Satisfactory	Satisfactory
Borrower Performance	Satisfactory	Satisfactory	Satisfactory

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

Key Staff Responsible

Project	*Task Manager*	*Division Chief/ Sector Director*	*Country Director*
Appraisal	Stephen Lintner	Geoffrey Fox	Basil G. Kavalsky
Completion	Inesis Kiskis	John A. Hayward	Basil G. Kavalsky

Preface

This is the Performance Assessment Report (PAR) prepared by the Operations Evaluation Department (OED) for the Liepaja Environment Project, which was approved in December 1994 for an IBRD loan of US$4.00 million. A total of US$12.77 million in cofinancing for the US$22.38-million project was provided by the EU, Denmark, Finland, Sweden, Nordic Environment Finance Corporation, and World Wide Fund for Nature, and supplemental assistance from the Netherlands. The project was closed as planned in March 2000 and fully disbursed.

This report is based on the Implementation Completion Report (ICR) prepared by the Europe and Central Asia Region (Report no. 20967, September 28, 2000), the Memorandum and Recommendation of the President (Report no. P6402, November 8, 1994), Staff Appraisal Report (Report no. 13429-LV, November 8, 1994), loan documents, project files, and discussions with Bank staff. An OED mission visited Latvia and met stakeholders in Denmark, Finland, and Sweden in July 2002 to discuss the effectiveness of the Bank's assistance with the government of Latvia, development and financing partners, project implementing agencies, private sector agencies, and nongovernmental organizations. The cooperation and assistance of central and municipal government officials, management and staff of the Liepaja water utility, chairmen and counselors of the Jurkalne and Rucava municipal councils, nongovernmental stakeholders, and other interested parties are gratefully acknowledged.

This PPAR is part of a regional evaluation that included similar projects in Estonia and Lithuania. It assesses the outcome of the Bank's assistance, in partnership with several cofinanciers, to enable Latvia to reduce pollution to the Baltic Sea, reform a water and wastewater utility, and establish sustainable coastal zone management.

Following standard OED procedures, the draft PAR was sent to the borrower for comments and none were received. In accordance with the Bank's disclosure policy, the final report will be available to the public following submission to the World Bank's Board of Executive Directors.

Summary

The Latvia -Liepaja Environment Project was approved in December 1994 for an IBRD loan of US$4.00 million (Loan 3814-LA). A total of US$12.77 million in cofinancing for the US$22.38-million project was provided by the EU, Denmark, Finland, Sweden, Nordic Environment Finance Corporation, and World Wide Fund for Nature, and supplemental assistance from the Netherlands. The project was fully disbursed and closed as planned in March 2000.

The project was formulated under the 1992 Baltic Sea Joint Comprehensive Environmental Action Programme (JCP), which identified priority actions for the control of point source and non-point source pollution draining into the Baltic Sea and measures to improve water quality management of surface water, groundwater, coastal lagoons, and wetlands. Liepaja, a formerly closed military-industrial town with a population of 105,000 on the west coast and the country's third largest city, was identified as one of three municipal pollution "hot spots" in Latvia. The main objectives of the project were to reduce water pollution discharge to the Baltic Sea and Lake Liepaja, restore and enhance surface and groundwater quality and promote integrated coastal zone management and eco-tourism. These objectives were to be achieved by improving the quality, reliability, and cost efficiency of water supply and wastewater treatment and making the services financially sustainable, and facilitating local-level planning and investment in the coastal region. Significant technical assistance and twinning arrangements via cofinancing partners supported the modernization of service management to increase operational efficiency in Liepaja, and helped foster employment, tourism and conservation in two parishes located in the coastal region.

The outcome of the project was satisfactory, a result of the synergy generated by Latvia's partnership with the Bank, Nordic bilateral donors, the EU, and the World Wide Fund for Nature. Relevance was substantial given the need to clean up the Baltic Sea, Latvia's drive for EU accession, the desire to bring the formerly closed Liepaja military region back into the national economy, and dwindling public resources to subsidize inefficient utilities. Institutional development impact is rated as high, and efficacy is rated as substantial. The project successfully introduced modernized management that improved operation, maintenance, and financial management, and provided essential support to the government's devolution of services to autonomous and commercially oriented limited liability companies owned by municipalities. As a result, the quality of water and service provided to consumers increased, and the quantity of pollution discharged to the Baltic Sea substantially declined – in part because of economic slowdown, factory closure, and the effect of higher water prices. Even though water and wastewater tariffs were substantially raised, the utility is having difficulty in reaching covenanted debt coverage criteria because water sales fell by a about a third due to reduced demand and more efficient water use. However, the trend of financial indicators is towards financially sustainable ratios – albeit on a slower schedule than planned.

Environmental management activities supported by several donors were successfully promoted. An integrated coastal zone management framework and draft plan was developed, but because of evolving and differing stakeholder perspectives, and

reliance on external grants, it may be some time before a plan is finalized and implemented. Even so, the activities have facilitated local discussion of common issues, partnerships, good governance, development of entrepreneurs, and growth of tourism.

The ex-post economic rate of return (ERR) for the Liepaja water and wastewater utility was 6.5 percent largely because post-Soviet industrial closure and more efficient water use led to a decline in income from water sales. Even so, the ERR would be higher if environmental and tourism benefits were included and thus, efficiency is rated modest. Sustainability is rated likely because of project achievements and continued high borrower ownership and regional stakeholder support from Nordic, EU, and NGO development partners. In spite of the modest efficiency of physical components, overall project outcome is rated satisfactory because of the high level of institutional development achieved by the project and strong borrower ownership.

Borrower and Bank performance are rated satisfactory.

The experience of this project offers three lessons:

- Regionally-sponsored environmental initiatives in response to inter-governmental action plans provide good opportunities for the Bank to exercise its comparative advantage in leveraging institutional reform through targeted lending. When linked with grant funding from bilateral development partners it provides a powerful and influential lobby for reform.

- When designing and implementing regional environmental initiatives and their specific projects, significant benefits can be achieved by addressing infrastructure investments, environmental management activities and capacity building in an integrated manner. Mutliplier effects will be achieved by careful attention and support for development of local institutions and their human resources.

- It is important to fully understand the interests and institutional capabilities of the various local stakeholders, specifically for community based activities, and to factor in sufficient time and resources to build a consensus for reform and agreement on issues and longer-term objectives. Care should be taken to avoid project activities being solely driven by external partners as this can undermine local ownership.

Gregory K. Ingram
Director-General
Operations Evaluation

1. Background

1. Latvia, the second largest of the Baltic States, is bordered by Estonia to the north, Lithuania to the south, and Russia and Belarus to the east. It has a population of 2.6 million and regained its independence from the former Soviet Union in 1991. The transition from central planning to a market economy that followed in the 1990s was orderly but difficult, characterized by a significant decline in productivity as a result of the collapse of trading relations with Russia and other former Soviet republics. Although it has substantially recovered from these shocks, and GDP growth averaged 5 percent per annum in the 1999–2001 period, the government is running a fiscal deficit and unemployment is high, especially in rural areas. Since the mid-1990s Latvia's economic and development objectives have been driven by the EU accession process, which guided economic policymaking, and a drive toward harmonizing environmental standards with EU norms. The Bank's first Public Expenditure Review for Latvia (Report no. 12793, July 12, 1994) highlighted priority investment needs in energy, transport, and environmental services, including improved water supply and treatment. The Liepaja project was the first of four environmental institution-building projects assisting cleanup of the Baltic Sea.[1]

2. As a member of the Helsinki Commission (HELCOM), the government has agreed to implement national programs to clean up the Baltic Sea under the Joint Comprehensive Environmental Action Program (JCP). The program was devised to restore the Baltic Sea to a sound ecological balance and provide a framework to guide implementation by each state.[2] Latvia identified nine environmental "hot spots" for cleanup, three of which were municipal: Daugavpils, Liepaja, and Riga. The Bank agreed to assist and coordinate clean-up of Daugavpils and Liepaja, while the clean-up of Riga was assisted by EBRD and Nordic bilateral development partners.

3. Liepaja, Latvia's third-largest city with a population of 105,000, is an important commercial port and fishing harbor and home of several industrial enterprises, including food processing and metal works. It is situated on the northern end of a coastal spit behind which lies a 40-kilometer-long wetland depression containing Lake Liepaja in the north and Lake Pape in the south, just north of the border with Lithuania. In Soviet times Liepaja was a closed military city and submarine base covering some 2,000 hectares and ringed by countryside full of high-security facilities. The coastal waters outside Liepaja, Lake Liepaja (an ornithological reserve), and the City Channel connecting the lake with the Baltic Sea were severely polluted with untreated and partially treated industrial and domestic sewage, and contaminated with heavy metals.[3] The challenge of the project was to bring about

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1. The other environmental projects were: Lithuania-Klaipeda, signed December 1994; Estonia Haapsalu-Matsalu, signed April 1995; and Lithuania-Siauliai, signed December 1995.

2. Belarus, Czech Republic, Estonia, Latvia, Lithuania, Poland, the Russian Federation, Slovak Republic, and Ukraine.

3. Some 13,000 m^3/day of untreated sewage was discharge to Lake Liepaja, the City Channel, and the Military Harbor to the north supplemented by 10,000 m^3/day of partially treated sewage. A major problem was that the capacity of the existing wastewater treatment plant (WWTP) was severely strained by poorly maintained sewerage, which allowed infiltration of groundwater that accounted for half of the 56,000 m^3/day treatment capacity.

integrated management of this coastal zone to reduce pollution, meet international treaty commitments to reduce polluted discharges to the Baltic Sea, and provide a basis for tourism. In addition to promotion of eco-tourism and conservation activities, the project only tackled the pollution problems of Liepaja city because the magnitude of the problem at the naval base was unknown as this facility remained under Russian military control until well into the project.

4. The coastline north and south of Liepaja has high scenic value and fine beaches, but in Soviet times was a severely restricted area polluted by coastal discharges. Lake Pape (inland and 40 kilometers to the south) is an important stopping place on the East African European Flyway for migratory birds and a critical part of a corridor of wildlife habitats that includes the Curonian Lagoon in Lithuania and Matsalu Bay in Estonia.

2. The Project

5. **Objectives.** The overall goal of the project was to help re-integrate Liepaja and its region into the Latvian national fabric after more than 40 years as a closed Soviet military zone. This was to be achieved through devolving responsibility for environmental services to municipal governments, reducing the State's role in the economy by strengthening local authorities, restructuring and modernizing the water and wastewater sector, and strengthening environmental and ecosystem management. These tasks were articulated through five objectives (Table 1) and financed primarily through grants (Table 2).

3. Implementation

6. Implementation proceeded with few problems. The government established a steering committee, which although large, was effective[4] and successfully decentralized management of the water and wastewater component to the Liepaja Water and Wastewater Enterprise (LWWE, later renamed Liepaja Water Company, LWC hereafter). A small Project Implementation Unit (PIU) was established and, after training in language and on Bank procedures, proved to be very effective and efficient. Counterpart funds were initially problematic but were subsequently regular and adequate. The twinning arrangements got off to a slow start party due to the attention procurement needed from LWC's management. Twinning and other technical assistance was very good on technical support, but less effective at managerial reform due to entrenched attitudes — fortunately an issue that was resolved by LWC midway through the project. Accounting, billing, and collection procedures required and received the special attention they warranted, but not before the newly computerized accounting system had been replaced. The environmental management and conservation activities were slow to start partly because it took time to get stakeholders together, approve options and plans, and negotiate with external funders.

4. The Steering Committee had 20 members of whom 6 were drawn from central government (5 from DoE, one from the Ministry of Finance). The remained were drawn from the regional, city, and parish councils, the regional environmental protection committee, and the World Bank.

Table 1: Project Objectives and Cost at Appraisal

Objective	Components	Cost, US$ millions	
		Appraisal	Ex-post
1. Reduce discharge of partially treated and untreated wastewater to the Baltic Sea 2. Restore and enhance the surface and groundwater quality in Liepaja, the northern portion of Lake Liepaja, the City Channel and adjacent beaches on the Baltic Sea 3. Improve the quality, reliability and cost efficiency of water supply and sanitation services in Liepaja 4. Improve operational efficiency and management systems of the Liepaja Water and Wastewater Enterprise	**Water and Wastewater Improvement Component** Rehabilitate and expand the Liepaja water and wastewater system including equipment and works, engineering services, measures to reduce water demand and actions to control industrial discharges:		
	• Water Supply and Distribution	$1.79	$3.72
	• Sewerage and Wastewater Treatment	$11.48	$16.62
	• Project Implementation Unit and Contract Supervision	$1.17	$0.90
	• Technical Assistance and training	$0.51	$0.64
5. Promote environmentally sustainable management and development of the coastal zone, tourism and protected areas in and around Liepaja and Ventspils	**Environmental Management Component** Technical and financial support for the development and implementation of a management plan, including equipment and small scale works for (a) adjacent coastal and protected areas and (b) recreational and nature-based tourism in the Liepaja area.	$1.50	$1.50
	Price and Physical Contingencies	$4.72	-
	Total Cost	**$21.17**	**$23.38**

Table 2: Financing Arrangements (US$ millions)

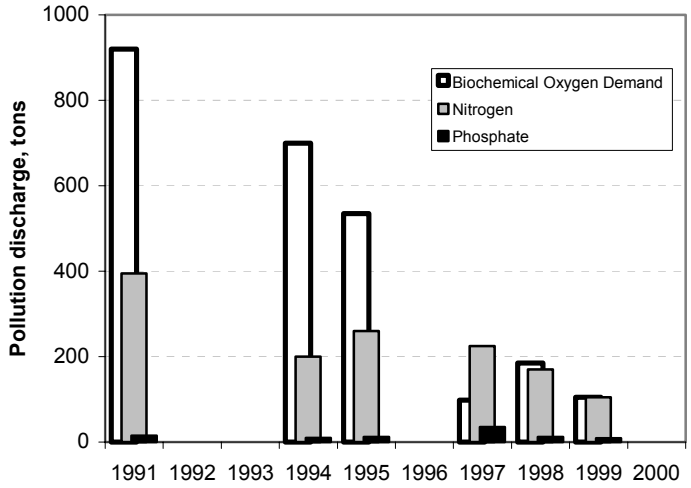
Financier	Type of Finance	Waste Water Improvement	Environmental Management	Total
IBRD Loan	Loan	3.80	0.20	4.00
Nordic Environmental Development Agency	Loan	2.00	0	2.00
Swedish International Development Agency	Grant	6.50	0	6.50
Ministry of Environment, Finland	Grant	2.30	0	2.30
EU (PHARE)	Grant	0.62	0	0.12
Ministry of Environment, Denmark	Grant	0	0.50	0.50
Other Donors including the Netherlands	Grant	0	0.80	0.80
Government of Latvia		5.41	0	5.41
Municipality of Liepaja		1.75	0	1.75
Total		**22.38**	**1.5**	**23.38**

4. Results

Objective 1: Environmental Quality Was Substantially Improved

7. **Pollution to the Baltic Sea was reduced.** Discharge of untreated and partially treated wastewater into the Baltic Sea from Liepaja town was substantially reduced and 96.5 percent of Liepaja's wastewater is now treated. Construction of interceptor sewers eliminated 14 sewage discharges to the City Channel and 8 to Lake Liepaja, and completion of a new wastewater treatment plant (WWTP) increased treatment capacity from 22,000 cubic meters per day to 55,000 cubic meters per day. An effective sewer leak detection program and greater-than-anticipated reconstruction significantly reduced groundwater infiltration to, and leakage from, the sewers. As a result of these improvements, and a decline in water consumption because of industrial closure and increased water tariffs, the volume of discharged pollutants fell dramatically (Figure 1). The volume of biochemical oxygen demand (BOD), nitrogen (N), and phosphorous (P) discharged to the Baltic Sea now meet HELCOM and project targets, although the concentration of N in treated wastewater effluent exceeds the HELCOM standard.[5]

Figure 1: Pollution Discharged to the Baltic Sea Declined Rapidly



Source: HELCOM. 2001. Baltic Sea Proceedings. No 83.
Note: No data available for 1992, 1993, 1996, and 2000.

Objective 2: Surface and groundwater quality was restored and enhanced

8. In the northern portion of Lake Liepaja, the City Channel, and adjacent beaches on the Baltic Sea surface and groundwater quality was improved but with some shortcomings. Raw sewage is no longer discharged by from Liepaja city to Lake Liepaja or the City Channel. Liepaja's southern beach (which is subject to a prevailing northerly longshore drift) has received a "blue flag" rating from the sanitary authorities and swimming is now permitted.[6] Because of the northward drift of near-shore pollution, some of the improvements

5. The HELCOM concentration standards for treated wastewater and achievements (1999) were as follows: BOD standard is 15 mg/l, achievement 3.7 mg/l; N standard is 12 mg/l, achievement is 16 mg/l; P standard is 1.5mg/l, achievement is 0.93 mg/l.

6. A direct link between cleaner beaches and project activities is conjectural as no data was systematically collected to allow before and after comparisons.

to this beach are a result of parallel cleanup activities supported by the Bank in Lithuania.[7] Even so, periodic spill problems from the oil export terminals in Butinge (Lithuania) and Ventspils create problems for Liepaja beaches when northerly and southerly winds blow.

9. Despite the improvements to the northern section of Lake Liepaja, four adjacent municipalities continue to discharge partially treated sewage into the lake, thus reducing its depth and jeopardizing improvements brought about by the project. In 2001, littoral municipalities accepted a comprehensive management plan and, in 2002, a project application was made for EU grants to implement a cleanup program.

10. Groundwater is the primary drinking water source in Liepaja. Reducing the leaks from the sewerage and water distribution system (para. 4.6) has almost eliminated pollution of groundwater and cross-contamination. Notwithstanding concern at appraisal that groundwater could be polluted by seepage from sludge storage lagoons, LWC has been unable to address the growing sludge storage problem, although a Bank-finance solid-waste project is currently addressing the issue.[8] As demand for water declined, groundwater levels have risen by about 12 meters, thus saving pumping costs. To date, however, this has had no discernible effect on seawater intrusion into the aquifer beneath Liepaja.[9] A Bank-financed subcomponent in the project that aimed at removal of iron from pumped groundwater and chlorination was transferred in 1998 to EU-Phare grant-financing.

11. Significant pollution hazards remain in the former military area. Although the industrial area and decommissioned submarine base north of the City Channel only account for 3.5 percent of sewage volume, this has considerably higher concentrations of pollutants because of industrial discharges. Sewage from this area is untreated because it is not connected to Liepaja WWTP. Cleanup of industrial and toxic wastes dumped into the former military harbor and navy harbor channel (the Kara Ostas Kanals) were excluded from the project because of a delayed handover by the Russian military (completed 1997) and because the likely costs of remediation were expected to be very high.[10] In 1999, the State Bureau for Environmental Impact Assessment approved a municipal proposal to build a wall around the site to ensure safe storage of dredged pollutants — a permanent solution has yet to be agreed and funded.

Objective 3: The Quality, Reliability And Cost Efficiency Of Water Supply And Sanitation Services Was Improved.

12. Water supply systems were upgraded to reduce leakage and new pumping plant was installed. Due to cost savings, renewal of water mains exceeded appraisal targets: 6.6 kilometers of main were installed in addition to 37 borehole and 8 distribution pumps and together this reduced unaccounted for water by over a million cubic meters a year. Over

7. OED. 2003. Project Performance Assessment Report Klaipeda Environmental Project.

8. The Bank's Liepaja Solid Waste Management Project (approved FY01) includes provisions to improve sludge management.

9. Latvian Environmental Agency. 2002. Environmental Indicators in Latvia 2002. Chapter 12: Use Of Water Resources.

10. About 29 ships containing industrial and toxic wastes were scuttled in the Kara Osta Kanals by the Soviets.

1,400 residential units were fitted with water meters that induced householders to repair leaks to save money. The WWTP and partly new terminal main and 15 new sewage pumps and a centralized operating system were completed for less than the cost estimated at appraisal. While these improvements increased efficiency – saving about $0.34 million or 11 percent of 1998 net revenues – subsequent escalation of electricity prices, supplies and wages and running costs of the extended WWTP, raised operating overall costs more than planned. A new and fully equipped water and wastewater quality laboratory, coupled with subsurface survey equipment and regular monitoring and maintenance, enables EU standards to be maintained.

13. Even with these improvements, piped water supply and sanitation still only reaches three-quarters of Liepaja's population. At appraisal only 10 percent of the population was unserved but, due to inclusion of the former military area after 1997, the unserved population increased to 25 percent and is located primarily in poor quality housing stock slated for redevelopment. In the ICR (page 67) the LWC state that, following a 1995 survey of 190 unserved households, "implementation of this component is not purposeful and the allocated amount can be used for reconstruction of water mains which was approved by the Financiers." The view of the City Council during the assessment was that redevelopment would be undertaken by either the residents or private contractors. In the meantime, householders take water from standpipes and solid waste baskets are collected by the municipality.[11]

Objective 4: Operational Efficiency and Management of Liepaja Water Company Was Improved.

14. Liepaja Water Company, a limited liability enterprise, was registered in July 1998. All shares are owned by the City Council, which selects the board members. Aided by a twinning arrangement with Norrköping Water Company (financed by Sida) and various grant-supported technical specialists, LWC is now a modern and well-run utility operated on commercial principles with a long-term strategic plan — a marked improvement since the early 1990s. Management is proactive and during project implementation used its initiative to achieve cost savings in a number of components and, as a result, did more upgrading than planned (para 4.6). While billing and collection rates are high, other financial indicators are not wholly satisfactory, Table 3.

15. Liepaja Water Company's total water demand declined by 35 percent between 1995 and 1999 because rehabilitation of the water mains reduced losses, and savings induced by higher water prices. Unaccounted-for water losses fell from 34 percent to 17 percent — better than projected SAR levels of 27 percent. Per capita water consumption fell from 200 l/day in 1995 to 114 l/day in 2002 — LWC expects per capita demand to bottom out at about

11. During appraisal, the Bank's regional water and sanitation advisor noted, "I cannot see the justification of a $16 million investment program in Liepaja with people left without water. After all, a safe and reliable water supply tends to be people's first choice and would help the image of LWWE and the ability to raise and collect tariffs." Bank Memorandum. June 6, 1994. In the SAR, it is reported that approximately 90 percent of Liepaja's population was served by water supply and sanitation services (SAR paras 1.31-1.32) and that water and wastewater services in the former "military zone", an area formerly occupied by the Soviet military, were to be handed over to LWWE (SAR para 1.27).

105 l/day in 2008. Even though there were substantial tariff increases, this did not compensate for the large decline in water sales. LWC continues to purchase water from the Lauma enterprise even though it now has excess capacity.[12]

Table 3: Liepaja Water Utility Performance Indicators

	Indicator	Target	Ex Ante 1993	Ex Post 2000
Operational	Population connected to utility water supply	100%	90%	75%
	Population connected to sewerage	-	75%	75%
	Number of Staff	-	320	242
	Number of Staff per 1000 Households Connected	<5#	12.9	**9.8**
	Water Sales (liters/capita/day)	140	187	114
	Non-Revenue Water (Production-Billings)/Production)	27%	34%	17%
	Collection Ratio (Billings/Collections)	100%	50%	99%
Financial	Average Annual Combined Tariff $/m3	##	$0.12	$0.78
	Working Ratio a/	<50%	67%	78%
	Operating Ratio b/	<85%	72%	122%

***Source**:* SAR and ICR, reports on file and interviews with LWC management and the City Council.

This ratio was not an appraisal target but the value shown (5) is typical best practice in developed countries.

A target tariff was not set at appraisal. Instead the tariff would be fixed following a study to determine the tariff adjustment needed to repay the World Bank and NEFCO loans.

a/ Working Ratio = (total O&M + non-core costs)/Total revenues

b/ Operating Ratio = (total O&M + depreciation + interest costs)/Total revenues

16. The domestic tariff increased by almost 550 percent between 1994 and 2002, the industrial and institutional tariff by even more, increases facilitated by a public outreach campaign financed by The Netherlands. Even so, LWC would like to raise water tariffs to enable it to improve income and undertake further renovation and service extension. After May 2002, when the government established a central regulator instead of the city council to fix tariffs, it was made clear to LWC that billing collection efficiency must be improved.[13] Additionally, the city council argued that it was uncomfortable with further increases for political reasons, and advocated a freeze on current tariffs for three years.

17. Billing and collection improved during the project and is about 99 percent. But billing actual consumption of residents in apartment blocks is a major issue. The city council has said that households without meters can only be billed 10 m^3 per capita per month even if they consume more, or there are leakages between the master meter and the household. In metered apartments, however, the billing is on the basis of the meter reading even when it is clear that the meter is significantly under-recording consumption. In both cases, LWC has to

12. It is probably loss-making as payment was made on hypothetical consumption norms (145 l/c/d) that were higher than actual consumption.

13. LWC stated that it had differences with the regulator about the methodology used to establish tariffs: issues include treatment of loans and interest and provision of a sinking fund.

absorb the difference. Individual houses with meters, however, normally pay the full bill. In consequence of these and other issues described, LWC has been unable to meet most of the SAR's financial targets, but as all the financial ratios are improving in the right direction, it is only a matter of time before LWC becomes a fully commercial operation. Rationalization of staffing would help.

Objective 5: Environmental Management and Eco-Tourism Were Promoted

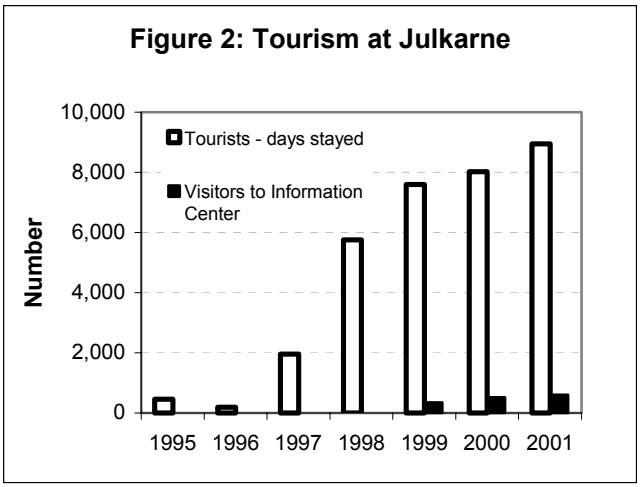
18. The environmental management activities proved, as expected, to be catalysts for local communities taking responsibility for the sustainable development of their areas. During the Second World War a large number of people were deported to Germany, and afterwards others were moved to Soviet gulag camps as the coastal zone became heavily militarized. The Soviet deportations targeted local leaders and the educated, suppressing local initiative and the capacity for innovation, and those who remained either served the military occupation, collective farming, or fishing. Following re-establishment of independence, much of the state-owned lands were subject to privatization and repossession by their pre-WWII owners. It was thus the government's intention to encourage community building and self-reliance through the development of eco-tourism activities within the framework of coastal zone protection laws (Annex B). In particular, two parishes — Jurkalne in the north and Rucava, which included Lake Pape in the south — were chosen to pilot sustainable environmental management activities.

19. **Jurkalne.** A steering group assisted by the WWF developed a management plan for Jurkalne Parish in 1996. Following the principles of integrated coastal zone management (Annex B) the plan integrated the socio-economic interests of the community with its environmental assets, which included coastlines of outstanding natural beauty. Activities included repair of the main beach access, establishment of parking areas, camp-sites, bed-and-breakfast accommodation, wildlife and walking guides, tourist information center, and multi-lingual signposts on main trails and points of interest. Community members were trained in small business management, book-keeping, and languages, and a small grant scheme was available to support other local initiatives. At the time of OED's evaluation, the community had successfully sustained and expanded the activities of the plan (even though foreign assistance had ceased four years earlier) and was working with other communities in the region to replicate their success. The local socio-economic impact of the initiative has been substantial (Figure 2). Although the SAR expected there to be a formal study that would evaluate the direct and indirect revenues from local and international tourism, and assess the benefits to the local community, this was not done.[14]

20. **Rucava Parish and Lake Pape.** As at Jurkalne, a management plan was developed that focused primarily on the development of the Lake Pape project area and its environs for eco-tourism. A major result of this was that Lake Pape was added to the Ramsar Convention's list of protected areas and a bird-watching tower was constructed. Unlike

14. SAR paras 5.6 — 5.9

Jurkalne, however, the plan has been only partially implemented because of the complex nature of the area and conflicting institutions.[15]



Source: Jurkalne Parish Council. 2002

21. Physical improvements were implemented. A number of civil works to redirect the Liegupe and Paurupe rivers around Lake Pape and reconstruct the outlet sluice gate of Lake Pape were completed. A municipal reed-cutting and reed-binding business was established using project-purchased equipment that employed about 11 people and sold more than 60,000 bundles of reeds worth about $42,000 in 2001. Poor design of the sluice exacerbated by floods, caused the sluice gate structure regulating the level of Lake Pape to subside in 2002, thus becoming inoperable.[16] As a result, uncontrolled lake levels seriously hampered reed-cutting in 2002 and only 10,000 bundles of reeds were harvested.

22. The solution is not easy because of the large number of stakeholders who hold differing views on the management of the lake and wetlands. The Department of Environment and the Ministry of Finance both say they do not have the money for repair, the several municipalities that own portions of the lake and wetlands are unwilling to contribute, and there appears to be a stand-off between the roads and highways department, whose road runs over the sluice, and Rucava parish council. The inability of multiple stakeholders to reach a consensus on what is relatively a simple issue is a microcosm of the problems slowing implementation of the integrated coastal zone management plan for the area.

23. Despite these differing stakeholder perspectives, the Lake Pape area appears to be successfully managed as a nature reserve — indications being its active ornithological center, the re-population of the adjacent pastures with indigenous horses and bison to re-graze overgrown ecosystems, and the creation of the Vitolnieki fishing-farm museum.

5. Ratings

Outcome

24. **The outcome is rated satisfactory as the project achieved its relevant objectives with minor shortcomings.** The overall rating is based on the relative importance of the five

15. There is large territorial fragmentation of administration and governance in Latvia. There are 552 local governments grouped into 26 district governments, which have voluntarily formed five planning regions. Superimposed on this are the various ministries and line agencies responsible for land use, environment, and hydrology. Thus, any land-use planning has multiple stakeholders and conflicts are commonplace.

16. This was primarily the result of poor foundation design. Following Soviet practice, design was undertaken by the State Hydraulic Bureau located in Riga.

objectives. For the first major objective, reducing pollution from wastewater discharged to the Baltic Sea, the most important activity was wastewater capture and establishing financially viable wastewater treatment. Because the emphasis of the second major objective was on promoting environmentally sustainable management of the coastal zone, tourism, and protected zones, the criteria used to judge achievement was the effectiveness of the promotion effort. These ratings of objectives are elaborated in the following sections and summarized in Table 4.

Table 4: Ratings for Achievement of Major Objectives

Objectives	Relevance	Efficacy	Efficiency	OUTCOME
1. Reduce discharge of partially treated and untreated wastewater to the Baltic Sea	High	Substantial	Substantial	Satisfactory
2. Restore and enhance the surface and groundwater quality in Liepaja, the northern portion of Lake Liepaja, the City Channel, and adjacent beaches on the Baltic Sea	Substantial	Modest	Not rated	Moderately Satisfactory
3. Improve the quality, reliability, and cost efficiency of water supply and sanitation services in Liepaja	Substantial	Substantial	Modest	Moderately Satisfactory
4. Improve operational efficiency and management systems of the Liepaja Water and Wastewater Enterprise	Substantial	High	Substantial	Satisfactory
5. Promote environmentally sustainable management and development of the coastal zone, tourism, and protected areas in and around Liepaja and Ventspils	Substantial	Modest	Not Rated	Satisfactory
Overall Rating	**Substantial**	**Substantial**	**Modest**	**Satisfactory**

Relevance

25. **Overall relevance of the objectives is substantial.** The project was highly relevant to the concerns of the Baltic Sea littoral states as it was designed to assist Latvia to implement the Baltic Sea Joint Comprehensive Environmental Program (JCP, para 1.2). It was relevant to national political priorities that sought accession to the EU, reintegration of the Liepaja region into the Latvian mainstream (para 2.1), and the Bank's regional sectoral strategy as indicated by the Bank's position in 1993 at the Riga Workshop on Water and Wastewater Utilities and the Gdansk Resource Mobilization Conference for the Baltic Sea Environment Program.

26. The Bank's 1994 Country Economic Memorandum and Latvia Public Expenditure Review recognized the need to support preventive measures (policies, assessment, regulatory, planning, and economic) to avoid adverse environmental effects, and remedial measures to address, *inter alia*, water pollution in a cost-effective manner. They also encouraged projects that mobilized cofinancing resources from other international financial institutions, bilateral donors, and NGOs. The continued relevance of the project is emphasized by the 1997 Country Assistance Strategy (CAS) the secondary objective of

which was to build sub-national government capacity and help Latvia design and implement human development reform programs and institution-building. Approval of the bank-financed Liepaja Solid Waste Management Project in 2001 reaffirmed the importance of pollution prevention and cleanup. Latvia's current priorities indicated in the 2002 CAS include Bank assistance to help achieve more balanced and sustainable development outside Riga, thus promoting poverty reduction in those areas.

Efficacy

27. **Efficacy is rated as substantial**. High government and regional stakeholder ownership, and their coordination through the project, ensured that actions to achieve reduction of pollution discharged to the Baltic Sea, the City Channel and Lake Liepaja were successfully implemented. The operational efficiency and management systems of the LWC were significantly improved and LWC is moving toward financial sustainability, thus demonstrating substantial institutional development and strengthening. Integrated coastal zone management, tourism, and protected areas were successfully promoted, albeit with mixed results.

Efficiency

28. **Project efficiency is rated as modest.** The ICR estimated the financial rate of return (FRR) for LWC to be *minus* 2.5 percent, the economic rate of return (ERR) was estimated at 6.5 percent. Actual ERR, if non-monetized benefits could be included, would be higher but by how much is not certain. There were significant environmental, human, and political benefits resulting from reduced pollution plus tourism benefits at Jurkalne and Rucava and biodiversity and ecosystem benefits around lakes Liepaja and Pape. Politically, the cleanup efforts were a clear signal that the environmental and human degradation associated with Soviet occupation were over. Attempts to capture the total economic value of environmental services — using contingent valuation methods — have been applied to the Baltic Sea in Sweden, Poland, and Lithuania to estimate the perceived value of reduced eutrophication.[17] The results from Sweden indicate that individuals were willing to pay about 0.5 percent of net income even though, unlike Liepaja, pollution was not a health hazard and water quality did not impose limitations on swimming and recreation. In addition, it is possible that the willingness to pay in the Liepaja area was significantly larger than in Sweden because improvements were more dramatic (e.g., visible elimination of sewage from the City Channel and beaches, reduction of smell, cancellation of swimming bans, increased tourism). Therefore, this evaluation believes that if all these benefits could be quantified the ERR would be higher than 6.5 percent but it may not reach the 12 percent fully satisfactory level. Therefore efficiency is rated as modest.

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17. Gren, I.M, T Sondequist, F. Wulff, S.Langass, M.Sandstrom and C. Folke. 1996. *Reduced Nutrient Loan to the Baltic Sea: Ecological Consequences, Costs and Benefits*. Beijer International Institute for Ecological Economics. Royal Swedish Academy. Makowska, A. and T. Zylicz. 1996. *Coasting an International Public Good: The Case of the Baltic Sea*. Warsaw Ecological Ecomics Centre, Warsaw University. Sonderqvist, T and H. Scharin. 2000. *The Regional Willingness To Pay For Reduced Eutrophication In The Swedish Archipelago*. Beijer International Institute for Ecological Economics. Royal Swedish Academy.

29. The largest shortcoming of the project was not extending a piped water supply and sewerage to all households in the enlarged service area – this should have been a priority. Next, unrealistic Latvian demand projections led to an oversized WWT facility and over-optimistic projections of revenue from sales of water and sewage services. In consequence, the lower cash flows were unable to generate acceptable FRR. However, an oversized WWT facility is not so serious given that the spare capacity will be fully utilized when the military-industrial area north of the city is connected to the sewer system in the near term.

Institutional Development

30. **The overall institutional development impact is rated as high.** Most importantly, achievements under the project facilitated the EU accession process. There was a high level of development of LWC as evidenced by successful reorganization, computerization, information systems, skills upgrading, and strategic planning — greatly enhanced by technical assistance from Nordic utilities under the twining arrangement and donors' support for environmental management. The project functioned as a catalyst for the development of local environmental legislation in line with EU standards for water and sewer system management. The success of institutional development is illustrated by the selection of the LWC project implementation unit to manage the follow-on solid waste management project financed by the EU, Sida, and the Bank. Indeed, Sida considers the Liepaja PIU to be the best-performing project unit in the Baltic States.[18] The process to establish realistic tariffs is a notable achievement by the City Council and its successor, the national regulator, but some problems remain.

31. Support for coastal zone and conservation management, and tourism development provided a forum for the DoE, Regional Councils, Regional Environmental Committees, Parish Councils, NGOs, and external stakeholders to interact, thus bringing the region into mainstream political life for the first time. Within the parishes, local citizens worked together to develop local conservation and tourism management plans and facilities that are providing important socio-economic benefits.

Sustainability

32. **Sustainability is rated likely.** Government, municipal, and utility ownership is high, and continued grant support from the central government, Nordic development partners, NGOs, and the EU to meet HELCOM and EU accession targets is highly likely. The water supply and pollution management technology carries few risks and the capacity is large enough to cover any foreseeable increase in demand for treatment capacity. It is likely that LWC's medium-term cash flow problems will be solved by a combination of tariff increases, central government grants, and improved governance in metering and billing. Sustainability of the entrepreneurial skills of local government and communities stimulated by the project at Jurkalne and Rucava is highly likely. While a viable system of integrated coastal zone

18. Sida 2000. Three Water And Environment Projects In Estonia, Latvia And Lithuania, Sida Evaluation Report 00/41.

management is not yet established, the debate is highly likely to be sustained given the high level of local and international stakeholder interest.

Bank Performance

33. **Bank performance is rated as satisfactory.** The Bank played a pivotal role in bringing together and coordinating multiple stakeholders to achieve the project's objectives and, in so doing, added considerable synergy to the process. The Bank loan, allied with grants enabled a diverse range of activities linking the priority Latvia gives to pollution reduction with lower-priority environmental management — both of which elevated Latvia's standing in the Baltic and European community. The Bank's focus on, and continued pressure to achieve, sound utility management was central to the success of LWC. Without the Bank, it was likely that the government's attention would only have been given to pollution management and that the transition toward a commercially oriented City Council and water utility would have taken longer. Central and local government and the bilateral donors were unanimous in their praise for the knowledge, skills, and dedication of Bank staff and it is clear that a strong and trusting partnership was established. The only negative comments were about to the Bank's difficult procurement procedures and the delays these caused.

34. Despite the above, the Bank did not give adequate attention to addressing policy issues surrounding extension of piped water supply and sanitation to the whole population of Liepaja. It is not clear that the $140,000 allocated for this task to cover 10 percent of the municipal population (3,300 households or $42/household) was adequate. The rationale for the "financiers" agreement to delete this in 1995 and reallocate the finance is unsatisfactory (para 13). Neither economic nor financial justification was given, or an assurance that the alternative service delivery arrangements were satisfactory to residents. The circumstances indicate that this was and is a politically sensitive issue involving assimilation of former Russian nationals into Latvia and, so soon after independence and appraisal, it may have been almost impossible to achieve an equitable solution. The ethnic issue was exacerbated by the delayed hand-over of the Soviet military area and this also compounded the problem by expanding the potential service area of LWC. However, it is clear that there was no practical solution possible in last two years of the project with all funds earmarked and/or contracted. In more recent years, the ethnicity issue has been increasingly redressed and, on at a national level, there does not seem to be a systematic discrepancy in poverty levels and service provision between the major ethnic groups living in Latvia.[19] Currently, service extension is being considered for financing by the EU.

Borrower Performance

35. **Borrower performance is rated satisfactory.** Ownership was high and proactive. Government, Liepaja City Council, LWC, and the parishes in the Liepaja region

19. Aasland, Aadne. 1999. Ethnicity and Poverty in Latvia. Fafo Institute for Applied Social Science. This paper is part of a larger project, sponsored by UNDP and the World Bank, the main objective of which is to provide policy recommendations for development of a National Poverty Eradication Strategy for Latvia.

demonstrated a high level of commitment to sound and sustainable utility and environmental management and this enabled achievement of most of the project's objectives.

6. Findings and Lessons

Findings

36. **Managing Pollution**. While the upgraded wastewater treatment facility reduced pollution levels to the Baltic Sea in accord with HELCOM targets, this was accelerated by reduced economic and industrial activity, and the constraining effect of increased water tariffs on demand. Nationally, once the most egregious and obvious sources of pollution are cleaned up, it will be necessary to move from an emission control regime to one that considers the effects of pollution within an environmental impact assessment framework; only thus can clean-up and control priorities be objectively prioritized.

37. Continued attention to cutting LWC's costs and raising tariffs is required to ensure the longer-term viability of the utility. The methodology for tariff setting appears to need further refinement. Financial losses to LWC caused by the City Council's rules on maximum billing amounts for apartments and precedence of household meters over bulk meters must be quickly resolved. While useful and pragmatic in managing and cleaning up pollution, the willingness of the Nordic and EU agencies to use grants to achieve HELCOM objectives, and government's willingness to give grant support to fill the gap created by inadequate tariffs, risks undermining the resolve of the municipality to ensure LWC becomes an independent commercial entity.

38. **Integrated Coastal Zone Management**. Each stakeholder appears to be pursuing its own interests and not working for the ICZM. As illustration, the former and current mayors of Rucava were very successful in publicizing the development opportunities of the area and attracted grant funding: examples include marketplace kiosks for traders, repairing houses, and installing water closets so that bed-and-breakfast accommodation could be established. On the conservation side, single-species experts, some of whom see "nature" and "environment" as separate entities, do not advocate a holistic ecological view; this conditions MoE views.[20] Conversely, WWF believes, for example, that most of the money should be used for activities related to promoting integrated ecosystem development of the area and nature conservation.

39. The problem is that the purposes of the management plan for the area are unresolved because each stakeholder group has different goals. Local stakeholders want to attract funding to build local infrastructure and provide employment; foreign environmental interests want to preserve Lake Pape and the coastal wetlands for nature and conservation activities within the framework of integrated ecosystems management; and the government of Latvia's primary focus was on meeting the EU's specific environmental directives to ensure smooth accession. Thus, for example, the foreign environmentalists argued for a

20. Personal communication, Ugis Rotberg, WWF Riga.

bridge instead of a sluice at the outlet of Lake Pape as this would allow the re-establishment of the natural wetlands and spawning links to the Baltic Sea that were lost when the first sluice was installed in 1820. While this would be good for wildlife, it would obviously not be so for employment, so the sluice was reconstructed using project funds. Even so, WWF still propose that the wetlands between Lake Pape and Lake Liepaja (which were reclaimed for collective farming after 1945) should be recreated by ceasing to drain the area. This action would create a nutrient trap for runoff, thus protecting the Baltic Sea, and yield considerable energy savings when pumping ceases.

40. In summary, the lack of consensus over the longer-term objectives of integrated coastal zone management around Lake Pape is a reflection of emerging Latvian priorities. The former dominance of relatively money-rich foreign interests came at a time when post-Soviet Latvian institutions were still emerging. Subsequently, some of the early Latvian environmental idealism (which was the "Trojan Horse" leading to the collapse of Soviet occupation) has been cooled by the hard realism of overcoming high levels of rural unemployment and poverty which, in 2000, stood at 28.5 percent.[21] Even so, the Latvian Environmental Protection Fund is well-endowed with about $20 million a year from environmental taxes and supports a large array of activities. But, as with the activities under the Liepaja project, a recent evaluation noted: "many specialists are not aware of broader environmental issues and continue to work in traditional boxes –science, nature, environment – with clear barriers dividing their work."[22] Thus greater efforts are needed to foster communication and coordination.

41. **Strong partnerships were key to the success of the project.** They added synergy to the individual efforts. Without the Bank's loan being tied to Nordic partners' grant funding of most infrastructure improvements, twinning arrangements, and reciprocal visits for LWC staff within the region, the Bank's efforts would have been much less effective. Similarly, WWF funding and staff were the main driving force behind the achievements in environmental and conservation management.

42. **But balancing partnerships is difficult.** There is no commonly agreed business model for sustainable development among Baltic State governments, donors, IFIs, and NGOs. The use of grants and tied aid, while welcome in Latvia, did little to address sustainability issues. A particularly thorny issue raised was that the Nordic bilateral agencies made several decisions on project issues without too much consultation with Latvian counterparts who felt that this undermined local capacity-building and demonstrated a lack of confidence and trust in Latvian capabilities.

43. **Management of the Baltic Sea Pollution Remains a Problem.** Despite these achievements, several studies indicate there is little apparent impact to date on the water

21. There is no official poverty line in Latvia but the World Bank 2000 poverty assessment used a poverty line of 28 lats per month, which is equal to half of the official "minimum crisis basket" — a social minimum line defined by the government.

22. Golder, Bronwen. 1998. *The State of the Environment and Environmental NGOs in Latvia – Perceptions and Observations.* WWF International.

quality of the Baltic Sea.[23] This is not unexpected given the that only a decade has elapsed since rampant pollution was endemic from the former Soviet Union, and that pollution abatement and mitigation efforts only date from the mid-1990s. Apart from direct pollution from coastal towns, more than three-quarters of water-borne pollution derives from difficult-to-control non-point sources associated with land use changes, agriculture, and forestry. Accumulated stocks of municipal and industrial wastes, some of them hazardous, are a problem. Transboundary pollution, while being reduced, is still a major issue with Lithuania and Belarus.[24] Latvia is only one of six eastern Baltic countries that discharge water bourne pollutants to the Baltic. Additionally, a substantial volume of pollution is deriving from rained-out aerosols from industry and power stations within and outside the Baltic Sea watershed. And within the Baltic Sea, the minimal rate of exchange to the Atlantic Ocean favors trapping and stocking of nutrients and hazardous chemicals. It is expected, however, that regional efforts will reduce the effects of more readily controlled biochemical oxygen demand and thus the extent of toxic algal blooms. There is a well-developed regulatory structure and use of economic instruments to control pollution in Latvia and other former Soviet states, but the charges are not yet high enough to be effective — a task made less palatable by the precarious state of industry and the need for the employment it sustains.

44. **A New Initiatives To Help Regional Coordination.** In February 2003, the Global Environment Facility (GEF) granted $5.5 million to assist HELCOM to implement the Baltic Sea Regional Project, which includes Estonia, Latvia, Lithuania, Poland, and the Russian Federation. Adopting a large marine ecosystems approach to managing the Baltic, the project targets cooperative management of land, coastal, and marine trans-boundary issues with the objective of restoration of ecological balances. Through its support for environmental management at the regional, national, and local level and strengthened assessment and monitoring, it will enable support for the initiatives started under the Liepaja environmental project.

Lessons

45. There are three:

- Regionally-sponsored environmental initiatives in response to inter-governmental action plans provide good opportunities for the Bank to exercise its comparative advantage in leveraging institutional reform through targeted lending. When linked with grant funding from bilateral development partners it provides a powerful and influential lobby for reform.

- When designing and implementing regional environmental initiatives and their specific projects, significant benefits can be achieved by addressing infrastructure investments, environmental management activities and capacity building in an

23. HELCOM. 2001. Baltic Sea Environment Proceedings Nos 82A and 84; Baltic Environmental Forum 2000. 2nd Baltic State of the Environment Report.

24. Latvian Environmental Agency. 2002. *Environmental Indicators in Latvia*. Transboundary pollution comprises 73 percent of the River Daugava's nitrogen discharge to the sea; 56 percent of the River Lielupe's, and 90 percent of the River Venta's.

integrated manner. Mutliplier effects will be achieved by careful attention and support for development of local institutions and their human resources.

- It is important to fully understand the interests and institutional capabilities of the various local stakeholders, specifically for community based activities, and to factor in sufficient time and resources to build a consensus for reform and agreement on issues and longer-term objectives. Care should taken to avoid project activities being driven by external partners as this can undermine local ownership.

Annex A. Basic Data Sheet

LIEPAJA ENVIRONMENT PROJECT (LOAN 3814 -LT)

Key Project Data *(amounts in US$ million)*

	Appraisal Estimate	*Actual or current estimate*	*Actual as % of appraisal estimate*
Total project costs	21.17	23.38	108%
Loan amount	4.00	4.00	100%
Cofinancing	11.22	12.22	109%
Cancellation			

Project Dates

	Original	*Actual*
PCD	07/09/93	
Appraisal	06/24/94	
Board approval	12/06/94	
Effectiveness	05/09/95	05/09/95
Mid-Term Review	09/25/97	09/25/97
Closing date	03/31/00	03/31/00

Staff Inputs (staff weeks)

	Actual Staff Weeks	*Actual US$('000)*
Identification/preparation	55.3	168.2
Appraisal/negotiation	50.6	82.9
Supervision	164.3	321.4
ICR	10.5	34.51
Total	180.4	607.01

Mission Data

Stage of Project Cycle	No. of Persons and Speciality		Performance Rating	
Month/Year	Number	Speciality	Implementation Progress	Development Objective
Identification/ Preparation	4	Environmental Specialist		
	2	Environmental Engineer		
	2	Environmental Economist		
	1	Procurement Specialist		
	1	Legal Advisor		
	1	Environmental Specialist		
	1	Environmental Specialist (Finland/MOE)		
	1	Environmental Engineer (Sweden/Sida)		
	1	Environmental Finance		
	14	(Specialist/NEFCO)		
Appraisal	4	Environmental Specialist		
	2	Environmental Engineer		
	1	Environmental Economist		
	1	Procurement Specialist		
	1	Environmental Specilaist (Finland/MOE)		
	1	Environmental Engineer (Sweden/Sida)		
	1	Environmental Economist (Sweden/Sida)		
	1	Environmental Finance		
	12	(Specialist (NEFCO)		
Supervision				
06/07/95-06/08/95	2	Environmental Economist	S	S
	1	Environmental Engineer		
	1	Environmental Specialist		
	1	Procurement Specialist		
02/13/96-02/16/96	2	Environmental Economist	S	S
	1	Environmental Engineer		
	1	Financial Specialist		
	1	Organization and Management Specialist		
	1	Procurement Analyst		
06/18/96-06/20/96	1	Environmental Economist	S	S
	1	Environmental Engineer		
	1	Financial Specialist		
	1	Organization and Management Specialist		
01/26/97-01/28/97	1	Environmental Engineer	HS	HS
	1	Financial Specialist		
	1	Organization and Management Specialist		
	1	Environmental Specialist		
	1	Procurement Analyst		
	1	Operations Analyst		
09/24/97-09/26/97	1	Environmental Engineer	HS	HS
	1	Financial Specialist		
	1	Financial Specialist		
	1	Organization and Management Specialist		
04/25/98-04/27/98	1	Environmental Economist	S	S
	2	Environmental Engineers		
	1	Environmental Specialist		
	1	Financial Specialist		
	1	Organization and Management		
	1	Specialist		
	1	Operations Assistant		

Stage of Project Cycle	No. of Persons and Speciality		Performance Rating	
Month/Year	**Number**	**Speciality**	**Implementation Progress**	**Development Objective**
11/05/98-11/07/98	1	Environmental Specialist	S	S
	2	Environmental Engineers		
	1	Financial Specialist		
	1	Organization and Management Specialist		
	1	Operations Analyst		
	1	Research Assistant		
06/15/99-06/17/99	1	Environmental Specialist	S	S
	1	Financial Specialist		
	1	Organization and Management Specialist		
	1	Environmental Engineer		
	1	Operations Assistant		
Completion	1	Environmental Specialist	S	S
	1	Senior Technical Adviser		
	1	Environmental Economist		
	1	Environmental Engineer		

Other Project Data

Borrower/Executing Agency:

FOLLOW-ON OPERATIONS

Operation	***Loan/Credit no.***	***Amount (US$ million)***	***Board date***
Liepaja Solid Waste Management Project	Loan 7033	2.22	September 2000

Annex B1. Guidelines to the Process of Integrating Environment and Economy

Noordwiijk Guidelines on Integrated Coastal Zone Management (ICZM)	Ramsar Convention Guidelines for Management Plans	IUCN – Parks for Life. On Protected Areas and Local Sustainable Development
ICZM focuses on three operational objectives: • Strengthening sectoral management, for instance through training, legislation, staffing • Preserving and protecting the productivity and biological diversity of coastal ecosystems, mainly through prevention of habitat destruction, pollution and overexploitation • Promoting rational development and sustainable utilization of coastal resources.	1) In general, a Management Plan is a four part unit: - description - recognition of the past modification of the area and of the possible threats. - evaluation and objectives - action plan 2) A management authority responsible for the implementation of the management process should be appointed. 3) When appropriate, management plans should incorporate both traditional and modern technologies. The plan must reflect the overall carrying capacity of the system. Implementation should optimize the sustainable use of existing resources.	• Policies are needed so that the existence of the protected area encourages the growth of the local economy in sustainable ways. Local people will then see the value of the protected area as a source of income and employment. Approaches might include: • Marketing local products with the name of the protected area on the label. • Developing the marketing skills of local communities so that they are able to meet the needs of tourists visiting protected areas, especially accommodation and meals. • Creating handicraft workshops, training facilities and shops in or around the protected area, so as to encourage local crafts. • Using the quality of scenery and the peaceful surroundings to establish health establishments and rest homes. • Encouraging rural communities to develop local museums of rural life, or other ways of celebrating their relationship with nature. • Developing farm-based tourism linked to visiting protected areas.

Annex B2: Law on Coastal Protection with Specification of Activities Prohibited within three Zones

Within 3-5km	Within 300m (Land)	Within 300m (Offshore
• Clearing of forests • Parking of cars and trailers • Tenting outside designated areas • Fires outside designated areas • Gardening • Visitor facilities outside existing urban areas • Quarrying and mineral excavation • Littering • Use of pesticides • Expansion of existing construction works • Destruction of landscape • Water level changes • Military activities	• Cutting of wood and solitary trees • Ground excavation and boulder replacements works • Material storing • Melioration works • Visitor facilities	• Quarrying of sand, gravel and other minerals • Construction works